Confidential draft registration statement submitted to the U.S. Securities and Exchange Commission on July 31, 2018. This draft registration statement has not been filed publicly with the U.S. Securities and Exchange Commission and all information contained herein remains strictly confidential.

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form S-1
REGISTRATION STATEMENT
Under
THE SECURITIES ACT OF 1933

SI-BONE, INC.
(Exact Name of Registrant as Specified in its Charter)

Delaware	**3841**	**26-2216351**
(State or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

SI-BONE, Inc.
471 El Camino Real, Suite 101
Santa Clara, California 95050
(408) 207-0700
(Address, including zip code and telephone number, including area code, of registrant's principal executive offices)

Laura A. Francis
Chief Financial Officer
SI-BONE, Inc.
471 El Camino Real, Suite 101
Santa Clara, California 95050
(408) 207-0700
(Name, address, including zip code and telephone number, including area code, of agent for service)

Matthew B. Hemington **John T. McKenna** **Cooley LLP** **3175 Hanover Street** **Palo Alto, California 94304** **(650) 843-5000**	*Copies to:* **Michael A. Pisetsky** **General Counsel** **SI-BONE, Inc.** **471 El Camino Real, Suite 101** **Santa Clara, California 95050** **(408) 207-0700**	**Michael Benjamin** **Peter J. Sluka** **Latham & Watkins LLP** **885 Third Avenue** **New York, New York 10022** **(212) 906-1200**

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this Registration Statement. If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐	Accelerated filer ☐	Non-accelerated filer ☑ (Do not check if a smaller reporting company)	Smaller reporting company ☐

Emerging growth company ☑

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	**Proposed Maximum Aggregate Offering Price(1)(2)**	**Amount of Registration Fee**
Common Stock, $0.0001 par value	$	$

(1) Estimated pursuant to Rule 457(o) under the Securities Act of 1933, as amended.
(2) Includes the aggregate offering price of additional shares that the underwriters have the option to purchase.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to such Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED , 2018

Shares

Common Stock

This is the initial public offering of shares of common stock of SI-BONE, Inc.

We are offering shares of our common stock. Prior to this offering, there has been no public market for our common stock. It is currently estimated that the initial public offering price per share will be between $ and $. We intend to apply to list our common stock on the Nasdaq Global Market under the symbol "SIBN."

We are an emerging growth company under the federal securities laws and will be subject to reduced public company reporting requirements. See "Prospectus Summary—Implications of Being an Emerging Growth Company."

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 14.

	Per Share	Total
Initial public offering price	$	$
Underwriting discounts and commissions(1)	$	$
Proceeds, before expenses, to us	$	$

(1) See "Underwriting" for additional disclosure regarding underwriting discounts, commissions and estimated offering expenses.

To the extent that the underwriters sell more than shares of common stock, the underwriters have a 30-day option to purchase up to an additional shares from us at the initial public offering price, less the underwriting discounts and commissions.

The underwriters expect to deliver the shares against payment in New York, New York on , 2018.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

Morgan Stanley **BofA Merrill Lynch**

Canaccord Genuity **JMP Securities**

, 2018

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Neither we nor the underwriters have authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus or in any applicable free writing prospectus is current only as of its date, regardless of its time of delivery or any sale of shares of our common stock. Our business, financial condition, results of operations, and prospects may have changed since that date.

Through and including , 2018 (25 days after commencement of this offering), all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

TRADEMARKS

Unless the context indicates otherwise, as used in this prospectus, the terms "SI-BONE" and "iFuse Implant System" or "iFuse" and other iFuse-formative trademarks, as well as other trademarks or service marks of SI-BONE appearing in this prospectus, are the property of SI-BONE. This prospectus contains additional trade names, trademarks, and service marks of ours and of other companies. We do not intend our use or display of other companies' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, these other companies.

KEY METRICS FOR STUDIES

Statistical significance in the studies described in this prospectus is denoted by p-values for both pain and disability analysis. The p-value is the statistical probability that the results observed are due to chance alone (i.e., a p-value <0.0001 for reduction in pain means that there is a less than a 0.01% chance that the demonstrated reduction in pain for subjects surgically treated with iFuse in relation to the non-surgical management group was purely due to chance).

The performance for subjects surgically treated with iFuse is evaluated using a number of commonly used metrics, including the following:

- **Visual analog scale, or VAS**: VAS measures a patient's pain intensity on a 0–100 scale, with zero representing no pain and 100 representing the worst pain imaginable. The VAS score is used to calculate changes in patient pain.
- **Oswestry Disability Index, or ODI**: ODI measures a patient's disability on a scale of 0–100, where zero represents no disability and scores greater than 60 represent very severe disability.

INVESTORS OUTSIDE THE UNITED STATES

Neither we nor the underwriters have done anything that would permit this offering or possession or distribution of this prospectus or any free writing prospectus we may provide to you in connection with this offering in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus and any such free writing prospectus outside of the United States.

PROSPECTUS SUMMARY

This summary highlights certain information contained elsewhere in this prospectus. This summary is not complete and does not contain all of the information you should consider in making your investment decision. You should read the entire prospectus carefully before making an investment in our common stock. You should carefully consider, among other things, our consolidated financial statements and the related notes and "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this prospectus. Except as otherwise indicated herein or as the context otherwise requires, references in this prospectus to "SI-BONE," "the company," "we," "us," and "our" refer to SI-BONE, Inc.

Our Business

We are a medical device company that has pioneered a proprietary minimally invasive surgical implant system, which we call iFuse, to fuse the sacroiliac joint to treat sacroiliac joint dysfunction that often causes severe lower back pain. Since we introduced iFuse in 2009, more than 33,000 procedures have been performed by over 1,600 surgeons, in the United States and 33 other countries. Published clinical studies have shown that 15% to 30% of all chronic lower back pain is associated with the sacroiliac joint. We believe iFuse is currently used in the majority of minimally invasive surgical fusions of the sacroiliac joint in the United States.

The two sacroiliac joints are the largest joints in the body and connect the sacrum, near the base of the spine, to the iliac bones, the two major bones of the pelvis. The iFuse system includes a series of patented triangular implants, the instruments we have developed to enable the procedure, as well as the diagnostic and surgical techniques we have developed to enable physicians to perform the procedure. We introduced our second generation implant, the iFuse-3D, in 2017. We market our products with a direct sales force and a number of distributors in the United States, and with a combination of a direct sales force and distributors in other countries.

Our growth rate has recently increased, which we attribute in part to more widespread insurance coverage for sacroiliac fusion procedures, with many recent positive payer coverage policies exclusive to our iFuse system, as well as our efforts to educate the market regarding sacroiliac dysfunction. Since January 1, 2018, because of the strength of published clinical evidence on iFuse, 19 U.S. payors have published reimbursement policies exclusively covering the patented triangular design of our iFuse implants and excluding coverage of other products that are intended to fuse the sacroiliac joint. We believe that the full impact of each exclusive coverage decision grows over time as we continue to educate surgeons about the coverage and the medical criteria they need to follow, and train them on the diagnosis and how to perform the iFuse procedure.

In 2016 and 2017, we generated revenue of $42.1 million and $48.0 million, respectively, a growth rate of 14%, and incurred net losses of $20.6 million and $23.0 million, respectively. Our gross margins were 88% and 89% for 2016 and 2017, respectively. For the six months ended June 30, 2017 and 2018, we generated revenue of $22.5 million and $26.4 million, respectively, a growth rate of 17%, and incurred net losses of $12.5 million and $7.3 million, respectively. Our gross margins were 89% and 92% for the six months ended June 30, 2017 and 2018, respectively. The number of iFuse procedures performed in the six months ended June 30, 2017 and 2018 was 2,739 and 3,200, respectively.

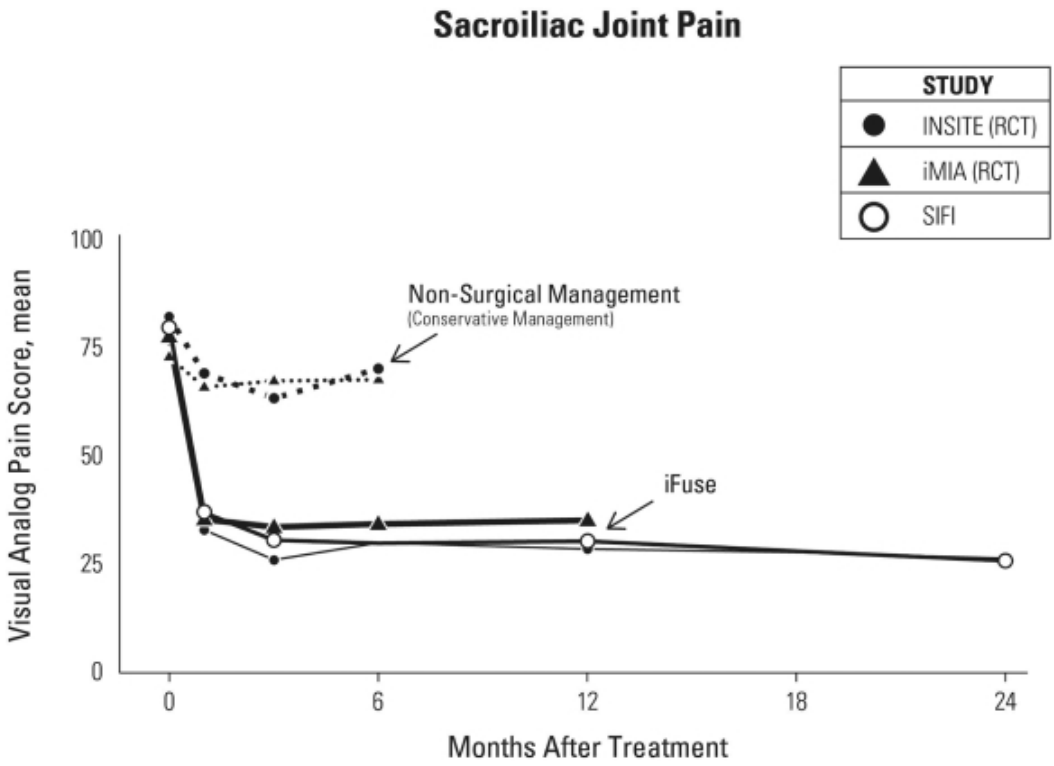
Patients with sacroiliac joint dysfunction may experience debilitating pain. We believe that the sacroiliac joint is the last major joint to be addressed by the orthopedic implant industry. Studies have shown that the disability that results from disease of the sacroiliac joint is comparable to the disability associated with a number of other serious orthopedic conditions, such as knee and hip arthritis and degenerative disc disease, each of which has surgical solutions where an implant is used and a multi-billion dollar market exists.

Our implants have a triangular cross section, which resists twisting of the implant within the bone in which it is implanted, helping stabilize the joint even before fixation of the bone onto the implant, or bony ingrowth,

which results in fusion. Products from our competitors use screws to treat the sacroiliac joint, which do not resist twisting within the bone as well as our patented triangular implants. A study we performed showed that our iFuse implants have more than six times the rotation resistance of a screw designed for sacroiliac joint fusion. We hold issued patents on implants with cross-sections of many non-round shapes, including the triangular shape we use for iFuse. We also hold issued patents for the method of placing those implants across the sacroiliac joint, as well as other parts of the spine and pelvis. Each titanium iFuse implant is at least three times the strength of a typical eight-millimeter surgical screw and the larger porous surface area of our implants allows for bony ingrowth. Three of our implants are typically used in each procedure.

Published Clinical Evidence on iFuse

The safety, clinical effectiveness, durability of pain relief and reduction in disability, cost effectiveness, and reduction in opioid use that result from iFuse are supported by a large number of studies that have resulted in more than 55 published papers. Several of these papers publish results from three prospective multicenter studies (INSITE, SIFI, and iMIA), two of which were randomized controlled clinical trials. These three prospective multicenter studies were summarized in a publication in *SPINE*, analyzing combined results from the three trials, as summarized in the graph below:



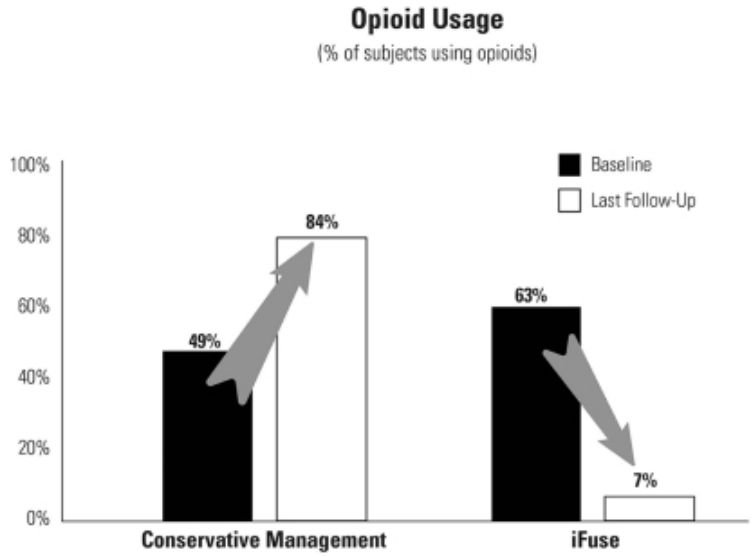
In INSITE, for example, one of the studies included in the graph above, subjects surgically treated with iFuse had mean 52-, 54-, and 55-point reductions in sacroiliac joint pain at 6, 12, and 24 months, respectively, as measured by the VAS, a standard method of assessing pain in which study subjects are asked to rate their pain from 0 (no pain) to 100 (worst imaginable pain). By contrast, subjects in the non-surgical management group had only a mean 12-point reduction at six months ($p<0.0001$), and only a small proportion of patients in the

non-surgical group had sufficient pain relief. The 12-point reduction in pain in the non-surgical management group is below a commonly accepted threshold of 20 points for clinically significant reduction in chronic back pain. At 24 months, the proportion of subjects with a reduction in VAS sacroiliac joint pain of 20 or more points due to the assigned treatment was 83% in the iFuse group and 10% in the non-surgical management group.

Results from the iMIA and SIFI studies were similar to INSITE.

There have been several studies showing longer-term follow-up of up to six years.

- LOIS is a prospective follow-on study, enrolling subjects at a subset of INSITE and SIFI sites treated with iFuse. Study outcomes at three years were published in April 2018 in *Medical Devices: Evidence and Research*. Amongst 103 enrolled subjects, mean sacroiliac joint pain at three years decreased from 81.5 preoperatively to 26.2 (a 56-point improvement from baseline, p<.0001). A manuscript showing sustained improvement in pain and disability at four-year follow-up was recently accepted for publication.
- A study in *Neurosurgery* published in April 2017 showed similar improvements in pain and disability in patients followed for up to six years. The study also showed a substantial reduction in the number of subjects using opioids in patients treated with iFuse at their last follow-up visit. As shown in the graph below, at the last follow-up visit, 84% of patients who received non-surgical management were using opioids, while only 7% of patients treated with iFuse were using opioids.



Surgical revision rate is an important measurement of a treatment's effectiveness for patients. Studies on lumbar, or lower back, fusion, a different type of spine procedure from iFuse, have shown revision rates as approximately 12%. A study published in *Medical Devices: Evidence and Research* in November 2015 showed that the cumulative four-year revision rate with iFuse was 3.5%. A single surgeon retrospective study published in the *International Journal of Spine Surgery* in January 2017 showed that the cumulative four-year revision rate for screw-based treatment of the sacroiliac joint was five times higher than the cumulative four-year revision rate for iFuse.

See "Business—Our Published Studies" for more detail from these studies.

Market Opportunity

We estimate that over 30 million American adults have chronic lower back pain. For patients whose chronic lower back pain stems from the sacroiliac joint, our experience in both clinical trials and commercial settings indicates that iFuse could be beneficial for at least 30% of patients who are properly diagnosed and screened for surgery by trained healthcare providers. Approximately 282,000 patients in the United States were estimated to have received multiple non-surgical steroid injections for sacroiliac joint pain in 2017. Based on our market experience and internal estimates, and the assumption that the average person suffering from sacroiliac joint dysfunction has been in pain for five years, we estimate that the potential market for iFuse in the United States could be 288,000 patients annually, for a potential annual market in the United States of approximately $2.7 billion. While we have made significant inroads at penetrating this market, patients received only 4,319 iFuse procedures in 2017.

Limitations of Prior Treatment

Patients with sacroiliac joint dysfunction or sacroiliac joint arthritis frequently experience significant pain simply from sitting, standing, or rolling over in bed. These activities result in small movements of the sacroiliac joints and pressure transferred across the joints. The pain can be exacerbated with activity—when a patient walks or runs, for example, the shock from each step is transmitted up the leg, through the iliac bones of the pelvis to the sacroiliac joint. The initial goal in fusion of the sacroiliac joint is to immediately stabilize the joint which very quickly decreases the pain. Following initial stabilization of the sacroiliac joint, the goal is to permanently fuse the joint. We believe our proprietary triangular implants stabilize the joint better and more quickly than competing technologies such as screws.

Surgical fusion of the sacroiliac joint with an open surgical technique was first reported in 1908, with further reports in the 1920s. The open procedure uses plates and screws, requires a 6- to 12-inch incision and is extremely invasive. The iFuse procedure involves a 1- to 2-inch incision and is much less invasive. For these reasons, we believe that open surgery for elective sacroiliac joint fusion has become less common in the United States since we introduced iFuse.

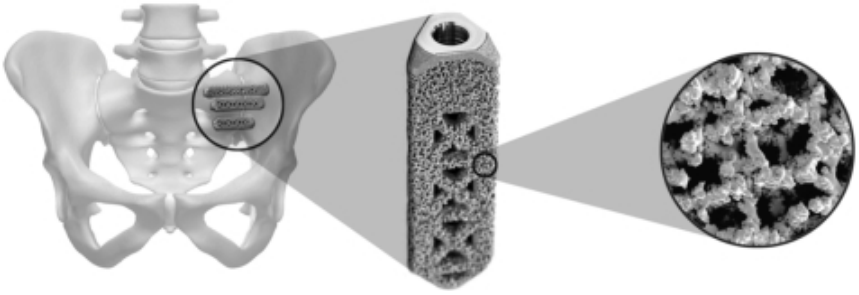
Due to its invasiveness, pain, long recovery time, and infrequent use, the open sacroiliac joint fusion procedure was rarely taught in medical school or residency programs. Prior to our launch of iFuse, most spine surgeons were unfamiliar with the sacroiliac joint and had never performed a sacroiliac joint fusion. As a result, when patients presented with lower back pain, spine surgeons often did not include evaluation of the sacroiliac joint in their diagnostic work-up. Surgeons who did recognize the condition typically told their patients they had nothing to offer surgically.

Since we launched iFuse, we have made considerable investments in teaching healthcare professionals to accurately diagnose and treat sacroiliac joint disorders. We provide instruction and training on how to perform provocative maneuvers in a physician’s office that can reveal the sacroiliac joint as the source of pain. If the provocative tests are positive, surgeons (or other physicians) confirm the diagnosis by injecting a small amount of local anesthetic into the joint under fluoroscopic guidance. The sacroiliac joint is confirmed as a pain source if the local anesthetic produces immediate and significant pain reduction. In addition to the differentiated characteristics of our iFuse procedure and triangular iFuse implants, we believe that more accurate diagnosis is part of the reason for the high success and patient satisfaction rates of the iFuse procedure.

Recently, major medical societies involved in spine surgery have begun offering sacroiliac joint diagnostic training sessions for their membership. In 2018, these societies include the North American Spine Society, or NASS, Congress of Neurologic Surgeons, or CNS, American Academy of Neurologic Surgeons, or AANS, International Society for the Advancement of Spine Surgery, or ISASS, and the Scoliosis Research Society, or SRS.

It is often difficult to identify the source of lower back pain. As a result, some surgical procedures performed on the spine have a sub-optimal success rate. For example, published studies of lumbar fusion have shown success rates of only approximately 60%. We believe low success rates of lumbar fusion are likely related, in many cases, to failure to diagnose the sacroiliac joint as the correct cause of pain.

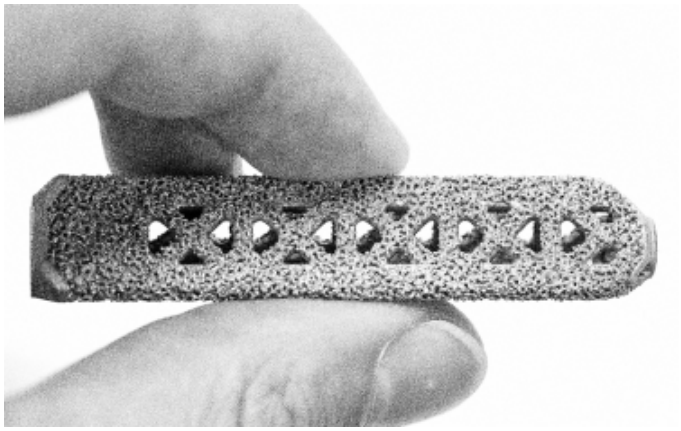
The iFuse procedure is typically performed under general anesthesia. The surgeon uses a custom instrument set we provide to prepare a triangular channel for each implant through the ilium, across the sacroiliac joint, and into the sacrum. An iFuse implant is then pressed into the triangular channel, which is slightly smaller than the implant, creating what is known as an interference fit. The triangular cross section of our iFuse implants, as shown below, prevents them from rotating. Our triangular iFuse implants cross the sacroiliac joint and provide immediate joint stability, which is why we believe pain diminishes soon after the iFuse procedure. Over time, bone grows onto the implants and across the joint, permanently stabilizing or fusing the joint.

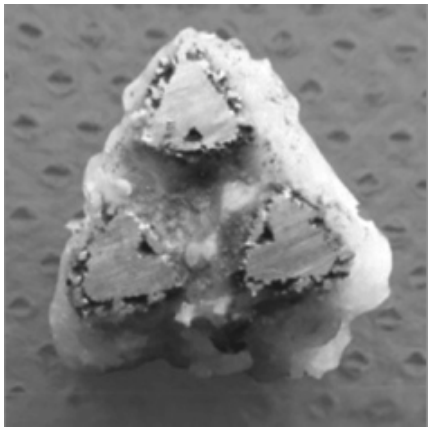


Because of the triangular shape, porous surface, strength, and other differentiating factors of our iFuse implants, we believe that our published clinical data do not apply to other minimally invasive solutions. Little published evidence of safety, clinical effectiveness, durability, or economic utility currently exists for sacroiliac fusion devices other than iFuse. We believe that the differences between iFuse and other products, as well as the substantial published clinical evidence showing the safety and effectiveness of iFuse, are the reason why a growing number of payors have recommended that iFuse be reimbursed for sacroiliac surgery to the exclusion of other technologies that are designed for the procedure.

Our Second-Generation Implant

Our second-generation iFuse implant, iFuse-3D, shown on the left below, was cleared for marketing by the U.S. Food and Drug Administration in March 2017 and the European Union in May 2017. This patented titanium implant combines the triangular cross-section of the iFuse implant with a proprietary 3D-printed porous surface and fenestrated design. This design also allows the surgeon to fill the implant with ground-up bone before implanting it, which some surgeons believe accelerates bone through-growth. iFuse-3D implants have shown positive bony ingrowth in cell culture and animal studies, whether or not ground-up bone is used, as shown in two peer reviewed studies published in June 2017 in the *International Journal of Spine Surgery*. The image on the right below shows the cross section cut from an iFuse-3D implant removed from an animal as part of the study, and reveals robust growth of bone into the implants.





Coverage and Reimbursement

As of July 31, 2018, U.S. payors covering 250 million lives reimburse for iFuse, 115 million of which are covered by private payors. There are a number of large and small private payors, including Aetna, Cigna, Humana, and Anthem, that are not yet reimbursing for the procedure. Some of these non-covering payors are reevaluating coverage given the latest data, but there can be no assurance they will reach positive coverage decisions.

Prior to our launch of iFuse in 2009, Medicare and most private insurance companies reimbursed surgeons routinely for sacroiliac joint fusions, which were primarily invasive. However, effective July 1, 2013, the American Medical Association's, or AMA's, Editorial Panel effectively restricted reimbursement for minimally invasive sacroiliac joint fusion because they considered the published clinical evidence at the time to be inadequate.

Subsequently, as a result of the growing number of published clinical studies demonstrating the effectiveness and safety of iFuse, along with the support of several professional medical specialty societies and leading academic surgeons, the AMA Editorial Panel established a new reimbursement code for minimally invasive sacroiliac joint fusion surgery, effective January 1, 2015. However, the new code did not immediately lead to positive coverage decisions by payors—in many cases, the payors wanted additional published evidence before deciding to cover the procedure. As a result, positive reimbursement decisions covering the procedure have occurred over the last few years, and some payors are still in the process of making decisions based on the most recent evidence.

Coverage decisions for this code are made independently by each private insurance company and each of the seven regional Medicare Administrative Contractors that help manage Medicare. The process of obtaining coverage is laborious. As of June 30, 2016, because of the iFuse clinical evidence, all Medicare Administrative Contractors were covering the procedure. At the time, very few private payors were covering. However, as of July 31, 2018, 39 of the largest 66 private payors were covering regularly, or had announced coverage for, the iFuse procedure, while the remaining private payors were reevaluating their coverage policies. Of these, 23 private payors have issued positive coverage policies exclusive to iFuse for sacroiliac joint fusion because of the clinical evidence. Seventeen of these exclusive coverage policies have published since January 1, 2018, which we believe has contributed to our accelerating sales growth in fiscal year 2018.

Prior to payor coverage, surgeons have been reluctant to get trained on a procedure for which they could not reliably be reimbursed. We believe it takes between six and 24 months for surgeons to fully incorporate iFuse into their practices after payors initiate coverage. Further, the administrative burden on surgical practices can be substantial for patients where reimbursement coverage is new, and some surgeons do not believe that the current average surgeon reimbursement is yet adequate to compensate them. As reimbursement coverage has improved, surgeon interest in learning to diagnose the sacroiliac joint and perform iFuse procedures has been increasing.

Specialty benefit managers and companies which perform healthcare technology assessments have significant influence on coverage decisions. In 2018, four of the leading organizations, including Milliman Care Guidelines, AIM Specialty Health, Blue Cross Blue Shield Association Evidence Street, and eviCore Healthcare published positive coverage recommendations to their constituents and payor customers, of which three have recommended that iFuse be covered exclusively. Internationally, the United Kingdom's National Institute for Health and Care Excellence, or NICE, published a positive coverage recommendation for sacroiliac joint fusion in 2017. Additionally, in June 2018, the public hospital system in France announced it will initiate coverage for iFuse exclusively beginning September 1, 2018.

Our Strategy

Our business objective is to maintain and enhance our leadership position in the area of sacroiliac joint fusion by providing clinically proven products and procedure-related training to promote relief of pain and disability in affected patients. To accomplish this objective, we intend to:

- Continue to educate physicians and other healthcare providers, payors, and patients globally about the growing body of evidence supporting the safety, durable clinical effectiveness, economic benefit, and reduction in opioid use associated with the iFuse procedure;
- Educate and train the healthcare community on the prevalence, anatomy, diagnosis, and treatment options for the sacroiliac joint, including minimally invasive surgical fusion, and work with and support medical societies including NASS, CNS, AANS, ISASS, SRS, and the American Academy of Orthopaedic Surgeons, or AAOS, to increase their education programs teaching the diagnosis of the sacroiliac joint as part of the differential diagnosis of lower back pain;
- Increase exclusive and non-exclusive reimbursement coverage for iFuse;
- Expand our direct field organization in the United States and select European countries to help drive adoption of our iFuse products;
- Maintain our technological leadership by investing in the creation of new or improved products for sacroiliac joint surgery, and obtain domestic and international regulatory clearance or approvals to market them in the United States and additional countries; and
- Continue to grow our existing intellectual property portfolio.

Company History

SI-BONE was founded in 2008 by orthopedist Mark A. Reiley, M.D., the main inventor of iFuse and member of our board of directors, as well as our President, Chief Executive Officer, and Chairman, Jeffrey W. Dunn, and orthopedic surgeon Leonard Rudolf, M.D. Dr. Reiley previously invented balloon kyphoplasty and founded Kyphon Inc., which was sold to Medtronic in 2007. He also invented the INBONE total ankle replacement system, which was sold to Wright Medical Technology, Inc. in 2008.

As of June 30, 2018, we had 168 employees, including a direct field sales organization of 72 in the United States and 28 in Europe. We intend to expand our direct field organization with some of the proceeds from this offering. As of June 30, 2018, we had 40 issued patents throughout the world, of which 34 were in the United States, and 18 pending patent applications, of which 11 were in the United States. These patents and applications cover various aspects of the iFuse procedure, implants, and instruments.

Risks Associated with Our Business

Our business is subject to numerous risks, as more fully described in the section "Risk Factors," which immediately follow this prospectus summary. These risks include, among others:

- We have incurred significant operating losses since inception, we expect to continue to incur operating losses in the future, and we may not be able to achieve or sustain future profitability.
- If hospitals, surgeons, and other healthcare providers are unable to obtain coverage and reimbursement from third-party payors for procedures performed using our products, adoption of our products may be delayed, and it is unlikely that they will gain further acceptance.
- If the reimbursement provided by third-party payors to hospitals, surgeons, and other healthcare providers for procedures performed using our products is insufficient, adoption and use of our products and the prices paid for our implants may decline.
- If healthcare payors reverse decisions to cover minimally invasive sacroiliac joint fusion exclusively when performed with iFuse and choose to reimburse for procedures performed with competitive products, our market share could decline, adversely affecting our revenues.
- We may not be able to convince physicians that iFuse is an attractive alternative to our competitors' products and that our procedure is an attractive alternative to existing surgical and non-surgical treatments of the sacroiliac joint.
- Surgeons and payors may not find our clinical evidence to be compelling, which could limit our sales and revenue, and on-going and future research may prove our products to be less safe and effective than initially anticipated.
- Pricing pressure from our competitors, changes in third-party coverage and reimbursement, healthcare provider consolidation, payor consolidation and the proliferation of "physician-owned distributorships" may impact our ability to sell our product at prices necessary to support our current business strategies.
- We operate in a very competitive business environment and if we are unable to compete successfully against our existing or potential competitors, our sales and operating results may be negatively affected and we may not grow.
- We currently manufacture and sell products used in a single procedure, which could negatively affect our operations and financial condition.
- If we are unable to maintain and expand our network of direct sales representatives and third-party distributors, we may not be able to generate anticipated sales.

- We, our suppliers, and our third-party manufacturers are subject to extensive governmental regulation both in the United States and abroad, and failure to comply with applicable requirements could cause our business to suffer.
- We and our sales representatives must comply with U.S. federal and state fraud and abuse laws, including those relating to physician kickbacks and false claims for reimbursement, as well as equivalent foreign laws.

Implications of Being an Emerging Growth Company

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act, or the JOBS Act, and therefore we intend to take advantage of certain exemptions from various public company reporting requirements, including not being required to have our internal control over financial reporting audited by our independent registered public accounting firm pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and any golden parachute payments not previously approved. We may take advantage of these exemptions for up to five years or until we are no longer an "emerging growth company," whichever is earlier. In addition, the JOBS Act provides that an "emerging growth company" can delay adopting new or revised accounting standards until those standards apply to private companies. We have elected to avail ourselves of this exemption and, therefore, we will not be subject to the same new or revised accounting standards as other public companies that are not "emerging growth companies."

Corporate Information

We were incorporated in March 2008 in Delaware. Our principal executive offices are located at 471 El Camino Real, Suite 101, Santa Clara, California 95050 and our telephone number is (408) 207-0700. Our website address is www.si-bone.com. The information on, or that can be accessed through, our website is not part of this prospectus. We have included our website address as an inactive textual reference only.

THE OFFERING

Shares of common stock offered by us	shares
Shares of common stock to be outstanding after this offering	shares (shares if the underwriters exercise their option to purchase additional shares in full)
Option to purchase additional shares	We have granted to the underwriters the option, exercisable for 30 days, to purchase up to additional shares of our common stock.
Use of proceeds	We estimate that the net proceeds from this offering of shares of our common stock will be approximately $ million, or $ million if the underwriters exercise their option to purchase additional shares in full, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus. We expect to use approximately $ million of the net proceeds for sales and marketing activities to support ongoing commercialization of the iFuse Implant System and the remainder, if any, for working capital and general corporate purposes, including research and development and clinical studies. We may also use a portion of our net proceeds to acquire or invest in complementary products, technologies, or businesses; however, we currently have no agreements or commitments to complete any such transactions. See "Use of Proceeds."
Risk factors	See "Risk Factors" and the other information included in this prospectus for a discussion of factors you should consider carefully before deciding to invest in our common stock.
Proposed Nasdaq Global Market symbol	"SIBN"

The number of shares of common stock to be outstanding after this offering is based on shares of common stock outstanding as of June 30, 2018, and excludes:

- 52,224,031 shares of common stock issuable upon the exercise of options outstanding as of June 30, 2018, with a weighted-average exercise price of $0.23 per share;
- 4,141,369 shares of common stock, as converted, issuable upon the exercise of warrants outstanding as of June 30, 2018, with a weighted-average exercise price of $0.48 per share;
- 867,474 additional shares of common stock reserved for future issuance under our 2008 Stock Plan, which shares will cease to be available for issuance at the time our 2018 Equity Incentive Plan becomes effective upon the execution of the underwriting agreement for this offering;

- 46,377,691 shares of common stock reserved for future issuance under our 2018 Equity Incentive Plan, as well as any increases in the number of shares of common stock reserved for future issuance under this plan, which will become effective upon the execution of the underwriting agreement for this offering; and
- 9,275,538 shares of common stock reserved for future issuance under our 2018 Employee Stock Purchase Plan, as well as any increases in the number of shares of common stock reserved for future issuance under this plan, which will become effective upon the execution of the underwriting agreement for this offering.

Unless otherwise indicated, all information in this prospectus assumes:

- The filing of our amended and restated certificate of incorporation and the effectiveness of our amended and restated bylaws upon the closing of this offering;
- A -for- reverse stock split of common stock and preferred stock effected on , 2018;
- The conversion of all warrants to purchase shares of preferred stock into warrants to purchase shares of common stock immediately prior to the closing of this offering;
- The conversion of all outstanding shares of preferred stock into an aggregate of 217,201,525 shares of common stock immediately prior to the closing of this offering;
- The issuance of shares of common stock upon the automatic net exercise of warrants, with an exercise price of $0.51 per share, immediately prior to the closing of this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus;
- The reclassification of all outstanding shares of Series 1 common stock and Series 2 common stock into a single class of common stock named “common stock,” which shall have the same voting powers, preferences, rights and qualifications, limitations, and restrictions as the current Series 2 common stock, immediately prior to the closing of this offering;
- No exercise of outstanding options and warrants, other than as provided for above; and
- No exercise by the underwriters of their option to purchase up to additional shares of common stock.

SUMMARY CONSOLIDATED FINANCIAL DATA

The following summary consolidated financial data should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and related notes included within this prospectus. The consolidated statements of operations data for the years ended December 31, 2016 and 2017, are derived from our audited consolidated financial statements and related notes included elsewhere in this prospectus. The consolidated statements of operations data for the six months ended June 30, 2017 and 2018, and the consolidated balance sheet data at June 30, 2018, are derived from our unaudited consolidated financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results to be expected in the future and our results for the six months ended June 30, 2018 are not necessarily indicative of the results that may be expected for the full fiscal year.

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
	(in thousands, except share and per share data)			
Consolidated Statements of Operations Data:				
Revenue	$ 42,101	$ 47,983	$ 22,531	$ 26,375
Cost of goods sold	5,165	5,112	2,566	2,230
Gross profit	36,936	42,871	19,965	24,145
Operating expenses:				
Sales and marketing	35,215	41,646	21,130	21,285
Research and development	6,380	5,513	2,768	2,502
General and administrative	12,906	13,062	6,737	4,972
Total operating expenses	54,501	60,221	30,635	28,759
Loss from operations	(17,565)	(17,350)	(10,670)	(4,614)
Interest and other income (expense), net:				
Interest income	71	175	73	130
Interest expense	(3,308)	(6,204)	(1,920)	(2,544)
Other income (expense), net	213	340	66	(320)
Net loss	(20,589)	(23,039)	(12,451)	(7,348)
Other comprehensive income:				
Changes in foreign currency translation	67	(70)	(35)	33
Comprehensive loss	$ (20,522)	$ (23,109)	$ (12,486)	$ (7,315)
Net loss per common share, basic and diluted(1)	$ (0.35)	$ (0.37)	$ (0.20)	$ (0.11)
Weighted-average common shares used to compute basic and diluted net loss per common share(1)	59,659,307	62,411,906	62,024,861	64,862,952
Pro forma net loss per common share, basic and diluted (unaudited)(1)		$		$
Pro forma weighted-average number of common shares used to compute basic and diluted net loss per share (unaudited)(1)				

(1) See Note 14 to our consolidated financial statements included elsewhere in this prospectus for the method used to calculate net loss per common share, basic and diluted, and pro forma net loss per common share, basic and diluted, and weighted average number of shares used in the computation of the per share amounts.

	As of June 30, 2018		
	Actual	Pro Forma(1)	Pro Forma As Adjusted(2)(3)
	(in thousands)		
Consolidated Balance Sheet Data:			
Cash and cash equivalents	$ 16,233	$	$
Working capital	20,040		
Total assets	29,913		
Redeemable convertible preferred stock warrant liability	646		
Total long-term borrowings	38,834		
Total liabilities	47,068		
Redeemable convertible preferred stock	118,548		
Total stockholders' (deficit) equity	(135,703)		

(1) The pro forma column reflects (i) the conversion of all outstanding shares of our preferred stock into an aggregate of 217,201,525 shares of common stock immediately prior to the closing of this offering, (ii) the issuance of shares of common stock upon the automatic net exercise of outstanding warrants, with an exercise price of $0.51 per share, immediately prior to the closing of this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and (iii) the reclassification of our preferred stock warrant liability to additional paid-in capital immediately prior to the closing of this offering.

(2) The pro forma as adjusted column further reflects the sale of shares of common stock in this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

(3) A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) each of pro forma as adjusted cash and cash equivalents, working capital, total assets, and total stockholders' equity by $ million, assuming the number of shares we are offering, as set forth on the cover page of this prospectus, remains the same, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. An increase (decrease) of 1,000,000 in the number of shares offered by us would increase (decrease) each of pro forma as adjusted cash and cash equivalents, working capital, total assets, and total stockholders' equity by $ million, assuming the initial public offering price per share remains the same, after deducting underwriting discounts and commissions. The pro forma as adjusted information is illustrative only, and we will adjust this information based on the actual initial public offering price, number of shares offered, and other terms of this offering determined at pricing.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this prospectus, including our consolidated financial statements and the related notes and the section "Management's Discussion and Analysis of Financial Condition and Results of Operations," before deciding whether to invest in our common stock. The occurrence of any of the events or developments described below could materially and adversely affect our business, financial condition, results of operations, and growth prospects. In such an event, the market price of our common stock could decline, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations.

Risks Related to Our Business and Our Industry

We have incurred significant operating losses since inception, we expect to continue to incur operating losses in the future, and we may not be able to achieve or sustain future profitability.

We have incurred net losses since our inception in 2008. For 2017 and the six months ended June 30, 2018, we had net losses of $23.0 million and $7.3 million, respectively. As of June 30, 2018, we had an accumulated deficit of $147.1 million. To date, we have financed our operations primarily through private placements of equity securities, certain debt-related financing arrangements, and from sales of our products. We have devoted substantially all of our resources to research and development of our products, sales and marketing activities, investments in training and educating surgeons and other healthcare providers, and clinical and regulatory matters for our products. There can be no assurances that we will be able to generate sufficient revenue from our existing products or from any of our product candidates in development, and to transition to profitability and generate consistent positive cash flows. Following this offering, we expect that our operating expenses will continue to increase as we continue to build our commercial infrastructure, develop, enhance, and commercialize our existing and new products and incur additional operational and reporting costs associated with being a public company. As a result, we expect to continue to incur operating losses for the foreseeable future and may never achieve profitability. Furthermore, even if we do achieve profitability, we may not be able to sustain or increase profitability on an ongoing basis. If we do not achieve profitability, it will be more difficult for us to finance our business and accomplish our strategic objectives.

Our recurring losses from operations and negative cash flows raise substantial doubt about our ability to continue as a going concern. In addition, our credit facility agreement requires us to comply with certain financial covenants, including minimum liquidity, revenue, and earnings targets. As a result, our independent registered public accounting firm included an explanatory paragraph in its report on our financial statements as of, and for the year ended, December 31, 2017, describing the existence of substantial doubt about our ability to continue as a going concern. We believe that the successful completion of this offering will eliminate this doubt and enable us to continue as a going concern; however, if we are unable to raise sufficient capital in this offering, we may need to obtain alternative financing or significantly modify our operational plans for us to continue as a going concern. Our expected future capital requirements may depend on many factors including expanding our surgeon base, the expansion of our sales force, and the timing and extent of spending on the development of our technology to increase our product offerings. We may need additional funding to fund our operations but additional funds may not be available to us on acceptable terms on a timely basis, if at all. We may seek funds through borrowings or through additional rounds of financing, including private or public equity or debt offerings. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Any future debt financing into which we enter may impose upon us additional covenants that restrict our operations, including limitations on our ability to incur liens or additional debt, pay dividends, repurchase our common stock, make certain investments, and engage in certain merger, consolidation or asset sale transactions. Any future debt financing or additional equity that we raise may contain terms that are not favorable to us or our stockholders. Furthermore, we cannot be certain that additional funding will be available on acceptable terms, if

at all. If we are unable to raise additional capital or generate sufficient cash from operations to adequately fund our operations, we will need to curtail planned activities to reduce costs, which will likely harm our ability to execute on our business plan and continue operations.

If hospitals, surgeons, and other healthcare providers are unable to obtain coverage and reimbursement from third-party payors for procedures performed using our products, adoption of our products may be delayed, and it is unlikely that they will gain further acceptance.

Maintaining and growing sales of our products depends on the availability of adequate coverage and reimbursement from third-party payors, including government programs such as Medicare and Medicaid, private insurance plans, and managed care programs. Hospitals, surgeons, and other healthcare providers that purchase or use medical devices generally rely on third-party payors to pay for all or part of the costs and fees associated with the procedures performed with these devices.

Adequate coverage and reimbursement for procedures performed with our products is central to the acceptance of our current and future products. We may be unable to sell our products on a profitable basis if third-party payors deny coverage, continue to deny coverage or reduce their current levels of payment, or if our costs of production increase faster than increases in reimbursement levels. For example, our sales decreased significantly after minimally invasive sacroiliac joint fusion was assigned to a Category III Current Procedure Terminology, or CPT, code effective July 1, 2013. After implementation of this Category III CPT Code, surgeons were no longer able to consistently obtain reimbursement for procedures performed using our products. However, effective January 1, 2015, minimally invasive sacroiliac joint fusion was assigned to a Category I CPT Code.

Many private payors refer to coverage decisions and payment amounts determined by the Centers for Medicare and Medicaid Services, or CMS, which administers the Medicare program, as guidelines for setting their coverage and reimbursement policies. By June 30, 2016, all Medicare Administrative Contractors were regularly reimbursing for minimally invasive sacroiliac joint fusion. Private payors that do not follow the Medicare guidelines may adopt different coverage and reimbursement policies for procedures performed with our products. Private commercial payors have been slower to adopt positive coverage policies for minimally invasive sacroiliac joint fusion, and many private payors still have policies that treat the procedure as experimental or investigational and do not regularly reimburse for the procedure. Future action by CMS or third-party payors may further reduce the availability of payments to physicians, outpatient surgery centers, and/or hospitals for procedures using our products.

The healthcare industry in the United States has experienced a trend toward cost containment as government and private insurers seek to control healthcare costs. Payors are imposing lower payment rates and negotiating reduced contract rates with service providers and being increasingly selective about the technologies and procedures they chose to cover. For example, several Blue Cross Blue Shield payors have recently adopted policies that treat 3D-printed orthopedic implants that come in standard sizes, rather than customized to the patient's anatomy, such as our iFuse-3D implant, as experimental and investigational and therefore not eligible for reimbursement. There can be no guarantee that we will be able to provide the scientific and clinical data necessary to overcome these policies. Such policies may contribute to a decrease in sales of our iFuse-3D implants. Payors may adopt policies in the future restricting access to medical technologies like ours and/or the procedures performed using such technologies. Therefore, we cannot be certain that the procedures performed with each of our products will be reimbursed. There can be no guarantee that, should we introduce additional products in the future, payors will cover those products or the procedures in which they are used.

Market acceptance of our products in foreign markets may depend, in part, upon the availability of coverage and reimbursement within prevailing healthcare payment systems. Reimbursement and healthcare payment systems in international markets vary significantly by country and include both government-sponsored healthcare and private insurance. We may not obtain additional international coverage and reimbursement approvals in a

timely manner, if at all. Our failure to receive such approvals would negatively impact market acceptance of our products in the international markets in which those approvals are sought.

If the reimbursement provided by third-party payors to hospitals, surgeons, and other healthcare providers for procedures performed using our products is insufficient, adoption and use of our products and the prices paid for our implants may decline.

When an iFuse procedure is performed, both the surgeon and the healthcare facility, either a hospital or ambulatory surgery center, submit claims for reimbursement to the healthcare payor. Generally, the facility obtains a lump sum payment, or facility fee, for minimally invasive sacroiliac joint fusions. Our products are purchased by the facility, along with other supplies used in the procedure. The facility must also pay for its own fixed costs of operation, including certain operating room personnel involved in the procedure. If these costs exceed the facility fee reimbursement, the facility's managers may discourage or restrict surgeons from performing the procedure in the facility or using certain technologies, such as our iFuse implants, to perform the procedure.

The national average Medicare payment per procedure to hospital outpatient departments increased from $10,538 to $14,704 effective January 1, 2017. Effective January 1, 2018, the national average Medicare payment to hospital outpatient departments is $15,371. Effective January 1, 2018, the Medicare payment to an ambulatory surgery center for a sacroiliac joint fusion is $12,456. We believe that payments to facilities are generally adequate for these facilities to offer the iFuse procedure. However, there can be no guarantee that these facility fee payments will not decline in the future. The number of iFuse procedures performed and the prices paid for our implants may in the future decline if payments to facilities for minimally invasive sacroiliac joint fusions decline.

Surgeons are reimbursed separately for their professional time and effort to perform a surgical procedure. Prior to reassignment of minimally invasive sacroiliac joint fusion to a Category III CPT Code, the national average Medicare physician fee schedule payment to surgeons for CPT codes commonly used to submit claims for reimbursement for the iFuse procedure was approximately $1,000 and the procedure was commonly covered by both government and private commercial payors in the United States. In 2015, the national average physician payment for the new Category I CPT Code for minimally invasive sacroiliac fusion was $574, and we believe that this payment caused adoption of the procedure to slow. Effective January 1, 2016, the national average Medicare payment for the Category I CPT code increased to $718, and the national average payment effective January 1, 2018, is $720. Many private payors set their payment amounts with reference to the Medicare payment, often approximately 10% to 33% higher than the Medicare payment for a procedure. For some governmental programs, such as Medicaid, coverage and reimbursement differ from state to state, and some state Medicaid programs may not pay an adequate amount for the procedures performed with our products, if any payment is made at all.

We believe that some surgeons view the current Medicare reimbursement amount as insufficient for the procedure, given the work effort involved with the procedure, including the time to diagnose the patient and obtain prior authorization from the patient's health insurer if necessary. Many private payors require extensive documentation of a multi-step diagnosis before authorizing minimally invasive sacroiliac joint fusion for a patient. We believe that some private payors apply their own coverage policies and criteria inconsistently, and surgeons may not be able to consistently have minimally invasive sacroiliac fusions approved and covered. The perception by physicians that the reimbursement for minimally invasive sacroiliac joint fusion is insufficient to compensate them for the work required, including diagnosis, documentation, obtaining payor approval for the procedure, and burden on their office staff, may negatively affect the number of procedures performed and may therefore impede the growth of our revenues or cause them to decline.

If healthcare payors reverse decisions to cover minimally invasive sacroiliac joint fusion exclusively when performed with iFuse and choose to reimburse for procedures performed with competitive products, our market share could decline, adversely affecting our revenues.

As of July 31, 2018, 23 of the largest 66 U.S. private payors that we track and target have issued positive coverage policies covering the patented triangular design of our iFuse implants and excluding coverage of other products that are intended to fuse the sacroiliac joint because of the clinical evidence supporting the use of iFuse and the lack of clinical evidence supporting the use of other products. Additionally, in June 2018, the public hospital system in France announced it will initiate coverage for iFuse exclusively beginning September 1, 2018. We believe that payors have adopted these exclusive coverage decisions due to the strength of our clinical evidence and in part due to recommendations of specialty benefit managers and healthcare technology assessment organizations. In the first six months of 2018, AIM Specialty Health, Blue Cross Blue Shield Association Evidence Street, and eviCore Healthcare published positive coverage recommendations to their constituents and payor customers, recommending that iFuse be covered exclusively. Clinical trials of the type and size necessary to offer evidence of the safety and efficacy of competing products could be performed and could show that other products for sacroiliac joint fusion are as effective as, or more effective than, iFuse. Payors could also abandon their decisions to cover iFuse exclusively for other reasons.

We may not be able to convince physicians that iFuse is an attractive alternative to our competitors' products and that our procedure is an attractive alternative to existing surgical and non-surgical treatments of the sacroiliac joint.

Surgeons play the primary role in determining the course of treatment in consultation with their patients and, ultimately, the product that will be used to treat a patient. In order for us to sell our iFuse solution successfully, we must convince surgeons through education and training that treatment with iFuse is beneficial, safe, and cost-effective for patients as compared to our competitors' products. If we are not successful in convincing surgeons of the merits of iFuse, they may not use our product, and we will be unable to increase our sales and achieve or grow profitability.

Historically, most spine surgeons did not include sacroiliac joint pain in their diagnostic work-up because they did not have an adequate surgical procedure to perform for patients diagnosed with the condition. As a result, some patients with lower back pain resulting from sacroiliac joint dysfunction are misdiagnosed. We believe that educating surgeons and other healthcare professionals about the clinical merits and patient benefits of iFuse is an important element of our growth. If we fail to effectively educate surgeons and other medical professionals, they may not include a sacroiliac joint evaluation as part of their diagnosis and, as a result, those patients may continue to receive unnecessary or only non-surgical treatment.

Surgeons may also hesitate to change their medical treatment practices for other reasons, including the following:

- lack of experience with minimally invasive procedures;
- perceived liability risks generally associated with the use of new products and procedures;
- costs associated with the purchase of new products; and
- time commitment that may be required for training.

Furthermore, we believe surgeons will not widely use iFuse unless they determine, based on experience, clinical data, and published peer-reviewed publications, that surgical intervention provides benefits or is an attractive alternative to non-surgical treatments of sacroiliac joint dysfunction. In addition, we believe support of our products relies heavily on long-term data showing the benefits of using our products. If we are unable to provide that data, surgeons may not use our products. In such circumstances, we may not achieve expected sales and may be unable to achieve profitability.

Surgeons and payors may not find our clinical evidence to be compelling, which could limit our sales and revenue, and on-going and future research may prove our products to be less safe and effective than initially anticipated.

The products we currently market in the United States have either received premarket clearance under Section 510(k) of the U.S. Federal Food, Drug, and Cosmetic Act, or FDCA, or are exempt from premarket review. Those marketed in the European Union, or EU, have been the subject of a CE Certificate of Conformity. The 510(k) clearance process of the U.S. Food and Drug Administration, or FDA, requires us to document that our product is "substantially equivalent" to another 510(k)-cleared products. The 510(k) process is shorter and typically requires the submission of less supporting documentation than other FDA approval processes, such as a premarket approval, or PMA, and does not usually require pre-clinical or clinical studies. Additionally, to date, we have not been required to complete clinical studies in connection with the sale of our products outside the United States. As a result, while there are a number of published studies relating to iFuse and minimally invasive sacroiliac joint surgery that support the safety and effectiveness of our products and the benefits they offer, our clinical studies may lack the size and scope of randomized controlled clinical trials required to support approval of a PMA. For these reasons, surgeons may be slow to adopt our products, third-party payors may be slow to provide coverage, and we may be subject to greater regulatory and product liability risks. Further, future patient studies or clinical experience may indicate that treatment with our products does not improve patient outcomes. Such results would slow the adoption of our products by surgeons, significantly reduce our ability to achieve expected sales, and could prevent us from achieving profitability. Moreover, if future results and experience indicate that our products cause unexpected or serious complications or other unforeseen negative effects, we could be subject to mandatory product recalls, suspension, or withdrawal of FDA clearance, and suspension, variation, or withdrawal of our CE Certificates of Conformity, significant legal liability or harm to our business reputation, which could have a material adverse effect on our results or operations and financial condition. Similar risks apply to product approvals and registrations in other countries outside the United States and the EU as well.

Pricing pressure from our competitors, changes in third-party coverage and reimbursement, healthcare provider consolidation, payor consolidation and the proliferation of "physician-owned distributorships" may impact our ability to sell our product at prices necessary to support our current business strategies.

If competitive forces drive down the prices we are able to charge for our product, our profit margins will shrink, which will adversely affect our ability to invest in and grow our business. The sacroiliac joint fusion market has attracted numerous new companies and technologies. As a result of this increased competition, we believe there will be continuing increased pricing pressure, resulting in lower gross margins, with respect to our products.

Even to the extent our product and procedures using our product are currently covered and reimbursed by third-party private and public payors, adverse changes in coverage and reimbursement policies that affect our products, discounts, and number of implants used may also drive our prices down and harm our ability to market and sell our products.

We are unable to predict what changes will be made to the reimbursement methodologies used by third-party payors. We cannot be certain that under current and future payment systems, in which healthcare providers may be reimbursed a set amount based on the type of procedure performed, such as those utilized by Medicare and in many privately managed care systems, the cost of our products will be justified and incorporated into the overall cost of the procedure. In addition, to the extent there is a shift from inpatient setting to outpatient settings, we may experience pricing pressure and a reduction in the number of iFuse procedures performed.

Consolidation in the healthcare industry, including both third-party payors and healthcare providers, could lead to demands for price concessions or to the exclusion of some suppliers from certain of our markets, which could have an adverse effect on our business, results of operations, or financial condition. Because healthcare

costs have risen significantly over the past several years, numerous initiatives and reforms initiated by legislators, regulators, and third-party payors to curb these costs have resulted in a consolidation trend in the healthcare industry to aggregate purchasing power. As the healthcare industry consolidates, competition to provide products and services to industry participants has become and will continue to become more intense. This in turn has resulted and will likely continue to result in greater pricing pressures and the exclusion of certain suppliers from important market segments as group purchasing organizations, independent delivery networks, and large single accounts continue to use their market power to consolidate purchasing decisions for hospitals. We expect that market demand, government regulation, third-party coverage, and reimbursement policies and societal pressures will continue to change the worldwide healthcare industry, resulting in further business consolidations and alliances among our customers, which may reduce competition, exert further downward pressure on the prices of our products, and adversely impact our business, results of operations, or financial condition. As we continue to expand into international markets, we will face similar risks relating to adverse changes in coverage and reimbursement procedures and policies in those markets.

Physician-owned distributorships, or PODs, are medical device distributors that are owned, directly or indirectly, by physicians. These physicians profit from selling or arranging the sale of medical devices for use in procedures they perform on their own patients at hospitals that purchase the devices from the POD. We currently do not engage with PODs. The proliferation of PODs could result in increased pricing pressure on our products or harm our ability to sell our products to physicians who own or are affiliated with those distributorships.

We operate in a very competitive business environment and if we are unable to compete successfully against our existing or potential competitors, our sales and operating results may be negatively affected and we may not grow.

Our currently marketed products are, and any future products we commercialize will likely be, subject to intense competition. The number of competitors that we are aware of marketing sacroiliac joint fusion products in the United States has grown from zero to 18 since 2008. Many of our current and potential competitors are major medical device companies that have substantially greater financial, technical, and marketing resources than we do, and they may succeed in developing products that would render our products obsolete or noncompetitive. In addition, many of these competitors have significantly longer operating history and more established reputations than we do. Our field is intensely competitive, subject to rapid change and highly sensitive to the introduction of new products or other market activities of industry participants. Our ability to compete successfully will depend on our ability to develop proprietary products that reach the market in a timely manner, receive adequate coverage and reimbursement from third-party payors, and are safer, less invasive, and more effective than alternatives available for similar purposes as demonstrated in peer-reviewed clinical publications. Because of the size of the potential market, we anticipate that other companies will dedicate significant resources to developing competing products.

In the United States, we believe that our primary competitors currently are Globus Medical, Inc., Medtronic plc, XTant Medical Holdings, Inc., and RTI Surgical, Inc. Our primary competitors in Europe are Globus Medical, SIGNUS Medizintechnik GmbH, and XTant Medical Holdings. At any time, these or other industry participants may develop alternative treatments, products or procedures for the treatment of the sacroiliac joint that compete directly or indirectly with our products. They may also develop and patent processes or products earlier than we can or obtain domestic and international regulatory clearances or approvals and CE Certificates of Conformity for competing products in the European Economic Area, or EEA, more rapidly than we can, which could impair our ability to develop and commercialize similar processes or products. If alternative treatments are, or are perceived to be, superior to our products, sales of our products and our results of operations could be negatively affected.

Some of our larger competitors are either publicly traded or divisions or subsidiaries of publicly traded companies. These competitors may enjoy several competitive advantages over us, including:

- greater financial, human, and other resources for product research and development, sales and marketing, and legal matters;
- significantly greater name recognition;
- established relationships with surgeons, hospitals, and other healthcare providers;
- large and established sales and marketing and distribution networks;
- greater experience in obtaining and maintaining domestic and international regulatory clearances or approvals, or CE Certificates of Conformity for products and product enhancements;
- more expansive portfolios of intellectual property rights; and
- greater ability to cross-sell their products or to incentivize hospitals or surgeons to use their products.

New participants have increasingly entered the medical device industry. Many of these new competitors specialize in a specific product or focus on a particular market segment, making it more difficult for us to increase our overall market position. The frequent introduction by competitors of products that are or claim to be superior to our products or that are alternatives to our existing or planned products may make it difficult to differentiate the benefits of our products over competing products. In addition, the entry of multiple new products and competitors may lead some of our competitors to employ pricing strategies that could adversely affect the pricing of our products and pricing in the market generally.

As a result, without the timely introduction of new products and enhancements, our products may become obsolete over time. If we are unable to develop innovative new products, maintain competitive pricing, and offer products that surgeons and other physicians perceive to be as reliable as those of our competitors, our sales or margins could decrease, thereby harming our business.

We currently manufacture and sell products used in a single procedure, which could negatively affect our operations and financial condition.

We do not sell any product other than iFuse and related tools and instruments. Therefore, we are solely dependent on widespread market adoption of iFuse and we will continue to be dependent on the success of this single product for the foreseeable future. There can be no assurance that iFuse will gain a substantial degree of market acceptance among surgeons, patients or healthcare providers. Our failure to successfully increase sales of iFuse or any other event impeding our ability to sell iFuse, would result in a material adverse effect on our results of operations, financial condition and continuing operations.

If we are unable to maintain and expand our network of direct sales representatives and third-party distributors, we may not be able to generate anticipated sales.

As of June 30, 2018, our U.S. sales force consisted of 45 sales representatives directly employed by us and 30 third-party distributors. As of June 30, 2018, our international sales force consisted of 18 sales representatives and 27 exclusive third-party distributors, which together have had sales in 33 countries through June 30, 2018. Our operating results are directly dependent upon the sales and marketing efforts of both our direct sales force and of our third-party distributors.

As we launch new products and increase our marketing efforts with respect to existing products, we will need to expand the reach of our marketing and sales networks. Our future success will depend largely on our ability to continue to hire, train, retain and motivate skilled direct sales representatives and third-party distributors with significant technical knowledge in various areas, such as spine health and treatment. New hires

require training and take time to achieve full productivity. If we fail to train new hires adequately, or if we experience high turnover in our sales force in the future, we cannot be certain that new hires will become as productive as may be necessary to maintain or increase our sales. Our intention is for our direct sales representatives and third-party distributors to develop long-lasting relationships with the surgeons they serve. If our direct sales representatives or third-party distributors fail to adequately promote, market and sell our products or decide to leave or cease to do business with us, our sales could significantly decrease.

We face significant challenges and risks in managing our geographically dispersed distribution network and retaining the individuals who make up that network. Some of our international third-party distributors account for a significant portion of our international sales volume, and if any such third-party distributor were to cease to distribute our products, our sales could be adversely affected. In such a situation, we may need to seek alternative third-party distributors or increase our reliance on our direct sales representatives, which may not prevent our sales from being adversely affected. If a direct sales representative or third-party distributor were to depart and be retained by one of our competitors, we may be unable to prevent them from helping competitors solicit business from our existing customers, which could further adversely affect our sales. Because of the intense competition for their services, we may be unable to recruit or retain additional qualified third-party distributors or to hire additional direct sales representatives to work with us. Furthermore, we may not be able to enter into agreements with them on favorable or commercially reasonable terms, if at all. Failure to hire or retain qualified direct sales representatives or third-party distributors would prevent us from expanding our business and generating sales.

In addition, distribution arrangements are complex and time consuming to negotiate and document, especially outside the United States. We may not be able to negotiate distribution arrangements on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of our products, delay their potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our products or bring them to market and generate revenue.

If we are unable to expand our sales and marketing capabilities domestically and internationally, we may not be able to effectively commercialize our products, which would adversely affect our business, results of operations, and financial condition.

We have a limited operating history and may face difficulties encountered by early stage companies in new and rapidly evolving markets.

We were formed in 2008. Accordingly, we have a limited operating history upon which to base an evaluation of our business and prospects. In assessing our prospects, you must consider the risks and difficulties frequently encountered by early stage companies in new and rapidly evolving markets, particularly companies engaged in the development and sales of medical devices. These risks include our inability to:

- increase coverage by third-party, private, and government payors;
- establish and increase awareness of our brand and strengthen customer loyalty;
- obtain domestic and international regulatory clearances or approvals, and CE Certificates of Conformity;
- conformity to commercialize new products and enhance our existing products;
- manage rapidly changing and expanding operations;
- grow our direct sales force and increase the number of our third-party distributors to expand sales of our products in the United States and in targeted international markets;

- implement and successfully execute our business and marketing strategy;
- respond effectively to competitive pressures and developments;
- continue to develop and enhance our products and product candidates;
- expand our presence and commence operations in international markets;
- perform clinical research and trials on our existing products and current and future product candidates; and
- attract and retain qualified personnel.

We can also be negatively affected by general economic conditions. Because of our limited operating history, we may not have insight into trends that could emerge and negatively affect our business. As a result of these or other risks, our business strategy might not be successful.

Our sales volumes and our operating results may fluctuate over the course of the year.

We have experienced and continue to experience meaningful variability in our sales and gross profit from quarter to quarter, as well as within each quarter. Our sales and results of operations will be affected by numerous factors, including, among other things:

- payor coverage and reimbursement;
- the number of products sold in the quarter and our ability to drive increased sales of our products;
- our ability to establish and maintain an effective and dedicated sales force;
- pricing pressure applicable to our products, including adverse third-party coverage and reimbursement outcomes;
- results of clinical research and trials on our existing products and products in development;
- the mix of our products sold because profit margins differ amongst our products;
- timing of new product offerings, acquisitions, licenses or other significant events by us or our competitors;
- the ability of our suppliers to timely provide us with an adequate supply of materials and components;
- the evolving product offerings of our competitors;
- the demand for, and pricing of, our products and the products of our competitors;
- factors that may affect the sale of our products, including seasonality and budgets of our customers;
- domestic and international regulatory clearances or approvals, or CE Certificates of Conformity, and legislative changes affecting the products we may offer or those of our competitors;
- interruption in the manufacturing or distribution of our products;
- the effect of competing technological, industry and market developments;
- our ability to expand the geographic reach of our sales and marketing efforts;
- the costs of maintaining adequate insurance coverage, including product liability insurance;
- the availability and cost of components and materials;
- the number of selling days in the quarter;
- fluctuation in foreign currency exchange rates; and
- impairment and other special charges.

Some of the products we may seek to develop and introduce in the future will require FDA clearance or approval before commercialization in the United States, and commercialization of such products outside of the United States would likely require additional regulatory approvals, or Certificates of Conformity and import licenses. As a result, it will be difficult for us to forecast demand for these products with any degree of certainty. In addition, we will be increasing our operating expenses as we expand our commercial capabilities. Accordingly, we may experience significant, unanticipated quarterly losses. If our quarterly or annual operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly or annual fluctuations in our operating results may, in turn, cause the price of our common stock to fluctuate substantially. Quarterly comparisons of our financial results may not always be meaningful and should not be relied upon as an indication of our future performance.

If our business strategy proves to be flawed, or if we do not successfully implement our business strategy, our business and results of operations will be adversely affected.

Our business strategy was based on assumptions about the market that might prove wrong. We believe that various demographics and industry-specific trends will help drive growth in the market and our business, but these demographics and trends have been and will continue to be uncertain. Actual demand for our products could differ materially from projected demand if our assumptions regarding these factors prove to be incorrect or do not materialize, or if alternative treatments to those offered by our products gain widespread acceptance.

To implement our business strategy we need to, among other things, develop and introduce new products, find new applications for and improve our existing products, obtain new domestic and international regulatory clearances or approvals and CE Certificates of Conformity and domestic and international regulatory clearance or approval for new products and applications, and educate surgeons and payors about the clinical benefits and cost effectiveness of our products. We may not be able to successfully implement our business strategy. Also, our strategy of focusing exclusively on the sacroiliac joint market may limit our ability to grow. In addition, in order to increase our sales, we will need to commercialize additional products and expand our direct and third-party distributor sales forces in existing and new regions, all of which could result in our becoming subject to additional or different foreign and domestic regulatory requirements, with which we may not be able to comply. Moreover, we may decide to alter or discontinue aspects of our business strategy and may adopt different strategies due to business or competitive factors not currently foreseen, such as new medical technologies that would make our products obsolete. Any failure to implement our business strategy may adversely affect our business, results of operations, and financial condition.

Our business could suffer if we lose the services of key members of our senior management, key advisors or personnel.

We are dependent upon the continued services of key members of our senior management and a limited number of key advisors and personnel. In particular, we are highly dependent on the skills and leadership of our President, Chief Executive Officer and Chairman, Jeffrey W. Dunn. The loss of members of our senior management team, key advisors or personnel, or our inability to attract or retain other qualified personnel or advisors, could have a material adverse effect on our business, results of operations, and financial condition. We do not maintain “key person” insurance for any of our executives or employees. In addition, several of the members of our executive management team are not subject to non-competition agreements that restrict their ability to compete with us. Accordingly, the adverse effect resulting from the loss of certain executives could be compounded by our inability to prevent them from competing with us.

Although it will be subject to lock-up agreements and other restrictions on trading, a portion of the equity of our management team will not contain other contractual transfer restrictions at the time of this offering and may become tradable after the expiration of the 180-day lock-up agreement with the underwriters. This liquidity may represent material wealth to such individuals and impact retention and focus of existing key members of management.

Our products may have undesirable side effects which may require them to be taken off the market, require them to include safety warnings or otherwise limit their sales.

Unforeseen adverse events related to our products could arise either during clinical development or, if cleared, approved, or subject to CE Certificate of Conformity, after the product has been marketed. In clinical research, the most common adverse event related to our implant was leg pain resulting from misplacement. The most common adverse event for our implant procedure has been minor wound infections. Additional adverse effects from iFuse or any of our other products could arise either during clinical development or, if approved, cleared, or subject to CE Certificate of Conformity, after the product has been marketed.

If we or others later identify adverse events caused by our products:

- sales of the product may decrease significantly and we may not achieve the anticipated market share;
- regulatory authorities or our Notified Body may require changes to the labeling of our product. This may include the addition of labeling statements, specific warnings, and contraindications and issuing field alerts to physicians and patients;
- we may be required to change instructions regarding the way the product is implanted or conduct additional clinical trials;
- we may be subject to limitations on how we may promote the product;
- regulatory authorities may require us to take our approved product off the market (temporarily or permanently) or to conduct other field safety corrective actions;
- we may be required to modify our product;
- we may be subject to litigation fines or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product or could substantially increase commercialization costs and expenses, which in turn could delay or prevent us from generating significant revenue from the sale of our products.

Various factors outside our direct control may adversely affect manufacturing, sterilization, and distribution of our products.

The manufacture, sterilization, and distribution of our products is challenging. Changes that our suppliers may make outside the purview of our direct control can have an impact on our processes, quality of our products, and the successful delivery of products to our customers. Mistakes and mishandling are not uncommon and can affect supply and delivery. Some of these risks include:

- failure to complete sterilization on time or in compliance with the required regulatory standards;
- transportation and import and export risk;
- delays in analytical results or failure of analytical techniques that we will depend on for quality control and release of products;
- natural disasters, labor disputes, financial distress, raw material availability, issues with facilities and equipment, or other forms of disruption to business operations affecting our manufacturers or suppliers; and
- latent defects that may become apparent after products have been released and that may result in a recall of such products.

If any of these risks were to materialize, our ability to provide our products to customers on a timely basis would be adversely impacted.

We are dependent on a limited number of third-party suppliers, some of them single-source and some of them in single locations, for most of our products and components, and the loss of any of these suppliers, or their inability to provide us with an adequate supply of materials in a timely and cost-effective manner, could materially adversely affect our business.

We rely on third-party suppliers to supply substantially all of our products. For us to be successful, our suppliers must be able to provide us with products and components in substantial quantities, in compliance with regulatory requirements, in accordance with agreed upon specifications, at acceptable prices, and on a timely basis. We do not have long-term supply contracts for some of our suppliers, and in some cases, even where we do have agreements in place, we purchase important parts of the iFuse Implant System from a single supplier. Therefore, we cannot assure you that we will be able to obtain sufficient quantities of product in the future.

In addition, our anticipated growth could strain the ability of our suppliers to deliver an increasingly large supply of products, materials, and components. Suppliers often experience difficulties in scaling up production, including financial issues, or problems with production yields and quality control and assurance. For example, from time to time, we have experienced certain delays and may experience delays from our suppliers in the future.

We generally use a small number of suppliers for our instruments and rely on one supplier, Orchid Bio-Coat, a division of Orchid Orthopedic Solutions LLC, for our iFuse implants and one supplier, rms Company, for our second-generation iFuse-3D implants. Our dependence on such a limited number of suppliers exposes us to risks, including, among other things:

- third-party contract manufacturers or suppliers may fail to comply with regulatory requirements or make errors in manufacturing that could negatively affect the safety or effectiveness of our products or cause delays in shipments of our products;
- we or our third-party manufacturers and suppliers may not be able to respond to unanticipated changes in customer orders, and if orders do not match forecasts, we or our suppliers may have excess or inadequate inventory of materials and components;
- we or our third-party manufacturers and suppliers may be subject to price fluctuations due to a lack of long-term supply arrangements for key components;
- we or our third-party manufacturers and suppliers may lose access to critical services and components, resulting in an interruption in the manufacture, assembly and shipment of our systems;
- we may experience delays in delivery by our third-party manufacturers and suppliers due to changes in demand from us or their other customers;
- fluctuations in demand for products that our third-party manufacturers and suppliers manufacture for others may affect their ability or willingness to deliver components to us in a timely manner;
- our third-party manufacturers and suppliers may wish to discontinue supplying components or services to us for risk management reasons;
- we may not be able to find new or alternative components or reconfigure our system and manufacturing processes in a timely manner if the necessary components become unavailable; and
- our third-party manufacturers and suppliers may encounter financial hardships unrelated to our demand, which could inhibit their ability to fulfill our orders and meet our requirements.

If any one or more of these risks materialize, it could significantly increase our costs and impact our ability to meet demand for our products. If we are unable to satisfy commercial demand for our system in a timely manner, our ability to generate revenue would be impaired, market acceptance of our products could be adversely affected, and customers may instead purchase or use our competitors' products. Additionally, we could be forced to seek alternative sources of supply.

In addition, most of our supply and manufacturing agreements do not have minimum manufacturing or purchase obligations. As such, we have no obligation to buy any given quantity of products, and our suppliers have no obligation to sell us or to manufacture for us any given quantity of components or products. As a result, our ability to purchase adequate quantities of components or our products may be limited and we may not be able to convince suppliers to make components and products available to us. Our suppliers may also encounter problems that limit their ability to supply components or manufacture products for us, including financial difficulties, damage to their manufacturing equipment or facilities, or product discontinuations. As a result, there is a risk that certain components could be discontinued and no longer available to us. We may be required to make significant "last time" purchases of component inventory that is being discontinued by the supplier to ensure supply continuity. If we fail to obtain sufficient quantities of high quality components to meet demand for our products in a timely manner or on terms acceptable to us, we would have to seek alternative sources of supply. Securing a replacement third-party manufacturer or supplier could be difficult. The introduction of new or alternative manufacturers or suppliers also may require design changes to our iFuse that are subject to domestic and international regulatory clearances or approvals and the review of our Notified Body.

Because of the nature of our internal quality control requirements, regulatory requirements, and the custom and proprietary nature of the parts, we may not be able to quickly engage additional or replacement suppliers for many of our critical components. We may also be required to assess any potential new manufacturer's compliance with all applicable regulations and guidelines, which could further impede our ability to manufacture our products in a timely manner. As a result, we could incur increased production costs, experience delays in deliveries of our products, suffer damage to our reputation, and experience an adverse effect on our business and financial results. Failure of any of our third-party suppliers to meet our product demand level would limit our ability to meet our sales commitments to our customers and could have a material adverse effect on our business.

We may also have difficulty obtaining similar components from other suppliers that are acceptable to the FDA our Notified Body the competent authorities or countries of the countries of the EEA, or other foreign regulatory authorities, and the failure of our suppliers to comply with strictly enforced regulatory requirements could expose us to delays in obtaining clearances or approvals, regulatory action including warning letters, product recalls, termination of distribution, product seizures, civil, administrative, or criminal penalties and the suspension, variation, or withdrawal of our CE Certificates of Conformity. We could incur delays while we locate and engage qualified alternative suppliers, and we may be unable to engage alternative suppliers on favorable terms or at all. Any such disruption or increased expenses could harm our commercialization efforts and adversely affect our ability to generate sales.

In addition, each of our third-party suppliers operates at a facility in a single location and substantially all of our inventory of component supplies and finished goods is held at these locations. We, and our suppliers, take precautions to safeguard facilities, including acquiring insurance, employing back-up generators, adopting health and safety protocols, and utilizing off-site storage of computer data. However, vandalism, terrorism, or a natural or other disaster, such as an earthquake, fire, or flood, could damage or destroy equipment or our inventory of component supplies or finished products, cause substantial delays in our operations, result in the loss of key information, and cause us to incur additional expenses. Our insurance may not cover our losses in any particular case. In addition, regardless of the level of insurance coverage, damage to our or our suppliers' facilities could harm our business, financial condition, and operating results.

As our sales grow, we may encounter problems or delays in the assembly of our products or fail to meet certain regulatory requirements which could result in an adverse effect on our business and financial results.

To become profitable, we must assemble our products in adequate quantities in compliance with regulatory requirements and at an acceptable cost. Increasing our capacity to assemble and test our products will require us to improve internal efficiencies. We may encounter a number of difficulties in increasing our assembly and testing capacity, including:

- managing production yields;

- maintaining quality control and assurance;
- providing component and service availability;
- maintaining adequate control policies and procedures;
- hiring and retaining qualified personnel; and
- complying with state, federal, and foreign regulations.

If we are unable to satisfy commercial demand for our iFuse solution due to our inability to assemble and test, our ability to generate revenue would be impaired, market acceptance of our products could be adversely affected and customers may instead purchase or use our competitors' products.

If we do not enhance our product offerings through our research and development efforts, we may be unable to compete effectively.

In order to increase our market share in the sacroiliac joint fusion market, we must enhance and broaden our product offerings in response to changing customer demands and competitive pressures and technologies. We might not be able to successfully develop, obtain domestic and international regulatory clearances or approvals, or CE Certificates of Conformity for, or market new products, and our future products might not be accepted by the surgeons or the third-party payors who reimburse for many of the procedures performed with our products. The success of any new product offering or enhancement to an existing product will depend on numerous factors, including our ability to:

- properly identify and anticipate surgeon and patient needs;
- develop and introduce new products or product enhancements in a timely manner;
- adequately protect our intellectual property and avoid infringing upon the intellectual property rights of third parties;
- demonstrate the safety and effectiveness of new products; and
- obtain the necessary domestic and international regulatory clearances or approvals and CE Certificates of Conformity for new products or product enhancements.

If we do not develop and obtain domestic and international regulatory clearances or approvals and CE Certificates of Conformity for new products or product enhancements in time to meet market demand, or if there is insufficient demand for these products or enhancements, our results of operations will suffer. Our research and development efforts may require a substantial investment of time and resources before we are adequately able to determine the commercial viability of a new product, technology, material, or other innovation. In addition, even if we are able to successfully develop enhancements or new generations of our products, these enhancements or new generations of products may not produce sales in excess of the costs of development and they may be quickly rendered obsolete by changing customer preferences or the introduction by our competitors of products embodying new technologies or features.

We are required to maintain adequate levels of inventory, the failure of which could consume our resources and reduce our cash flows.

As a result of the need to maintain adequate levels of inventory, we are subject to the risk of inventory obsolescence. Many of our products come in sets, which feature components in a variety of sizes so that the implant or device may be customized to the patient's needs. In order to market our products effectively, we often maintain and provide surgeons and hospitals with back-up products and products of different sizes. For each surgery, fewer than all of the components of the set are used, and therefore certain portions of the set may become obsolete before they can be used. In the event that a substantial portion of our inventory becomes obsolete, it could have a material adverse effect on our earnings and cash flows due to the resulting costs associated with the inventory impairment charges and costs required to replace such inventory.

The size and future growth in the market for iFuse has not been established with precision and may be smaller than we estimate, possibly materially. In addition, our estimates of cost savings to the economy and healthcare system as a result of the iFuse procedure are based on our internal estimates and market research and could also be smaller than we estimate, possibly materially. If our estimates and projections overestimate the size of this market or cost savings, our sales growth may be adversely affected.

We are not aware of an independent third-party study that reliably reports the potential market size for iFuse or cost savings as a result of the iFuse procedure. Therefore, our estimates of the size and future growth in the market for our iFuse products, including cost savings to the economy overall, including patients and employers, and to the healthcare system and the number of people currently suffering from lower back pain who may benefit from and be amenable to our iFuse procedure, is based on a number of internal and third-party studies, surveys, reports, and estimates. While we believe these factors have historically provided and may continue to provide us with effective tools in estimating the total market for our iFuse products and procedures and health cost savings, these estimates may not be correct and the conditions supporting our estimates may change at any time, thereby reducing the predictive accuracy of these underlying factors. For example, the surveys we have conducted are based on a small number of respondents and are not statistically significant and may have other limitations. The actual incidence of lower back pain, and the actual demand for our products or competitive products, could differ materially from our projections if our assumptions and estimates are incorrect. As a result, our estimates of the size and future growth in the market for our iFuse products may prove to be incorrect. In addition, actual health cost savings to the healthcare system as a result of the iFuse procedure may materially differ from those presented in this prospectus. If the actual number of people with lower back pain who would benefit from our iFuse products and the size and future growth in the market for iFuse products and related costs savings to the healthcare system is smaller than we have estimated, it may impair our projected sales growth and have an adverse impact on our business.

Our results of operations could suffer if we are unable to manage our planned international expansion effectively.

Expansion into international markets is an element of our business strategy and involves risk. The sale and shipment of our products across international borders, as well as the purchase of components and products from international sources, subject us to extensive U.S. and foreign governmental trade, import, and export and customs regulations and laws. Compliance with these regulations and laws is costly and exposes us to penalties for non-compliance. Other laws and regulations that can significantly affect us include various anti-bribery laws, including the U.S. Foreign Corrupt Practices Act, or FCPA, and the United Kingdom Bribery Act, or UKBA, anti-boycott laws, anti-money laundering laws, and regulations relating to economic sanctions imposed by the United States, including the Office of Foreign Asset Control of the U.S. Treasury. Any failure to comply with applicable legal and regulatory obligations in the United States or abroad could adversely affect us in a variety of ways that include, but are not limited to, significant criminal, civil and administrative penalties, including imprisonment of individuals, fines and penalties, denial of export privileges, seizure of shipments and restrictions on certain business activities. Also, the failure to comply with applicable legal and regulatory obligations could result in the disruption of our distribution and sales activities.

In addition, some of the countries in which we sell or plan to sell our products are, to some degree, subject to various risks, including:

- exposure to different legal and regulatory standards;
- lack of stringent protection of intellectual property;
- obstacles to obtaining domestic and foreign export, import, and other governmental approvals, permits, and licenses and compliance with foreign laws;
- potentially adverse tax consequences and the complexities of foreign value-added tax systems;
- adverse changes in tariffs and trade restrictions;

- limitations on the repatriation of earnings;
- difficulties in staffing and managing foreign operations;
- transportation delays and difficulties of managing international distribution channels;
- longer collection periods and difficulties in collecting receivables from foreign entities;
- increased financing costs;
- currency risks; and
- political, social, and economic instability and increased security concerns.

These risks may limit or disrupt our expansion, restrict the movement of funds or result in the deprivation of contractual rights or the taking of property by nationalization or expropriation without fair compensation.

Our goal of a successful international expansion depends, in part, on our ability to develop and implement policies and strategies that are effective in anticipating and managing these and other risks in the countries in which we plan to do business. Failure to manage these and other risks may have a material adverse effect on our operations in any particular country and on our business as a whole.

In the future our products may become obsolete, which would negatively affect operations and financial condition.

The medical device industry is characterized by rapid and significant change. There can be no assurance that other companies will not succeed in developing or marketing devices, and products that are more effective than our iFuse system or that would render the iFuse system obsolete or noncompetitive. Additionally, new surgical procedures, medications and other therapies could be developed that replace or reduce the importance of our product. Accordingly, our success will depend in part on our ability to respond quickly to medical and changes through the development and introduction of new products. Product development involves a high degree of risk and there can be no assurance that our new product development efforts will result in any commercially successful products.

If we experience significant disruptions in our information technology systems, our business, results of operations, and financial condition could be adversely affected.

The efficient operation of our business depends on our information technology systems. We rely on our information technology systems to effectively manage:

- sales and marketing, accounting, and financial functions;
- inventory management;
- engineering and product development tasks; and
- our research and development data.

Our information technology systems are vulnerable to damage or interruption from:

- earthquakes, fires, floods, and other natural disasters;
- terrorist attacks and attacks by computer viruses or hackers;
- power losses; and
- computer systems, or Internet, telecommunications, or data network failures.

The failure of our information technology systems to perform as we anticipate or our failure to effectively implement new systems could disrupt our entire operation and could result in decreased sales, increased overhead costs, excess inventory and product shortages, and legal liability issues, all of which could have a material adverse effect on our reputation, business, results of operations, and financial condition.

In addition, we accept payments for many of our sales through credit card transactions, which are handled through a third-party payment processor. As a result, we are subject to a number of risks related to credit card payments. As a result of these transactions, we pay interchange and other fees, which may increase over time and could require us to either increase the prices we charge for our products or experience an increase in our costs and expenses. In addition, as part of the payment processing process, we transmit our customers' credit card information to our third-party payment processor. We may in the future become subject to lawsuits or other proceedings for purportedly fraudulent transactions arising out of the actual or alleged theft of our customers' credit card information if the security of our third-party credit card payment processor is breached. We and our third-party credit card payment processor are also subject to payment card association operating rules, certification requirements and rules governing electronic funds transfers, which could change or be reinterpreted to make it difficult or impossible for us to comply. If we or our third-party credit card payment processor fail to comply with these rules or requirements, we may be subject to fines and higher transaction fees and lose our ability to accept credit card payments from our customers, and there may be an adverse impact on our business.

We may seek to grow our business through acquisitions of or investments in new or complementary businesses, products or technologies, and the failure to manage acquisitions or investments, or the failure to integrate them with our existing business, could have a material adverse effect on us.

From time to time, we expect to consider opportunities to acquire or make investments in other technologies, products, and businesses that may enhance our capabilities, complement our current products, or expand the breadth of our markets or customer base. Potential and completed acquisitions and strategic investments involve numerous risks, including:

- problems assimilating the purchased technologies, products, or business operations;
- issues maintaining uniform standards, procedures, controls, and policies;
- unanticipated costs and liabilities associated with acquisitions;
- diversion of management's attention from our core business;
- adverse effects on existing business relationships with suppliers and customers;
- risks associated with entering new markets in which we have limited or no experience;
- potential loss of key employees of acquired businesses; and
- increased legal and accounting compliance costs.

We have no current commitments with respect to any acquisition or investment. We do not know if we will be able to identify acquisitions we deem suitable, whether we will be able to successfully complete any such acquisitions on favorable terms or at all, or whether we will be able to successfully integrate any acquired business, product, or technology into our business or retain any key personnel, suppliers, or distributors. Our ability to successfully grow through acquisitions depends upon our ability to identify, negotiate, complete, and integrate suitable target businesses and to obtain any necessary financing. These efforts could be expensive and time consuming, and may disrupt our ongoing business and prevent management from focusing on our operations. If we are unable to successfully integrate any acquired businesses, products, or technologies effectively, our business, results of operations, and financial condition will be materially adversely affected.

We may enter into collaborations, in-licensing arrangements, joint ventures, strategic alliances, or partnerships with third-parties that may not result in the development of commercially viable products or the generation of significant future revenue.

In the ordinary course of our business, we may enter into collaborations, in-licensing arrangements, joint ventures, strategic alliances, partnerships, or other arrangements to develop products and to pursue new markets. We have not entered into any collaboration arrangements to date. Proposing, negotiating, and implementing collaborations, in-licensing arrangements, joint ventures, strategic alliances, or partnerships may be a lengthy and complex process. Other companies, including those with substantially greater financial, marketing, sales, technology, or other business resources, may compete with us for these opportunities or arrangements. We may not identify, secure, or complete any such transactions or arrangements in a timely manner, on a cost-effective basis, on acceptable terms or at all. We have limited institutional knowledge and experience with respect to these business development activities, and we may also not realize the anticipated benefits of any such transaction or arrangement. In particular, these collaborations may not result in the development of products that achieve commercial success or result in significant revenue and could be terminated prior to developing any products.

Additionally, we may not be in a position to exercise sole decision-making authority regarding the transaction or arrangement, which could create the potential risk of creating impasses on decisions, and our future collaborators may have economic or business interests or goals that are, or that may become, inconsistent with our business interests or goals. It is possible that conflicts may arise with our collaborators, such as conflicts concerning the achievement of performance milestones, or the interpretation of significant terms under any agreement, such as those related to financial obligations or the ownership or control of intellectual property developed during the collaboration. If any conflicts arise with any future collaborators, they may act in their self- interest, which may be adverse to our best interest, and they may breach their obligations to us. In addition, we may have limited control over the amount and timing of resources that any future collaborators devote to our or their future products.

Disputes between us and our collaborators may result in litigation or arbitration which would increase our expenses and divert the attention of our management. Further, these transactions and arrangements will be contractual in nature and will generally be terminable under the terms of the applicable agreements and, in such event, we may not continue to have rights to the products relating to such transaction or arrangement or may need to purchase such rights at a premium. If we enter into in-bound intellectual property license agreements, we may not be able to fully protect the licensed intellectual property rights or maintain those licenses. Future licensors could retain the right to prosecute and defend the intellectual property rights licensed to us, in which case we would depend on the ability of our licensors to obtain, maintain and enforce intellectual property protection for the licensed intellectual property. These licensors may determine not to pursue litigation against other companies or may pursue such litigation less aggressively than we would. Further, entering into such license agreements could impose various diligence, commercialization, royalty, or other obligations on us. Future licensors may allege that we have breached our license agreement with them, and accordingly seek to terminate our license, which could adversely affect our competitive business position and harm our business prospects.

Risks Related to Our Legal and Regulatory Environment

We, our suppliers, and our third-party manufacturers are subject to extensive governmental regulation both in the United States and abroad, and failure to comply with applicable requirements could cause our business to suffer.

The medical device industry is regulated extensively by governmental authorities, principally the FDA and corresponding state and foreign regulatory agencies. The FDA and other U.S. and foreign governmental agencies regulate, among other things, with respect to medical devices:

- design, development, and manufacturing;
- testing, labeling, content, and language of instructions for use and storage;

- clinical trials;
- product safety;
- marketing, sales, and distribution;
- premarket clearance and approval;
- conformity assessment procedures;
- record keeping procedures;
- advertising and promotion;
- compliance with good manufacturing practices requirements;
- recalls and field safety corrective actions;
- post-market surveillance, including reporting of deaths or serious injuries and malfunctions that, if they were to recur, could lead to death or serious injury;
- post-market approval studies; and
- product import and export.

The regulations to which we are subject are complex and have tended to become more stringent over time. Regulatory changes could result in restrictions on our ability to carry on or expand our operations, difficulties achieving new product clearances, higher than anticipated costs or lower than anticipated sales.

Before we can market or sell a new regulated product or make a significant modification to an existing product in the United States, with very limited exception, we must obtain either clearance under Section 510(k) of the FDCA for Class II devices or approval of a premarket approval, or PMA, application from the FDA for a Class III device. In the 510(k) clearance process, the FDA must determine that a proposed device is "substantially equivalent" to a device legally on the market, known as a "predicate" device, with respect to intended use, technology, and safety and effectiveness, in order to clear the proposed device for marketing. Clinical data is sometimes required to support substantial equivalence. The PMA pathway requires an applicant to demonstrate the safety and effectiveness of the device based, in part, on extensive data, including, but not limited to, technical, preclinical, clinical trial, manufacturing, and labeling data. The PMA process is typically required for devices that are deemed to pose the greatest risk, such as life-sustaining, life-supporting, or implantable devices. Products that are approved through a PMA application generally need FDA approval before they can be modified. Similarly, some modifications made to products cleared through a 510(k) may require a new 510(k). Both the 510(k) and PMA processes can be expensive and lengthy and require the payment of significant fees, unless exempt. The FDA's 510(k) clearance process usually takes from three to 12 months, but may last longer. The process of obtaining a PMA is much more costly and uncertain than the 510(k) clearance process and generally takes from one to three years, or even longer, from the time the application is submitted to the FDA until an approval is obtained. The process of obtaining domestic and international regulatory clearances or approvals to market a medical device can be costly and time consuming, and we may not be able to obtain these clearances or approvals on a timely basis, if at all.

In the United States, our currently commercialized products have either received premarket clearance under Section 510(k) of the FDCA or are exempt from premarket review. If the FDA requires us to go through a lengthier, more rigorous examination for future products or modifications to existing products than we had expected, our product introductions or modifications could be delayed or canceled, which could cause our sales to decline. In addition, the FDA may determine that future products will require the more costly, lengthy, and uncertain PMA process. Although we do not currently market any devices under PMA, the FDA may demand that we obtain a PMA prior to marketing certain of our future products. In addition, if the FDA disagrees with our determination that a product we currently market is subject to an exemption from premarket review, the FDA

may require us to submit a 510(k) or PMA in order to continue marketing the product. Further, even with respect to those future products where a PMA is not required, we cannot assure you that we will be able to obtain the 510(k) clearances with respect to those products.

The FDA can delay, limit or deny clearance or approval of a device for many reasons, including:

- we may not be able to demonstrate to the FDA's satisfaction that our products are safe and effective for their intended users;
- the data from our pre-clinical studies and clinical trials may be insufficient to support clearance or approval, where required; and
- the manufacturing process or facilities we use may not meet applicable requirements.

In addition, the FDA may change its clearance and approval policies, adopt additional regulations or revise existing regulations, or take other actions which may prevent or delay clearance or approval of our products under development or impact our ability to modify our currently approved or cleared products on a timely basis.

Any delay in, or failure to receive or maintain, clearance or approval for our products under development could prevent us from generating revenue from these products or achieving profitability.

In addition, even after we have obtained the proper regulatory clearance or approval to market a product, the FDA has the power to require us to conduct postmarketing studies. These studies can be very expensive and time consuming to conduct. Failure to comply with those studies in a timely manner could result in the revocation of the 510(k) clearance for a product that is subject to such a 522 Order and the recall or withdrawal of the product, which could prevent us from generating sales from that product in the United States.

In the EEA, our medical devices must comply with the Essential Requirements set forth in Annex I to the EU Medical Devices Directive (Council Directive 93/42/EEC), or Essential Requirements. Compliance with these requirements is a prerequisite to be able to affix the CE mark to our medical devices, without which they cannot be marketed or sold in the EEA. To demonstrate compliance with the Essential Requirements we must undergo a conformity assessment procedure, which varies according to the type of medical device and its classification. Except for low risk medical devices (Class I), where the manufacturer can issue an EC Declaration of Conformity based on a self-assessment of the conformity of its products with the Essential Requirements, a conformity assessment procedure requires the intervention of a third-party organization designated by the competent authorities of a EEA country to conduct conformity assessments, known as a Notified Body. The Notified Body would typically audit and examine the medical device's Technical File, the quality system for the manufacture, design and conduct a final inspection of our medical devices before issuing a CE Certificate of Conformity demonstrating compliance with the Essential Requirements or the QSR of the Medical Devices Directive.

Additionally, as part of the conformity assessment process, medical device manufacturers must carry out a clinical evaluation of their medical devices to verify that they comply with the relevant Essential Requirements covering safety and performance. A clinical evaluation includes an assessment of whether a medical device's performance is in accordance with its intended use and that the known and foreseeable risks linked to the use of the device under normal conditions are minimized and acceptable when weighed against the benefits of its intended purpose. The clinical evaluation conducted by the manufacturer must also address any clinical claims, the adequacy of the device labeling and information (particularly claims, contraindications, precautions/ warnings) and the suitability of related Instructions for Use. This assessment must be based on clinical data, which can be obtained from (i) clinical studies conducted on the devices being assessed; (ii) scientific literature from similar devices whose equivalence with the assessed device can be demonstrated; or (iii) both clinical studies and scientific literature. With respect to implantable devices, or devices classified as Class III in the EU, the manufacturer must conduct clinical studies to obtain the required clinical data, unless the relying on existing

clinical data from similar devices can be justified. As part of the conformity assessment procedure, depending on the type of devices, the Notified Body will review the manufacturer's clinical evaluation for the medical device. The conduct of clinical studies to obtain clinical data that might be required as part of the described clinical evaluation process can be expensive and time consuming.

The FDA and other regulatory authorities have broad enforcement powers. Regulatory enforcement or inquiries, or other increased scrutiny on us, could dissuade some surgeons from using our products and adversely affect our reputation and the perceived safety and effectiveness of our products.

Failure to comply with applicable regulations could jeopardize our ability to sell our products and result in enforcement actions such as:

- warning letters;
- fines;
- injunctions;
- civil penalties;
- termination of distribution;
- recalls or seizures of products;
- delays in the introduction of products into the market;
- total or partial suspension of production;
- facility closures;
- refusal of the FDA or our Notified Body or other regulator to grant future clearances or approvals or to issue CE Certificates of Conformity;
- withdrawals or suspensions of current clearances or approvals and CE Certificates of Conformity, resulting in prohibitions on sales of our products; and
- in the most serious cases, criminal penalties.

Adverse action by an applicable regulatory agency, our Notified Body or the FDA could result in inability to produce our products in a cost-effective and timely manner, or at all, decreased sales, higher prices, lower margins, additional unplanned costs or actions, damage to our reputation, and could have material adverse effect on our reputation, business, results of operations, and financial condition.

We and our sales representatives must comply with U.S. federal and state fraud and abuse laws, including those relating to physician kickbacks and false claims for reimbursement, as well as equivalent foreign laws.

Healthcare providers, distributors, physicians, and third-party payors play a primary role in the distribution, recommendation, ordering, and purchasing of any implant or other medical device for which we have or obtain marketing clearance or approval. Through our arrangements with customers and third-party payors, we are exposed to the risk that our employees, independent contractors, principal investigators, consultants, vendors, or third-party distributors may engage in fraudulent or other illegal activity. Misconduct by these parties could include, among other infractions or violations, intentional, reckless and/or negligent conduct or unauthorized activity that violates FDA regulations, manufacturing standards, federal and state healthcare fraud and abuse laws and regulations, laws that require the true, complete, and accurate reporting of financial information or data, other commercial or regulatory laws or requirements, and equivalent foreign rules. We have a compliance program, Code of Conduct, and associated policies and procedures, but it is not always possible to identify and deter misconduct by our employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from

governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations, and government authorities may conclude that our business practices do not comply with applicable fraud and abuse or other healthcare laws and regulations or guidance despite our good faith efforts to comply.

There are numerous U.S. federal and state laws pertaining to healthcare fraud and abuse, including anti-kickback and false claims laws. Our relationships and our distributors' relationships with surgeons, other healthcare professionals, and hospitals are subject to scrutiny under these laws.

Healthcare fraud and abuse laws and related regulations are complex, and even minor irregularities can potentially give rise to claims that a statute or prohibition has been violated. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, items or services for which payment may be made, in whole or in part, under federal healthcare programs, such as the Medicare and Medicaid programs;
- the federal False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, false or fraudulent claims for payment of government funds; knowingly making, using, or causing to be made or used, a false record or statement to get a false claim paid or to avoid, decrease, or conceal an obligation to pay money to the federal government. A claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act. There are also criminal penalties for making or presenting a false or fictitious or fraudulent claim to the federal government;
- the federal Health Insurance Portability and Accountability Act of 1996, which imposes criminal and civil liability for, among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program including private third-party payors, or knowingly and willfully falsifying, concealing, or covering up a material fact or making a materially false, fictitious, or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false, fictitious, or fraudulent statement or entry in connection with the delivery of or payment for healthcare benefits, items, or services;
- the federal Physician Payment Sunshine Act, which requires manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid, or the Children's Health Insurance Program to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments or other "transfers of value" made to physicians and teaching hospitals, and requires applicable manufacturers to report annually to CMS ownership and investment interests held by physicians and their immediate family members and payments or other "transfers of value" to such physician owners; and
- analogous state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws, which may apply to items or services reimbursed by any third-party payor, including commercial insurers; state laws that require device companies to comply with the industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state beneficiary inducement laws, and state laws that require device manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

If we or our employees are found to have violated any of the above laws we may be subjected to administrative, civil and criminal penalties, including imprisonment, exclusion from participation in federal healthcare programs, such as Medicare and Medicaid, and significant fines, monetary penalties and damages, and damage to our reputation. Additional information about these laws is provided in "Business—Regulation."

We have entered into consulting agreements and royalty agreements with surgeons, including some who are customers. We also engage in co-marketing arrangements with certain surgeons who use our products. In addition, a small number of our current customer surgeons own less than 1.0% of our stock, which they either purchased in an arm's length transaction on terms identical to those offered to others or received from us as fair market value consideration for consulting services performed. While all of these transactions were structured with the intention of complying with all applicable laws, including the federal Anti-Kickback Statute, state anti-kickback laws and other applicable laws, to the extent applicable, it is possible that regulatory agencies may view these transactions as prohibited arrangements that must be restructured, or discontinued, or for which we could be subject to significant penalties. We would be materially and adversely affected if regulatory agencies interpret our financial relationships with surgeons who order our products to be in violation of applicable laws and we were unable to comply with such laws, which could subject us to, among other things, monetary penalties for non-compliance, the cost of which could be substantial.

In certain cases, federal and state authorities pursue actions for false claims on the basis that manufacturers and distributors are promoting unapproved, or "off-label" uses of their products. Pursuant to FDA regulations, we can only market our products for cleared or approved uses. Although surgeons are permitted to use medical devices for indications other than those cleared or approved by the FDA, we are prohibited from promoting products for "off-label" uses. We market our products and provide promotional materials and training programs to surgeons regarding the use of our products. If it is determined that our marketing, promotional materials or training programs constitute promotion of unapproved uses, we could be subject to significant fines in addition to regulatory enforcement actions, including the issuance of a warning letter, injunction, seizure, criminal penalty, and damage to our reputation. Federal and state authorities also pursue actions for false claims based upon improper billing and coding advice or recommendations, as well as decisions related to the medical necessity of procedures, including the site-of-service where procedures are performed. Actions under the federal False Claims Act may also be brought by whistleblowers under its *qui tam* provisions.

To enforce compliance with the federal laws, the U.S. Department of Justice has increased its scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. Dealing with investigations can be time- and resource-consuming and can divert management's attention from the business. Additionally, if a healthcare company settles an investigation with the Department of Justice or other law enforcement agencies, it may need to agree to additional onerous compliance and reporting requirements as part of a consent decree or corporate integrity agreement. Any such investigation or settlement could increase our costs or otherwise have an adverse effect on our business. Even if we are not determined to have violated these laws, government investigations into these issues typically require the expenditure of significant resources and generate negative publicity, which could harm our financial condition and divert resources and the attention of our management from operating our business.

The scope and enforcement of these laws is uncertain and subject to rapid change. The shifting compliance environment and the need to build and maintain robust and expandable systems to comply with different compliance and/or reporting requirements in multiple jurisdictions increase the possibility that we may run afoul of one or more of the requirements or that federal or state regulatory authorities might challenge our current or future activities under these laws. Additionally, we cannot predict the impact of any changes in these laws, whether or not retroactive.

Our failure to adequately protect personal information in compliance with evolving legal requirements could harm our business.

In the ordinary course of our business, we collect and store sensitive data, including legally protected personally identifiable information. We collect this kind of information during the course of clinical trials and for post-marketing safety vigilance, helping enable surgeons and their patients to pursue claims for reimbursement for procedures using iFuse and servicing potential warranty claims.

There are a number of state, federal, and international laws protecting the privacy and security of health information and personal data. These data protection and privacy-related laws and regulations are evolving and may result in ever-increasing regulatory and public scrutiny of companies' data practices and escalating levels of enforcement and sanctions. As part of the American Recovery and Reinvestment Act 2009, or ARRA, Congress amended the privacy and security provisions of the Health Insurance Portability and Accountability Act, or HIPAA. HIPAA imposes certain requirements regarding the privacy, security, use, and disclosure of an individual's protected health information, or PHI, by certain health care providers, health care clearinghouses, and health insurance plans, collectively referred to as "covered entities," and their "business associates," or subcontractors who provide services to covered entities that involve the creation, use, maintenance, or disclosure of PHI. ARRA included significant increases in the penalties for improper use or disclosure of an individual's PHI under HIPAA and extended enforcement authority to state attorneys general. The amendments also created notification requirements applicable to covered entities and business associates in certain cases when PHI in their control has been inappropriately accessed or disclosed. In the case of a breach of unsecured PHI, covered entities may be required to provide notification to individuals affected by the breach, federal regulators, and, in some cases, local and national media. In addition to HIPAA, most states have laws requiring notification of affected individuals and state regulators in the event of a breach of "personal information," which is a broader class of information than the PHI protected by HIPAA. Certain states also have data privacy requirements applicable to individually identifiable health information. Privacy laws in different states may contain different requirements, and such laws may not be pre-empted by HIPAA, which could complicate our efforts to comply.

In addition, even when HIPAA does not apply, according to the FTC, failing to take appropriate steps to keep consumers' personal information secure constitutes unfair acts or practices in or affecting commerce in violation of Section 5(a) of the FTCA, 15 U.S.C § 45(a). The FTC expects a company's data security measures to be reasonable and appropriate in light of the sensitivity and volume of consumer information it holds, the size and complexity of its business, and the cost of available tools to improve security and reduce vulnerabilities. Medical data is considered sensitive data that merits stronger safeguards. The FTC's guidance for appropriately securing consumers' personal information is similar to what is required by the HIPAA Security Rule.

Many foreign countries and governmental bodies, including the EU, Australia, and other relevant jurisdictions, have laws and regulations concerning the collection and use of personal or sensitive data obtained from their residents or by businesses operating within their jurisdiction. For example, the European Commission recently adopted the General Data Protection Regulation, or the GDPR, effective on May 25, 2018, that will supersede current EU data protection legislation, impose more stringent EU data protection requirements and provide for greater penalties for noncompliance. The GDPR applies to any company established in the EU as well as to those outside the EU if they collect and use "personal data," or any information relating to an identified or identifiable natural person, in connection with the offering goods or services to individuals in the EU or the monitoring of their behavior. The GDPR enhances data protection obligations for processors and controllers of personal data, including, for example, expanded disclosures about how personal information is to be used, limitations on retention of information, mandatory data breach notification requirements, and substantial new obligations on services providers. Non-compliance with the GDPR can trigger steep fines of up to €20 million or 4% of total worldwide annual revenues, whichever is higher. Given the breadth and depth of changes in data protection obligations, achieving and maintaining GDPR compliance will require considerable time and resources.

We are at risk of enforcement actions taken by certain EU data protection authorities until such point in time that we may be able to ensure that all transfers of personal data to us from the European Economic Area are conducted in compliance with all applicable regulatory obligations, the guidance of data protection authorities and evolving best practices. We may find it necessary to establish systems to maintain personal data originating from the EU in the European Economic Area, which may involve substantial expense and may cause us to need to divert resources from other aspects of our business, all of which may adversely affect our business.

Our failure to comply with applicable laws and regulations, or to protect such data, could result in enforcement actions against us, including fines, imprisonment of company officials and public censure, claims for damages by end-customers, and other affected individuals, and the imposition of integrity obligations and agency oversight, damage to our reputation, and loss of goodwill, any of which could harm on our operations, financial performance, and business. Evolving and changing definitions of personal data and personal information, within the European Union, the United States, and elsewhere, may limit or inhibit our ability to operate or expand our business, including limiting strategic partnerships that may involve the sharing of data. Moreover, if the relevant laws and regulations change, or are interpreted and applied in a manner that is inconsistent with our data practices or the operation of our products, or if we expand into new regions and are required to comply with new requirements, we may need to expend resources in order to change our business operations, data practices, or the manner in which our products operate. Even the perception of privacy concerns, whether or not valid, may harm our reputation and inhibit adoption of our products.

We are subject to risks associated with our non-U.S. operations.

The FCPA prohibits companies and their intermediaries from making improper payments to foreign officials for the purpose of obtaining or retaining business. Other anti-corruption or anti-bribery laws, such as the UKBA, prohibit companies and their intermediaries from making improper payments for the purpose of obtaining or retaining business in foreign countries. The FCPA also imposes accounting standards and requirements on publicly traded U.S. corporations and their foreign affiliates, which are intended to prevent the diversion of corporate funds to the payment of bribes and other improper payments, and to prevent the establishment of slush funds from which such improper payments can be made. Because of the predominance of government-sponsored healthcare systems around the world, many of our customer relationships outside of the United States are with governmental entities and are therefore subject to such anti-bribery laws. Our internal control policies and procedures may not always protect us from reckless or criminal acts committed by our employees or agents. Violations of these laws, or allegations of such violations, could disrupt our operations, involve significant management distraction, and result in a material adverse effect on our business, results of operations, and financial condition. We also could suffer severe penalties, including criminal and civil penalties, disgorgement, and other remedial measures, including further changes or enhancements to our procedures, policies, and controls, as well as potential personnel changes and disciplinary actions.

Furthermore, we are subject to anti-boycott laws, anti-money laundering laws, and the export controls and economic embargo rules and regulations of the United States, including, but not limited to, the Export Administration Regulations and trade sanctions against embargoed countries, which are administered by the Office of Foreign Assets Control within the Department of the Treasury, as well as the laws and regulations administered by the Department of Commerce. These regulations limit our ability to market, sell, distribute, or otherwise transfer our products or technology to prohibited countries or persons. A determination that we have failed to comply, whether knowingly or inadvertently, may result in substantial penalties, including fines and enforcement actions and civil and/or criminal sanctions, the disgorgement of profits, and the imposition of a court-appointed monitor, as well as the denial of export privileges, and may have an adverse effect on our reputation.

Even if our products are approved by regulatory authorities or CE marked, if we, our contractors, or our suppliers fail to comply with ongoing FDA or other foreign regulatory requirements, or if we experience unanticipated problems with our products, these products could be subject to restrictions or withdrawal from the market.

Any product for which we obtain regulatory clearance or approval, or a CE Certificate of Conformity, and the manufacturing processes, reporting requirements, post-approval clinical data, and promotional activities for such product, will be subject to continued regulatory review, oversight and periodic inspections by the FDA, our Notified Body and other domestic and foreign regulatory bodies. In particular, we and our suppliers are required to comply with FDA's Quality System Regulations, or QSR, and International Standards Organization, regulations for the manufacture of our products and other regulations which cover the methods and documentation of the design, testing, production, control, quality assurance, labeling, packaging, storage, and shipping of any product for which we obtain regulatory clearance or approval, or a CE Certificate of Conformity.

The failure by us or one of our suppliers to comply with applicable statutes and regulations, or the failure to timely and adequately respond to any adverse inspectional observations or product safety issues, could result in, among other things, any of the following enforcement actions:

- untitled letters, warning letters, fines, injunctions, consent, and civil penalties;
- unanticipated expenditures to address or defend such actions;
- customer notifications for repair, replacement, refunds;
- recall, detention, or seizure of our products;
- operating restrictions or partial suspension or total shutdown of production;
- refusing or delaying our requests for 510(k) clearance or premarket approval and conformity assessments of new products or modified products;
- limitations on the intended uses for which the product may be marketed;
- operating restrictions;
- withdrawing 510(k) clearances or PMA approvals that have already been granted;
- suspension or withdrawal of CE Certificates of Conformity;
- refusal to grant export approval for our products; and
- criminal prosecution.

In addition, we may be required to conduct costly post-market testing and surveillance to monitor the safety or effectiveness of our products, and we must comply with medical device reporting requirements, including the reporting of adverse events and malfunctions related to our products. Later discovery of previously unknown problems with our products, including unanticipated adverse events or adverse events of unanticipated severity or frequency, manufacturing problems, or failure to comply with regulatory requirements such as QSR, may result in changes to labeling, restrictions on such products or manufacturing processes, withdrawal of the products from the market, voluntary or mandatory recalls, a requirement to repair, replace, or refund the cost of any medical device we manufacture or distribute, fines, suspension, variation, or withdrawal of regulatory approvals or CE Certificates of Conformity, product seizures, injunctions, or the imposition of civil, administrative, or criminal penalties which would adversely affect our business, operating results, and prospects.

If the FDA determines that our promotional materials, labeling, training or other marketing or educational activities constitute promotion of an unapproved use, it could request that we cease or modify our training or promotional materials or subject us to regulatory enforcement actions. It is also possible that other federal, state or foreign enforcement authorities might take action if they consider our training or other promotional materials to constitute promotion of an unapproved use, which could result in significant fines or penalties under other statutory authorities, such as laws prohibiting false or fraudulent claims for payment of government funds.

If any of these actions were to occur it would harm our reputation and cause our product sales and profitability to suffer and may prevent us from generating revenue. Furthermore, our key component suppliers may not currently be or may not continue to be in compliance with all applicable regulatory requirements, which could result in our failure to produce our products on a timely basis and in the required quantities, if at all.

The FDA inspected our facilities in May 2014. As a result, we received a Notice of Inspectional Observations, or Form 483, with three observations that have since been addressed with a corrective and preventative action, or CAPA, plan. We responded to the Agency in writing and the matter was closed as of October 2014 through the issuance of an Establishment Inspection Report. To date, the FDA has not taken any further action with respect to the May 2014 inspection or its findings. The FDA inspected our facilities again in December 2016 and no findings were noted.

Our employees, independent contractors, consultants, manufacturers, and third-party distributors may engage in misconduct or other improper activities, relating to regulatory standards and requirements.

We are exposed to the risk that our employees, independent contractors, consultants, manufacturers, and third-party distributors may engage in fraudulent conduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violates FDA regulations, including those laws requiring the reporting of true, complete and accurate information to the FDA, manufacturing standards, federal and state healthcare laws and regulations, and laws that require the true, complete and accurate reporting of financial information or data. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs, and other business arrangements. Misconduct by these parties could also involve the improper use of individually identifiable information, including, without limitation, information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. We have a compliance program, code of conduct and associated policies and procedures, but it is not always possible to identify and deter misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant civil, criminal, and administrative penalties, including, without limitation, damages, fines, disgorgement of profits, imprisonment, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations.

We may be subject to enforcement action, including fines, penalties or injunctions, if we are determined to be engaging in the off-label promotion of our products.

Our promotional materials and training methods must comply with FDA and other applicable laws and regulations, including the prohibition of the promotion of off-label use. Physicians may use our products off-label, as the FDA does not restrict or regulate a physician’s choice of treatment within the practice of medicine. In the United States, the full indication for the iFuse Implant System is: “The iFuse Implant System is intended for sacroiliac joint fusion for conditions including sacroiliac joint dysfunction that is a direct result of sacroiliac joint disruption and degenerative sacroiliitis. This includes conditions whose symptoms began during pregnancy or in the peripartum period and have persisted postpartum for more than six months. Clinical studies have demonstrated that treatment with the iFuse Implant System improved pain, patient function, and quality of life at 12-months post-implantation.” Moreover, iFuse is one of the few devices regulated through the class II pathway that has claims for clinical improvements. iFuse-3D, which was FDA-cleared in 2017, has a very similar indication statement but does not have the statement regarding improvement in pain, function and disability. In the United States, our marketing strategies must adhere to the above statements. In all other countries, the indication statement for the iFuse Implant System (including iFuse-3D) more broadly indicates that the device is indicated for sacroiliac joint fusion. The above-described potential limitation in indication statements in the U.S. does not apply in other geographies.

We believe that the specific surgical procedures for which our products are marketed fall within the scope of the surgical applications that have been cleared by the FDA. However, if the FDA determines that our promotional materials or training constitutes promotion of an off-label use, it could request that we modify our training or promotional materials, require us to stop promoting our products for those specific procedures until we obtain FDA clearance or approval for them, or subject us to regulatory or enforcement actions, including the issuance of an untitled letter, a warning letter, injunction, seizure, civil fines, and criminal penalties. It is also possible that other federal, state or foreign enforcement authorities might take action if they consider our promotional or training materials to constitute promotion of an unapproved use, which could result in significant fines or penalties under other statutory authorities, such as laws prohibiting false or fraudulent claims for payment of government fund. In that event, our reputation could be damaged and adoption of the products would be impaired. Although our policy is to refrain from statements that could be considered off-label promotion of our products, the FDA or another regulatory agency could disagree and conclude that we have engaged in off-label promotion. In addition, the off-label use of our products may increase the risk of injury to patients, and, in turn, the risk of product liability claims. Product liability claims are expensive to defend and could divert our management's attention, result in substantial damage awards against us and harm our reputation.

We are required to report certain malfunctions, deaths, and serious injuries associated with our products, which can result in voluntary corrective actions or agency enforcement actions.

Further, under the FDA's medical device reporting, regulations, we are required to report to the FDA any information that our product may have caused or contributed to a death or serious injury or in which our product malfunctioned and, if the malfunction were to recur, would likely cause or contribute to death or serious injury. If we fail to report these events to the FDA within the required timeframes, or at all, FDA could take enforcement action against us. Any such adverse event involving our products or repeated product malfunctions may result in a voluntary or involuntary corrective actions, such as recalls or customer notifications, or agency action, such as inspection or enforcement action. Any corrective action, whether voluntary or involuntary, as well as defending ourselves in a lawsuit could divert managerial and financial resources, impair our ability to manufacture our products in a cost-effective and timely manner, and have an adverse effect on our reputation, results of operations, and financial condition.

In the EEA, we must comply with the EU Medical Device Vigilance System. Under this system, incidents must be reported to the relevant authorities of the Member States of the EEA, and manufacturers are required to take Field Safety Corrective Actions, or FSCAs, to reduce a risk of death or serious deterioration in the state of health associated with the use of a medical device that is already placed on the market. An incident is defined as any malfunction or deterioration in the characteristics and/or performance of a device, as well as any inadequacy in the labeling or the instructions for use which, directly or indirectly, might lead to or might have led to the death of a patient or user or of other persons or to a serious deterioration in their state of health. An FSCA may include the recall, modification, exchange, destruction or retrofitting of the device FSCAs must be communicated by the manufacturer or its legal representative to its customers and/or to the end users of the device through Field Safety Notices.

Any adverse event involving our products, whether in the United States or abroad could result in future voluntary corrective actions, such as recalls, including corrections, or customer notifications, or agency action, such as inspection or enforcement actions. If malfunctions do occur, we may be unable to correct the malfunctions adequately or prevent further malfunctions, in which case we may need to cease manufacture and distribution of the affected products, initiate voluntary recalls, and redesign the products. Regulatory authorities may also take actions against us, such as ordering recalls, imposing fines, or seizing the affected products. Any corrective action, whether voluntary or involuntary, will require the dedication of our time and capital, distract management from operating our business, and may harm our reputation and financial results.

A recall of our products, either voluntarily or at the direction of the FDA or another governmental authority, including foreign governmental authorities, or the discovery of serious safety issues or malfunctions with our products, can result in voluntary corrective actions or agency enforcement actions, which could have a significant adverse impact on us.

The FDA and similar foreign governmental authorities have the authority to require the recall of commercialized products in the event of material deficiencies or defects in design or manufacture or in the event that a product poses an unacceptable risk to health. Manufacturers may, under their own initiative, recall a product if any material deficiency in a device is found.

In the case of the FDA, the authority to require a recall must be based on an FDA finding that there is an unreasonable risk of substantial public harm. In addition, foreign governmental bodies have the authority to require the recall of our products in the event of material deficiencies or defects in design or manufacture. A government-mandated or voluntary recall by us or one of our third-party distributors could occur as a result of an unacceptable risk to health, component failures, manufacturing errors, design or labeling defects, or other deficiencies and issues. Recalls of any of our products would divert managerial and financial resources and have an adverse effect on our reputation, results of operations, and financial condition, which could impair our ability to produce our products in a cost-effective and timely manner in order to meet our customers' demands. We may also be required to bear other costs or take other actions that may have a negative impact on our future sales and our ability to generate profits.

The FDA requires that certain classifications of recalls be reported to FDA within 10 working days after the recall is initiated. Companies are required to maintain certain records of recalls, even if they are not reportable to the FDA. We may initiate voluntary recalls involving our products in the future that we determine do not require notification of the FDA. If the FDA disagrees with our determinations, they could require us to report those actions as recalls. A future recall announcement could harm our reputation with customers and negatively affect our sales. In addition, the FDA could take enforcement action for failing to report the recalls when they were conducted.

Modifications to our products may require new 510(k) clearances or premarket approvals and new conformity assessment by our Notified Body, or may require us to cease marketing or recall the modified products until clearances, approvals, or CE Certificates of Conformity are obtained.

Any modification to a 510(k)-cleared device that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, design, or manufacture, requires a new 510(k) clearance or, possibly, a PMA. The FDA requires every manufacturer make and document this determination in the first instance. A manufacturer may determine that a modification could not significantly affect safety or effectiveness and does not represent a major change in its intended use, so that no new 510(k) clearance is necessary. FDA may review any manufacturer's decision and may not agree with our decisions regarding whether new clearances or approvals are necessary. The FDA may also on its own initiative determine that a new clearance or approval is required. We have made modifications to our products in the past and may make additional modifications in the future that we believe do not or will not require additional clearances or approvals. If the FDA disagrees and requires new clearances or approvals for the modifications, we may be required to recall and to stop marketing our products as modified until clearance or approvals can be obtained, which could require us to redesign our products and harm our operating results. In these circumstances, we may be subject to significant enforcement actions.

We have modified some of our 510(k) cleared products, and have determined based on our review of the applicable FDA guidance that in certain instances new 510(k) clearances or PMAs are not required. If the FDA disagrees with our determination and requires us to submit new 510(k) clearances or PMAs for modifications to our previously cleared products for which we have concluded that new clearances or approvals are unnecessary, we may be required to cease marketing or to recall the modified product until we obtain clearance or approval, and we may be subject to significant enforcement action, regulatory fines, or penalties.

If a manufacturer determines that a modification to an FDA-cleared device could significantly affect its safety or effectiveness, or would constitute a major change in its intended use, then the manufacturer must file for a new 510(k) clearance or possibly a premarket approval application. Where we determine that modifications to our products require a new 510(k) clearance or premarket approval application, we may not be able to obtain those additional clearances or approvals for the modifications or additional indications in a timely manner, or at all. FDA's ongoing review of the 510(k) program may make it more difficult for us to make modifications to our previously cleared products, either by imposing more strict requirements on when a new 510(k) for a modification to a previously cleared product must be submitted, or applying more onerous review criteria to such submissions.

In the EEA, we must inform the Notified Body that carried out the conformity assessment of the medical devices we market or sell in the EEA of any planned substantial changes to our quality system or changes to our devices which could affect compliance with the essential requirements or the devices' intended use. The Notified Body will then assess the changes and verify whether they affect the products' conformity. There can be no assurances that the assessment will be favorable and that the Notified Body will attest our compliance with the essential requirements, which will prevent us from selling our products in the EEA.

Obtaining regulatory clearances or approvals and CE Certificates of Conformity can be a time-consuming process, and delays in obtaining required future regulatory clearances or approvals, and CE Certificates of Conformity would adversely affect our ability to introduce new or enhanced products in a timely manner, which in turn would harm our future growth.

There is no guarantee that the FDA will grant 510(k) clearance or premarket approval of our future products or that our Notified Body will issue the required CE Certificate of Conformity, and failure to obtain necessary clearances or approvals for our future products would adversely affect our ability to grow our business.

We are in the process of developing our regulatory strategies for obtaining clearance or approval for future products. Some of them may require 510(k) clearance by the FDA or a new CE Certificate of Conformity. Other future products may require premarket approval. In addition, some of our new products may require clinical trials to support regulatory approval and we may not successfully complete these clinical trials. The FDA may not approve or clear these products or our Notified Body may not issue CE Certificate of Conformity for the indications that are necessary or desirable for successful commercialization. Indeed, the FDA may refuse our requests for 510(k) clearance or premarket approval of new products, new intended uses, or modifications to existing products. Failure to receive clearance or approval for our new products would have an adverse effect on our ability to expand our business.

We may fail to obtain or maintain foreign regulatory approvals to market our products in other countries.

We currently market our products internationally and intend to expand our international marketing. International jurisdictions require separate regulatory approvals and compliance with numerous and varying regulatory requirements. For example, we intend to continue to seek domestic and international regulatory clearance to market our primary products Asia, Latin America, and the Middle East and other key markets. The approval procedures vary among countries and may involve requirements for substantial additional testing, and the time required to obtain approval may differ from country to country and from that required to obtain FDA clearance or approval or to obtain CE Certificates of Conformity.

Clearance or approval by the FDA or obtaining a CE Certificate of Conformity does not ensure approval or certification by regulatory authorities in other countries or jurisdictions, and approval or certification by one foreign regulatory authority does not ensure approval or certification by regulatory authorities in other foreign countries or by the FDA, and the CE marking of our products in the EEA. The foreign regulatory approval or certification process may include all of the risks associated with obtaining FDA clearance or approval, or a CE Certificate of Conformity for a medical device in the EEA in addition to other risks. In addition, the time

required to obtain foreign approval may differ from that required to obtain FDA clearance or approval, or a CE Certificate of Conformity in the EEA and we may not obtain foreign regulatory approvals on a timely basis, if at all. We may not be able to file for regulatory approvals or certifications and may not receive necessary approvals to commercialize our products in any market. If we fail to receive necessary approvals or certifications to commercialize our products in foreign jurisdictions on a timely basis, or at all, our business, results of operations, and financial condition could be adversely affected.

Clinical trials necessary to support a 510(k) or PMA application or a conformity assessment procedure will be expensive and may require the enrollment of large numbers of patients, and suitable patients may be difficult to identify and recruit. Delays or failures in our clinical trials will prevent us from commercializing any modified or new products and will adversely affect our business, operating results and prospects.

Initiating and completing clinical trials necessary to support a PMA application for our future products and additional safety and effectiveness data beyond that typically required for a 510(k) clearance for iFuse, as well as other possible future product candidates, and to support a conformity assessment procedure would be time consuming and expensive and the outcome uncertain. Moreover, the results of early clinical trials are not necessarily predictive of future results, and any product we advance into clinical trials may not have favorable results in later clinical trials.

Conducting successful clinical studies may require the enrollment of large numbers of patients, and suitable patients may be difficult to identify and recruit. Patient enrollment in clinical trials and completion of patient participation and follow-up depends on many factors, including the size of the patient population, the nature of the trial protocol, the attractiveness of, or the discomforts and risks associated with, the treatments received by enrolled subjects, the availability of appropriate clinical trial investigators, support staff, and proximity of patients to clinical sites and able to comply with the inclusion and exclusion criteria for participation in the clinical trial and patient compliance. Development of sufficient and appropriate clinical protocols to demonstrate safety and effectiveness are required and we may not adequately develop such protocols to support clearance and approval. Further, the FDA or our Notified Body may require us to submit data on a greater number of patients than we originally anticipated and/or for a longer follow-up period or change the data collection requirements or data analysis applicable to our clinical trials. Delays in patient enrollment or failure of patients to continue to participate in a clinical trial may cause an increase in costs and delays in the approval and attempted commercialization of our products or result in the failure of the clinical trial. In addition, despite considerable time and expense invested in our clinical trials, the FDA or our Notified Body may not consider our data adequate to demonstrate safety and effectiveness. Such increased costs and delays or failures could adversely affect our business, operating results and prospects.

Our facility and our clinical investigational sites operate under procedures that govern the conduct and management of FDA-regulated clinical studies under 21 CFR Parts 50 and 812, and Good Clinical Practices. The FDA may conduct Bioresearch Monitoring inspections of us and/or our clinical sites to assess compliance with 21 CFR Parts 50 and 812, our procedures, and the clinical protocol. If the FDA were to find that we or our clinical investigators are not operating in compliance with applicable regulations, we could be subject to the above FDA enforcement action, as well as refusal to accept all or part of our data in support of our 510(k) or PMA, or we may need to conduct additional studies.

The results of our clinical trials may not support our product candidate claims or may result in the discovery of adverse side effects.

Even if our clinical trials are completed as planned, we cannot be certain that their results will support our product candidate claims or that the FDA, foreign authorities, or our Notified Body will agree with our conclusions regarding them. Success in pre-clinical studies and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the later trials will replicate the results of prior trials and pre-clinical studies. The clinical trial process may fail to demonstrate that our product candidates are safe and

effective for the proposed indicated uses, which could cause us to abandon a product candidate and may delay development of others. Any delay or termination of our clinical trials will delay the filing of our product submissions and, ultimately, our ability to commercialize our product candidates and generate revenue. It is also possible that patients enrolled in clinical trials will experience adverse side effects that are not currently part of the product candidate's profile.

U.S. legislative or FDA or foreign regulatory reforms may make it more difficult and costly for us to obtain regulatory clearances or approvals, or CE Certificates of Conformity for our product candidates and to manufacture, market, and distribute our products after approval is obtained.

From time to time, Congress introduces legislation that could significantly change the statutory provisions governing the regulatory approval, manufacture, and marketing of regulated products or the reimbursement thereof. In addition, FDA regulations and guidance are often revised or reinterpreted by the FDA in ways that may significantly affect our business and our products. Any new regulations or revisions or reinterpretations of existing regulations may impose additional costs or lengthen review times of future products. In addition, FDA regulations and guidance are often revised or reinterpreted by the agency in ways that may significantly affect our business and our products. It is impossible to predict whether legislative changes will be enacted or FDA regulations, guidance, or interpretations changed, and what the impact of such changes, if any, may be.

In December 2016, the 21st Century Cures Act was enacted, with a number of provisions impacting medical device regulation. The FDA has implemented, and continues to implement, these reforms, which could impose additional regulatory requirements upon us and delay our ability to obtain new 510(k) clearances, increase the costs of compliance or restrict our ability to maintain our current clearances. Any change in the laws or regulations that govern the clearance and approval processes relating to our current and future products could make it more difficult and costly to obtain clearance or approval for new products, or to produce, market, and distribute existing products. Significant delays in receiving clearance or approval, or the failure to receive clearance or approval for our new products would have an adverse effect on our ability to expand our business.

Moreover, the policies of the Trump Administration and their impact on the regulation of our products in the United States remain uncertain. The outcome of the 2016 election and the forthcoming 2018 mid-term elections could result in significant legislative and regulatory reforms impacting the FDA's regulation of our products. Any change in the laws or regulations that govern the clearance and approval processes relating to our current and future products could make it more difficult and costly to obtain clearance or approval for new products, or to produce, market and distribute existing products. Significant delays in receiving clearance or approval, or the failure to receive clearance or approval for our new products would have an adverse effect on our ability to expand our business.

Another example can be found in the EEA. On September 26, 2012, the European Commission adopted a package of legislative proposals designed to replace the existing regulatory framework for medical devices in the EEA. These proposals are intended to strengthen the medical devices rules in the EEA. On April 5, 2017, the final text of the Medical Devices Regulation (MDR) and In Vitro Diagnostic Medical Devices Regulation (IVDR) were adopted by the Parliament and the Council. These regulations, which will substantially impact medical devices manufacturers, will be applicable from May 2020 for the MDR and May 2022 for the IVDR. Examples of the changes which will be introduced by these regulations include the following:

- additional scrutiny during the conformity assessment procedure for high risk medical devices;
- strengthening of the clinical data requirements related to medical devices;
- strengthening of the designation and monitoring processes governing notified bodies;
- the obligation for manufacturers and authorized representative to have a person responsible for regulatory compliance continuously at their disposal;

- authorized representatives would be held legally responsible and liable for defective products placed on the EU market;
- increased traceability of medical devices following the introduction of a Unique Device Identification, or UDI, system;
- new rules governing the reprocessing of medical devices; and
- increased transparency with the establishment of EUDAMED III as information from several databases concerning economic operators, CE Certificates of Conformity, conformity assessment, clinical investigations, the UDI system, adverse event reporting and market surveillance would be available to the public.

The sales of our products depend in part on the availability of coverage and reimbursement from third-party payors such as government health administration authorities, private health insurers, health maintenance organizations, and other healthcare-related organizations. Recent political, economic, and regulatory influences are subjecting the healthcare industry to fundamental changes that can impact coverage and reimbursement from third-party payors. For example, Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2011, among other things, reduced and/or limited Medicare reimbursement to certain providers. Legislative changes to the Patient Protection and Affordable Care Act remain possible and appear likely in the 115th United States Congress and under the Trump Administration. We expect that the Patient Protection and Affordable Care Act, as currently enacted or as it may be amended in the future, and other healthcare reform measures that may be adopted in the future, could have a material adverse effect on our industry generally and on our ability to maintain or increase sales of our existing products. Other federal laws further reduce Medicare's payments to providers by two percent through 2024. These reductions reduce reimbursement for our products, which could potentially negatively impact our revenue, and may reduce providers' revenues or profits, which could affect their ability to purchase new technologies. Both the federal and state governments in the United States and foreign governments continue to propose and pass new legislation and regulations designed to contain or reduce the cost of healthcare. Such legislation and regulations may result in decreased reimbursement for medical devices, which may further exacerbate industry-wide pressure to reduce the prices charged for medical devices. This could harm our ability to market our products and generate sales.

Our financial performance may be adversely affected by medical device tax provisions in the healthcare reform laws.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2011, imposes, among other things, an annual excise tax on any entity that manufactures or imports medical devices offered for sale in the United States. Under these provisions, the Congressional Research Service predicts that the total cost to the medical device industry may be up to $20.0 billion over the next decade. A two-year moratorium currently applies to this tax through December 2019. After that time, the tax may be repealed or modified, or the moratorium may be lifted, in which case sales of our iFuse would be subject to this excise tax. In July 2018, the U.S. House of Representatives voted to repeal this tax. The U.S. Senate is expected to vote on the matter in the fourth quarter of 2018.

We may incur product liability losses, and insurance coverage may be inadequate or unavailable to cover these losses.

Our business exposes us to potential product liability claims that are inherent in the testing, design, manufacture, and sale of medical devices for sacroiliac joint surgery procedures. Sacroiliac joint surgery involves significant risk of serious complications, including bleeding, nerve injury, paralysis, and even death. In addition, if longer-term patient results and experience indicates that our products or any component of a product cause tissue damage, motor impairment, or other adverse effects, we could be subject to significant liability. Surgeons may misuse or ineffectively use our products, which may result in unsatisfactory patient outcomes or patient

injury. We could become the subject of product liability lawsuits alleging that component failures, manufacturing flaws, design defects, or inadequate disclosure of product-related risks or product-related information resulted in an unsafe condition or injury to patients. Product liability lawsuits and claims, safety alerts, or product recalls, regardless of their ultimate outcome, could have a material adverse effect on our business and reputation, our ability to attract and retain customers and our results of operations or financial condition.

Although we maintain third-party product liability insurance coverage, it is possible that claims against us may exceed the coverage limits of our insurance policies or cause us to record a self-insured loss. Even if any product liability loss is covered by an insurance policy, these policies typically have substantial retentions or deductibles that we are responsible for. Product liability claims in excess of applicable insurance coverage could have a material adverse effect on our business, results of operations, and financial condition.

In addition, any product liability claim brought against us, with or without merit, could result in an increase of our product liability insurance rates. Insurance coverage varies in cost and can be difficult to obtain, and we cannot guarantee that we will be able to obtain insurance coverage in the future on terms acceptable to us or at all.

We are subject to environmental laws and regulations that can impose significant costs and expose us to potential financial liabilities.

The manufacture of certain of our products, including our implants and products, and the handling of materials used in the product testing process, including in our cadaveric laboratory, involve the use of biological, hazardous and/or radioactive materials and wastes. Our business and facilities and those of our suppliers are subject to foreign, federal, state, and local laws and regulations relating to the protection of human health and the environment, including those governing the use, manufacture, storage, handling, and disposal of, and exposure to, such materials and wastes. In addition, under some environmental laws and regulations, we could be held responsible for costs relating to any contamination at our past or present facilities and at third-party waste disposal sites even if such contamination was not caused by us. A failure to comply with current or future environmental laws and regulations could result in severe fines or penalties. Any such expenses or liability could have a significant negative impact on our business, results of operations, and financial condition.

Risks Related to Our Intellectual Property

Our ability to protect our intellectual property and proprietary technology is uncertain.

We rely primarily on patent, copyright, trademark and trade secret laws, as well as confidentiality and non- disclosure agreements and other methods, to protect our proprietary technologies and know-how. As of June 30, 2018, we owned 34 issued U.S. patents and had 11 pending U.S. patent applications, and we owned six issued foreign patents and had seven pending foreign patent applications. As of June 30, 2018, we have 12 registered trademarks in the United States and have filed for one more. We have sought protection for at least two of these trademarks in 60 countries including the 28 European member countries of the Madrid Protocol.

We have applied for patent protection relating to certain existing and proposed products and processes. While we generally apply for patents in those countries where we intend to make, have made, use, or sell patented products, we may not accurately predict all of the countries where patent protection will ultimately be desirable. If we fail to timely file a patent application in any such country, we may be precluded from doing so at a later date. Furthermore, we cannot assure you that any of our patent applications will be approved. The rights granted to us under our patents, including prospective rights sought in our pending patent applications, may not be meaningful or provide us with any commercial advantage. In addition, those rights could be opposed, contested, or circumvented by our competitors or be declared invalid or unenforceable in judicial or administrative proceedings. The failure of our patents to adequately protect our technology might make it easier for our competitors to offer the same or similar products or technologies. Competitors may be able to design

around our patents or develop products that provide outcomes which are comparable to ours without infringing on our intellectual property rights. Due to differences between foreign and U.S. patent laws, our patented intellectual property rights may not receive the same degree of protection in foreign countries as they would in the United States. Even if patents are granted outside the United States, effective enforcement in those countries may not be available. Since most of our issued patents are for the United States only, we lack a corresponding scope of patent protection in other countries. In countries where we do not have significant patent protection, we may not be able to stop a competitor from marketing products in such countries that are the same as or similar to our products.

We rely on our trademarks, trade names and brand names to distinguish our products from the products of our competitors and have registered or applied to register many of these trademarks. We cannot assure you that our trademark applications will be approved. Third parties may also oppose our trademark applications, or otherwise challenge our use of the trademarks. In the event that our trademarks are successfully challenged, we could be forced to rebrand our products, which could result in loss of brand recognition, and could require us to devote resources to advertising and marketing new brands. Further, we cannot assure you that competitors will not infringe upon our trademarks, or that we will have adequate resources to enforce our trademarks.

We also rely on trade secrets, know-how, and technology, which are not protected by patents, to maintain our competitive position. We try to protect this information by entering into confidentiality and intellectual property assignment agreements with parties that develop intellectual property for us and/or have access to it, such as our officers, employees, consultants, and advisors. However, in the event of unauthorized use or disclosure or other breaches of such agreements, we may not be provided with meaningful protection for our trade secrets or other proprietary information. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our commercial partners, collaborators, employees, and consultants use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know- how and inventions. If any of our trade secrets, know-how or other technologies not protected by a patent were to be disclosed to or independently developed by a competitor, our business, financial condition, and results of operations could be materially adversely affected.

In the future, we may enter into licensing agreements to maintain our competitive position. If we enter into in-bound intellectual property license agreements, we may not be able to fully protect the licensed intellectual property rights or maintain those licenses. Future licensors could retain the right to prosecute and defend the intellectual property rights licensed to us, in which case we would depend on the ability of our licensors to obtain, maintain and enforce intellectual property protection for the licensed intellectual property. These licensors may determine not to pursue litigation against other companies or may pursue such litigation less aggressively than we would. Further, entering into such license agreements could impose various diligence, commercialization, royalty, or other obligations on us. Future licensors may allege that we have breached our license agreement with them, and accordingly seek damages or to terminate our license, which could adversely affect our competitive business position and harm our business prospects.

If a competitor infringes upon one of our patents, trademarks, or other intellectual property rights, enforcing those patents, trademarks, and other rights may be difficult and time consuming. Even if successful, litigation to defend our patents and trademarks against challenges or to enforce our intellectual property rights could be expensive and time consuming and could divert management’s attention from managing our business. Moreover, we may not have sufficient resources to defend our patents or trademarks against challenges or to enforce our intellectual property rights. In addition, if third parties infringe any intellectual property that is not material to the products that we make, have made, use, or sell, it may be impractical for us to enforce this intellectual property against those third parties.

We may be subject to damages resulting from claims that we, our employees, or our third-party distributors have wrongfully used or disclosed alleged trade secrets of our competitors or are in breach of non-competition or non-solicitation agreements with our competitors.

Many of our employees were previously employed at other medical device companies, including our competitors or potential competitors, in some cases until recently. Some of our third-party distributors sell, or in the past have sold, products of our competitors. We may be subject to claims that we, our employees, or our third-party distributors have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of these former employers or competitors. In addition, we have been and may in the future be subject to claims that we caused an employee to breach the terms of his or her non-competition or non-solicitation agreement. Even if we are successful in defending against these claims, litigation could result in substantial costs, divert the attention of management from our core business and harm our reputation. If our defense to those claims fails, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. There can be no assurance that this type of litigation will not continue, and any future litigation or the threat thereof may adversely affect our ability to hire additional direct sales representatives. A loss of key personnel or their work product could hamper or prevent our ability to commercialize product candidates, which could have an adverse effect on our business, results of operations, and financial condition.

The medical device industry is characterized by patent litigation and we could become subject to litigation that could be costly, result in the diversion of management's time and efforts, require us to pay damages, and/or prevent us from developing or marketing our existing or future products.

Our commercial success will depend in part on not infringing the patents or violating the other proprietary rights of third parties. Significant litigation regarding patent rights exists in our industry. Our competitors in both the United States and abroad, many of which have substantially greater resources and have made substantial investments in competing technologies, may have applied for or obtained or may in the future apply for and obtain, patents that will prevent, limit, or otherwise interfere with our ability to make and sell our products. We have conducted a limited review of patents issued to third parties. The large number of patents, the rapid rate of new patent issuances, the complexities of the technology involved, and the uncertainty of litigation increase the risk of business assets and management's attention being diverted to patent litigation. Any litigation or claim against us, even those without merit, may cause us to incur substantial costs, and could place a significant strain on our financial resources, divert the attention of management from our core business, and harm our reputation. Further, as the number of participants in the medical device industry grows, the possibility of intellectual property infringement claims against us increases. If we are found to infringe the intellectual property rights of third parties, we could be required to pay substantial damages, including treble, or triple, damages if an infringement is found to be willful, and/or royalties and could be prevented from selling our products unless we obtain a license or are able to redesign our products to avoid infringement. Any such license may not be available on reasonable terms, if at all, and there can be no assurance that we would be able to redesign our products in a way that would not infringe the intellectual property rights of others. If we fail to obtain any required licenses or make any necessary changes to our products or technologies, we may have to withdraw existing products from the market or may be unable to commercialize one or more of our products, all of which could have a material adverse effect on our business, results of operations, and financial condition. If passed into law, patent reform legislation currently pending in the U.S. Congress could significantly change the risks associated with bringing or defending a patent infringement lawsuit. For example, fee shifting legislation could require a non-prevailing party to pay the attorney fees of the prevailing party in some circumstances.

In addition, we generally indemnify our customers and third-party distributors with respect to infringement by our products of the proprietary rights of third parties. Third parties may assert infringement claims against our customers or third-party distributors. These claims may require us to initiate or defend protracted and costly litigation on behalf of our customers or third-party distributors, regardless of the merits of these claims. If any of these claims succeed, we may be forced to pay damages on behalf of our customers or third-party distributors or may be required to obtain licenses to intellectual property owned by such third parties. If we cannot obtain all

necessary licenses on commercially reasonable terms, our customers and third-party distributors may be forced to stop using or selling our products.

Risks Related to this Offering and Ownership of Our Common Stock

The price of our common stock may be volatile, and the value of your investment could decline.

Prior to this offering, there has been no public market for our common stock, and medical device stocks have historically experienced volatility. The trading price of our common stock following this offering may fluctuate substantially. Following the closing of this offering, the market price of our common stock may be higher or lower than the price you pay in the offering, depending on many factors, some of which are beyond our control and may not be related to our operating performance. These fluctuations could cause you to lose all or part of your investment in our common stock. Factors that could cause fluctuations in the trading price of our common stock include the following:

- actual or anticipated changes or fluctuations in our results of operations;
- results of our clinical trials and that of our competitors' products;
- regulatory actions with respect to our products or our competitor's products;
- announcements of new offerings, products, services or technologies, commercial relationships, acquisitions, or other events by us or our competitors;
- price and volume fluctuations in the overall stock market from time to time;
- significant volatility in the market price and trading volume of healthcare companies, in general, and of companies in the medical device industry in particular;
- fluctuations in the trading volume of our shares or the size of our public float;
- negative publicity;
- whether our results of operations meet the expectations of securities analysts or investors or those expectations change;
- litigation involving us, our industry, or both;
- regulatory developments in the United States, foreign countries, or both;
- lock-up releases and sales of large blocks of our common stock;
- additions or departures of key employees or scientific personnel; and
- general economic conditions and trends.

In addition, if the market for healthcare stocks or the stock market, in general, experience a loss of investor confidence, the trading price of our common stock could decline for reasons unrelated to our business, results of operations, or financial condition. The trading price of our common stock might also decline in reaction to events that affect other companies in our industry even if these events do not directly affect us. In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been brought against that company. If our stock price is volatile, we may become the target of securities litigation. Securities litigation could result in substantial costs and divert our management's attention and resources from our business. This could have a material adverse effect on our business, results of operations, and financial condition.

Sales of substantial amounts of our common stock in the public markets, including when the "lock-up" or "market standoff" period ends, or the perception that sales might occur, could reduce the price of our common stock and may dilute your voting power and your ownership interest in us.

Sales of a substantial number of shares of our common stock in the public market after this offering, or the perception that these sales could occur, could adversely affect the market price of our common stock, and may

make it more difficult for you to sell your common stock at a time and price that you deem appropriate. Based on the total number of outstanding shares of our common stock as of June 30, 2018, upon the closing of this offering, we will have shares of common stock outstanding. All of the shares of common stock sold in this offering will be freely tradable without restrictions or further registration under the Securities Act of 1933, as amended, or the Securities Act, except for any shares held by our "affiliates" as defined in Rule 144 under the Securities Act.

Subject to certain exceptions, we, our directors and officers and the holders of substantially all of our capital stock, warrants and stock options have agreed not to offer, sell or agree to sell, directly or indirectly, any shares of common stock without the permission of Morgan Stanley & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated for a period of 180 days from the date of this prospectus. When the lock-up period expires, our security holders will be able to sell shares in the public market subject to any restrictions under the securities laws. In addition, Morgan Stanley and Merrill Lynch may, in their discretion, release all or some portion of the shares subject to lock-up agreements prior to the expiration of the lock-up period. See "Shares Eligible for Future Sale" for more information. Sales of a substantial number of such shares upon expiration, or the perception that such sales may occur, or early release of the lock-up, could cause our share price to fall, or make it more difficult for you to sell your common stock at a time and price that you deem appropriate.

Based on shares outstanding as of June 30, 2018, the holders of 217,201,525 shares, or approximately %, of our common stock after this offering, will have rights, subject to some conditions, to require us to file registration statements covering the sale of their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. We also intend to register the offer and sale of all shares of common stock that we may issue under our equity compensation plans.

We may issue our shares of common stock or securities convertible into our common stock from time to time in connection with a financing, acquisition, investments or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and cause the trading price of our common stock to decline.

Insiders will continue to have substantial control over us after this offering, which could limit your ability to influence the outcome of key transactions, including a change of control.

Our directors, executive officers, and each of our stockholders that own greater than 5% of our outstanding common stock, in the aggregate, will beneficially own approximately % of the outstanding shares of our common stock after this offering, based on the number of shares outstanding as of June 30, 2018. As a result, these stockholders will be able to influence or control matters requiring approval by our stockholders, including the election of directors and the approval of mergers, acquisitions or other extraordinary transactions. They may also have interests that differ from yours and may vote in a manner that is adverse to your interests. This concentration of ownership may have the effect of deterring, delaying, or preventing a change of control of our company, could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company and might ultimately affect the market price of our common stock.

There is no existing market for our common stock, and we cannot assure you that a market will develop for our common stock or what the market price of our common stock will be.

Prior to this offering, there has been no public market for our common stock. We cannot predict the extent to which investor interest in our company will lead to the development of an active trading market on the Nasdaq Global Market or otherwise or how liquid that market might become. If an active trading market does not develop, you may have difficulty selling any shares of our common stock that you purchase, and the value of such shares might be materially impaired.

In addition, we cannot predict the prices at which our common stock will trade. The initial public offering price for our common stock will be determined by negotiations between us and the representatives of the

underwriters and may not be indicative of prices that will prevail in the open market following this offering. Consequently, you may not be able to sell shares of our common stock at prices equal to or greater than the price you paid in this offering.

We have broad discretion in the use of net proceeds that we receive in this offering, and if we do not use those proceeds effectively, your investment could be harmed.

The principal purposes of this offering are to create a public market for our common stock, obtain additional working capital, and facilitate our future access to the public equity markets. We intend to use the net proceeds from this offering for general corporate purposes, including working capital, sales, and marketing activities, research initiatives including enhancement of our solution, investment in technology and development and capital expenditures. We also may use a portion of the net proceeds from this offering to acquire or invest in technologies, solutions, or businesses that complement our business, although we have no present commitments, and we have not allocated specific amounts of net proceeds, to complete any such transactions or plans. Accordingly, our management will have broad discretion in the application of the net proceeds to us from this offering. Investors in this offering will need to rely upon the judgment of our management regarding the application of the proceeds. If we do not use the net proceeds that we receive in this offering effectively, our business, results of operations, and financial condition could be harmed.

We may be unable to utilize our federal net operating loss carryforwards to reduce our income taxes.

As of December 31, 2017, we had net operating loss, or NOL, carryforwards of approximately $124.9 million and $101.7 million available to reduce future taxable income, if any, for U.S. federal income tax and state income tax purposes, respectively. If not utilized, our federal and state NOL carryforwards begin to expire in 2029 and 2019, respectively. These NOL carryforwards could expire unused and be unavailable to offset future income tax liabilities. In addition, under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, and corresponding provisions of state law, if a corporation undergoes an “ownership change,” which generally occurs if the percentage of the corporation’s stock owned by 5% stockholders increases by more than 50% over a three-year period, the corporation’s ability to use its pre-change NOL carryforwards and other pre-change tax attributes to offset its post-change income may be limited. We have determined that we have experienced Section 382 ownership changes in 2010 and $1.4 million of our NOL and tax credit carryforwards are subject to limitation. In addition, we may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, including this offering, some of which may be outside of our control. If a future ownership change occurs, our ability to use our NOL tax credit carryforwards may be materially limited, which would harm our future operating results by effectively increasing our future tax obligations.

The requirements of being a public company may strain our resources, divert our management’s attention, and affect our ability to attract and retain qualified board members.

As a public company, we will be subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and will be required to comply with the applicable requirements of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, and the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the listing requirements of the Nasdaq Global Market and other applicable securities rules and regulations. Compliance with these rules and regulations will increase our legal and financial compliance costs, make some activities more difficult, time consuming, or costly and increase demand on our systems and resources. Among other things, the Exchange Act requires that we file annual, quarterly, and current reports with respect to our business and results of operations and maintain effective disclosure controls and procedures and internal controls over financial reporting. In order to maintain and, if required, improve our disclosure controls and procedures and internal controls over financial reporting to meet this standard, significant resources and management oversight may be required. As a result, management’s attention may be diverted from other business concerns, which could harm our business and results of operations. Although we have already

hired additional employees to comply with these requirements, we may need to hire even more employees in the future, which will increase our costs and expenses.

We also expect that being a public company and these new rules and regulations will make it more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

Failure to establish and maintain an effective system of internal controls could result in material misstatements of our financial statements or cause us to fail to meet our reporting obligations or fail to prevent fraud in which case, our stockholders could lose confidence in our financial reporting, which would harm our business and could negatively impact the price of our stock.

After the closing of this offering, we will be subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act and the rules and regulations of Nasdaq Global Market. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal controls over financial reporting. Commencing with the year ending December 31, 2019, we must perform system and process evaluation and testing of our internal controls over financial reporting to allow management to report on the effectiveness of our internal controls over financial reporting in our Annual Report on Form 10-K for that year, as required by Section 404 of the Sarbanes-Oxley Act, or Section 404. This will require that we incur substantial additional professional fees and internal costs to expand our accounting and finance functions and that we expend significant management efforts. Prior to this offering, we have never been required to test our internal controls within a specified period, and we are not currently in compliance with, and we cannot be certain when we will be able to implement the requirements of Section 404. As a result, we may experience difficulty in producing accurate financial statements in a timely manner.

We may discover weaknesses in our system of internal financial and accounting controls and procedures that could result in a material misstatement of our financial statements. In addition, our internal control over financial reporting will not prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud will be detected.

The rules governing the standards that must be met for our management to assess our internal control over financial reporting are complex and require significant documentation, testing, and possible remediation. If we are not able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner, or if we are unable to maintain proper and effective internal controls, we may not be able to produce timely and accurate financial statements. In addition, in connection with the future attestation process by our independent registered public accounting firm, we may encounter problems or delays in completing the implementation of any requested improvements and receiving a favorable attestation. If we cannot favorably assess the effectiveness of our internal control over financial reporting, or if our independent registered public accounting firm is unable to provide an unqualified attestation report on our internal controls, our stockholders could lose confidence in our reporting, and the market price of our stock could decline. In addition, we could be subject to sanctions or investigations by the Nasdaq Global Market, the Securities and Exchange Commission, or SEC, or other regulatory authorities.

We are an "emerging growth company," and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company" as defined in the JOBS Act and we intend to take advantage of some of the exemptions from reporting requirements that are applicable to other public companies that are not emerging growth companies, including:

- reduced obligations with respect to financial data, including presenting only two years of audited financial statements and only two years of selected financial data;
- an exception from compliance with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002;
- reduced disclosure about our executive compensation arrangements in our periodic reports, proxy statements, and registration statements;
- exemptions from the requirements of holding non-binding advisory votes on executive compensation or golden parachute arrangements; and
- exemption from complying with new or revised financial accounting standards until such time as such standards are applicable to private companies.

We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the closing of this offering, (b) in which we have total annual gross revenue of at least $1.07 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non- affiliates exceeds $700 million as of the prior June 30, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

Because the initial public offering price of our common stock will be substantially higher than the pro forma as adjusted net tangible book value per share of our outstanding common stock following this offering, new investors will experience immediate and substantial dilution.

The initial public offering price of our common stock is substantially higher than the pro forma as adjusted net tangible book value per share of our common stock immediately following this offering based on the total value of our tangible assets less our total liabilities. Therefore, if you purchase shares of our common stock in this offering, you will experience immediate dilution of $ per share, the difference between the assumed limited public offering price of $ per share, which is the midpoint of the range as set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, and the pro forma as adjusted net tangible book value per share of our common stock as of $, immediately after giving effect to the issuance of shares of our common stock in this offering. See "Dilution."

If securities or industry analysts do not publish research or reports about our business, or publish unfavorable research reports about our business, our share price and trading volume could decline.

The trading market for our common stock will, to some extent, depend on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. If one or more of the analysts who cover us publishes unfavorable commentary about us or changes their opinion of our business prospects, our share price would likely decline. If one or more of these analysts ceases coverage of or fails to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

We do not intend to pay dividends for the foreseeable future and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid any dividends on our common stock. We intend to retain any earnings to finance the operation and expansion of our business, and we do not anticipate paying any cash dividends in the future. As a result, you may only receive a return on your investment in our common stock if the market price of our common stock increases. In addition, our loan and security agreements contain restrictions on our ability to pay dividends.

Our credit facility contains covenants that may restrict our business and financing activities.

Borrowings under our credit facility are secured by substantially all of our assets. Our credit facility also restricts our ability to, among other things:

- dispose of or sell assets;
- make material changes in our business or management;
- consolidate or merge with or acquire other entities;
- incur additional indebtedness;
- incur liens on our assets;
- pay dividends or make distributions on our capital stock;
- make certain investments;
- enter into transactions with our affiliates;
- make any payment in respect of any subordinated indebtedness; and
- waive or amend any of our current intellectual property agreements or material contracts.

These restrictions are subject to certain exceptions. In addition, our loan and security agreement requires us to maintain a minimum cash balance and revenue targets. Beginning with the three months ended March 31, 2019, we are required to meet either revenue or earnings targets.

The covenants in our credit facility, as well as any future financing agreements that we may enter into, may restrict our ability to finance our operations, engage in, expand, or otherwise pursue our business activities and strategies. Our ability to comply with these covenants may be affected by events beyond our control, and future breaches of any of these covenants could result in a default under our credit facility agreements. If not waived, future defaults could cause all of the outstanding indebtedness under our credit facility agreement to become immediately due and payable and terminate all commitments to extend further credit.

If we do not have or are unable to generate sufficient cash available to repay our debt obligations when they become due and payable, either upon maturity or in the event of a default, we may not be able to obtain additional debt or equity financing on favorable terms, if at all, which may negatively impact our ability to operate our business.

Our charter documents and Delaware law could discourage takeover attempts and lead to management entrenchment.

Our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect upon closing of this offering contain provisions that could delay or prevent a change in control of our company. These provisions could also make it difficult for stockholders to elect directors that are not nominated by the

current members of our board of directors or take other corporate actions, including effecting changes in our management. These provisions include:

- a classified board of directors with three-year staggered terms, which could delay the ability of stockholders to change the membership of a majority of our board of directors;
- the ability of our board of directors to issue shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquiror;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of our board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by a majority vote of our entire board of directors, the chairman of our board of directors, or our chief executive officer, which could delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors;
- the requirement for the affirmative vote of holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of the voting stock, voting together as a single class, to amend the provisions of our amended and restated certificate of incorporation relating to the management of our business or our amended and restated bylaws, which may inhibit the ability of an acquiror to effect such amendments to facilitate an unsolicited takeover attempt; and
- advance notice procedures with which stockholders must comply to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of us.

In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time.

A Delaware corporation may opt out of this provision by express provision in its original certificate of incorporation or by amendment to its certificate of incorporation or bylaws approved by its stockholders. However, we have not opted out of, and do not currently intend to opt out of, this provision.

These and other provisions in our amended and restated certificate of incorporation, amended and restated bylaws and Delaware law could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by our then-current board of directors, including delay or impede a merger, tender offer, or proxy contest involving our company. The existence of these provisions could negatively affect the price of our common stock and limit opportunities for you to realize value in a corporate transaction.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America will be the exclusive forums for substantially all disputes between us and our stockholders, which restricts our stockholders' ability to bring a lawsuit against us or our directors, officers, or employees in jurisdictions other than Delaware and federal district courts.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf; any action

asserting a breach of a fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation, or our amended and restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. Our amended and restated certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees. Some companies that adopted a similar federal district court forum selection provision are currently subject to a suit in the Chancery Court of Delaware by stockholders who assert that the provision is not enforceable. If a court were to find either choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business.

INFORMATION REGARDING FORWARD-LOOKING STATEMENTS

This prospectus includes forward-looking statements. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, strategy and plans, industry environment, potential growth opportunities, and our expectations for future operations, are forward-looking statements. The words "believe," "may," "will," "estimate," "continue," "anticipate," "design," "intend," "expect," "could," "plan," "potential," "predict," "seek," "should," "would," or the negative version of these words and similar expressions are intended to identify forward-looking statements. We have based these forward-looking statements on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, strategy, short- and long-term business operations and objectives, and financial needs. The forward-looking statements are contained principally in "Prospectus Summary," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business." These forward-looking statements include, but are not limited to, statements concerning the following:

- our expectation that, for the foreseeable future, a significant portion of our revenues will be derived from sales of the iFuse Implant System, or iFuse;
- our ability to expand our sales and marketing capabilities to increase demand for iFuse, expand geographically, and obtain favorable coverage and reimbursement determinations from third-party payors;
- our estimates of our market opportunity;
- developments or disputes concerning our intellectual property or other proprietary rights;
- competition in the markets we serve;
- our expectations of the reliability and performance of iFuse;
- our expectations of the benefits to patients, providers, and payors of iFuse;
- our reliance on a limited number of suppliers, including sole source suppliers, which may impact the availability of replacement instruments and materials;
- the factors we believe drive demand for iFuse and our ability to sustain or increase such demand;
- our ability to develop additional revenue opportunities, including new devices;
- the scope of protection we establish and maintain for intellectual property rights covering iFuse and any other device we may develop;
- our estimates regarding our costs and risks associated with our international operations and international expansion;
- our ability to retain and recruit key personnel and expand our sales force;
- our expectations regarding acquisitions and strategic operations;
- our ability to fund our working capital requirements;
- our compliance with, and the cost of, federal, state, and foreign regulatory requirements;
- the factors that may impact our financial results; and
- anticipated trends and challenges in our business and the markets in which we operate.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in the section "Risk Factors." Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of

factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance, or events and circumstances reflected in the forward-looking statements will be achieved or occur. Moreover, except as required by law, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to actual results or to changes in our expectations.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

You should read this prospectus and the documents that we reference in this prospectus and have filed with the Securities and Exchange Commission as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance, and events and circumstances may be materially different from what we expect.

MARKET, INDUSTRY, AND OTHER DATA

This prospectus contains estimates, projections, and other information concerning our industry, our business, and the markets for our products and product candidates, including data regarding the estimated size of those markets for our products and product candidates, their projected growth rates, the perceptions and preferences of surgeons and patients regarding certain procedures, surgeon and patient data, as well as data regarding market research, estimates, and forecasts prepared by our management. We obtained the industry, market, and other data throughout this prospectus from our own internal estimates and research, as well as from industry publications and research, surveys, and studies conducted by third parties.

Information is based on estimates, forecasts, projections, market research, or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances that are assumed in this information. In some cases, we do not expressly refer to the sources from which this data is derived.

USE OF PROCEEDS

We estimate that the net proceeds from this offering of shares of common stock will be approximately $ million, or $ million if the underwriters exercise their option to purchase additional shares in full, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus.

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) our net proceeds by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. Each increase (decrease) by 1,000,000 shares in the number of shares offered by us would increase (decrease) the net proceeds from this offering by $ million, assuming the assumed initial public offering price remains the same, after deducting underwriting discounts and commissions.

We expect to use the net proceeds from this offering, as follows:

- approximately $ million for sales and marketing activities to support ongoing commercialization of the iFuse Implant System, including, but not limited to, expansion of our sales force, additional medical affairs and educational efforts, and expanding our international sales presence; and
- the remainder, if any, for working capital and general corporate purposes, including research and development and clinical studies to bring new enhancements to the existing product offering.

We may also use a portion of our net proceeds to acquire or invest in complementary products, technologies, or businesses; however, we currently have no agreements or commitments to complete any such transactions.

As of the date of this prospectus, since we cannot specify with certainty all of the particular uses of the net proceeds, our management will have broad discretion over the use of the net proceeds from this offering. Pending the use of the proceeds from this offering, we intend to invest the net proceeds in short-term interest-bearing investment-grade securities, certificates of deposit or government securities.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock, and we do not currently intend to pay any cash dividends on our capital stock in the foreseeable future. In addition, our credit facility with Biopharma Credit Investments IV Sub LP, or Pharmakon, restricts our ability to pay dividends on our capital stock. We currently intend to retain all available funds and any future earnings to support operations and to finance the growth and development of our business. Any future determination to pay dividends will be made at the discretion of our board of directors subject to applicable laws, and will depend upon, among other factors, our results of operations, financial condition, contractual restrictions, and capital requirements. Our future ability to pay cash dividends on our capital stock may also be limited by the terms of any future debt or preferred securities or future credit facility.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of June 30, 2018:

- on an actual basis;
- on a pro forma basis to reflect:
  - the conversion of all outstanding shares of our preferred stock into an aggregate of 217,201,525 shares of common stock immediately prior to the closing of this offering;
  - the issuance of shares of common stock upon the automatic net exercise of outstanding warrants, with an exercise price of $0.51 per share, immediately prior to the closing of this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus;
  - the reclassification of our preferred stock warrant liability to additional paid-in capital immediately prior to the closing of this offering; and
  - the filing and effectiveness of our amended and restated certificate of incorporation upon the closing of this offering; and
- on a pro forma as adjusted basis to give further effect to the sale of shares of common stock in this offering assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

You should read this information together with our consolidated financial statements and related notes appearing elsewhere in this prospectus and the information set forth in "Selected Consolidated Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	As of June 30, 2018		
	Actual	Pro Forma(1)	Pro Forma As Adjusted(1)
	(in thousands, except for share and per share amounts)		
Cash and cash equivalents	$ 16,233	$	$
Redeemable convertible preferred stock warrant liability	$ 646	$	$
Total long-term borrowings(2)	38,834		
Redeemable convertible preferred stock, $0.0001 par value; 217,885,520 shares authorized, 213,689,844 shares issued and outstanding, actual; no shares authorized, issued and outstanding, pro forma and pro forma as adjusted	118,548		
Stockholders' equity (deficit):			
Preferred stock, $0.0001 par value; no shares authorized, issued or outstanding, actual; 5,000,000 shares authorized, no shares issued or outstanding, pro forma and pro forma as adjusted			
Common stock, $0.0001 par value; 348,000,000 shares authorized, 66,734,168 shares issued and outstanding, actual; 100,000,000 shares authorized, shares issued and outstanding, pro forma; and 100,000,000 shares authorized, shares issued and outstanding, pro forma as adjusted	7		
Additional paid-in capital	10,927		
Accumulated other comprehensive income	435		
Accumulated deficit	(147,072)		
Total stockholders' (deficit) equity	(135,703)		
Total capitalization	$ 22,325	$	$

(1) Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) each of pro forma as adjusted cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. An increase (decrease) of 1,000,000 shares in the number of shares offered by us would increase (decrease) each of pro forma as adjusted cash and cash equivalents, additional paid-in-capital, total stockholders' equity and total capitalization by $ million, assuming that the assumed initial price to the public remains the same, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. The pro forma as adjusted information discussed above is illustrative only, and we will adjust this information based on the actual initial public offering price, number of shares offered and other terms of this offering determined at pricing.

(2) Total borrowings consist of $40.0 million of principal, net of discount of $1.2 million.

The number of shares of common stock to be outstanding after this offering is based on shares of common stock outstanding as of June 30, 2018, and excludes:

- 52,224,031 shares of common stock issuable upon the exercise of options outstanding as of June 30, 2018, with a weighted-average exercise price of $0.23 per share;
- 4,141,369 shares of common stock, as converted, issuable upon the exercise of warrants outstanding as of June 30, 2018, with a weighted-average exercise price of $0.48 per share;

- 867,474 additional shares of common stock reserved for future issuance under our 2008 Stock Plan, which shares will cease to be available for issuance at the time our 2018 Equity Incentive Plan becomes effective upon the execution of the underwriting agreement for this offering;
- 46,377,691 shares of common stock reserved for future issuance under our 2018 Equity Incentive Plan, as well as any increases in the number of shares of common stock reserved for future issuance under this plan, which will become effective upon the execution of the underwriting agreement for this offering; and
- 9,275,538 shares of common stock reserved for future issuance under our 2018 Employee Stock Purchase Plan, as well as any increases in the number of shares of common stock reserved for future issuance under this plan, which will become effective upon the execution of the underwriting agreement for this offering.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the assumed initial public offering price per share and the pro forma as adjusted net tangible book value per share of our common stock after this offering.

Historical net tangible book value (deficit) per share represents our total tangible assets less our liabilities and preferred stock that is not included in equity divided by the total number of shares outstanding. As of June 30, 2018, our historical net tangible book value (deficit) was $(135.7) million, or $(2.03) per share.

Our pro forma net tangible book value as of June 30, 2018, was $ million, or $ per share after giving effect to (i) the conversion of all outstanding shares of our preferred stock into an aggregate of 217,201,525 shares of common stock; (ii) the issuance of shares of common stock upon the automatic net exercise of outstanding warrants, with an exercise price of $0.51 per share, immediately prior to the closing of this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus; (iii) the reclassification of our preferred stock warrant liability to additional paid-in capital immediately prior to the closing of this offering.

After giving further effect to receipt of the net proceeds of our sale of shares of common stock, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting underwriting discounts and commissions and estimated offering expenses, our pro forma as adjusted net tangible book value as of June 30, 2018, would have been approximately $ million, or $ per share. This represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to our existing stockholders and an immediate dilution of $ per share to our existing stockholders and an immediately dilution of $ per share to investors purchasing common stock in this offering.

The following table illustrates this dilution to new investors on a per share basis:

Assumed initial public offering price per share		$
Historical net tangible book value (deficit) per share as of June 30, 2018	$(2.03)	
Pro forma increase in net tangible book value (deficit) per share attributable to the conversion of our preferred stock and preferred stock warrants		
Pro forma net tangible book value per share as of June 30, 2018		
Increase in net tangible book value per share attributable to new investors purchasing shares in this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution per share to new investors participating in this offering		$

If the underwriters' option to purchase additional shares in this offering is exercised in full, the pro forma as adjusted net tangible book value would be $ per share, the increase in the pro forma as adjusted net tangible book value per share for existing stockholders would be $ per share and the dilution to new investors participating in this offering would be $ per share.

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted net tangible book value, by $ per share and the dilution per share to new investors by $ per share, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We may also increase or decrease the number of shares we are offering. An increase (decrease) of 1,000,000 shares in the number of shares we are offering would increase (decrease) our pro forma as adjusted net tangible book value by $ million, or $ per share, and the dilution per share to investors in this offering by $ per share, assuming that the assumed initial public offering price remains the same, after deducting underwriting discounts and commissions and estimated offering expenses. The pro forma information discussed above is illustrative only and will change based on the actual initial public offering price, number of shares and other terms of this offering determined at pricing.

The table below summarizes, as of June 30, 2018, on the pro forma basis described above, the number of shares of our common stock, the total consideration, and the average price per share (1) paid to us by our existing stockholders and (2) to be paid by new investors participating in this offering assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, before deducting underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Weighted-Average Price Per Share
	Number	Percent	Amount	Percent	
			(in thousands)		
Existing stockholders		%	$	%	$
New investors					
Total		100.0%	$	100.0%	

In addition, if the underwriters' option to purchase additional shares is exercised in full, the number of shares held by existing stockholders will be reduced to % of the total number of shares of common stock to be outstanding upon closing of this offering, and the number of shares of common stock held by new investors participating in this offering will be further increased to % of the total number of shares of common stock to be outstanding upon closing of the offering.

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) total consideration paid by new investors by $ million and increase (decrease) the percent of total consideration paid by new investors by %, assuming the number of shares we are offering, as set forth on the cover page of this prospectus, remains the same. We may also increase or decrease the number of shares we are offering. An increase (decrease) of 1,000,000 in the number of shares offered by us would increase (decrease) total consideration paid by new investors by $ million, assuming that the assumed initial price to the public remains the same.

The number of shares of common stock to be outstanding after this offering excludes:

- 52,224,031 shares of common stock issuable upon the exercise of options outstanding as of June 30, 2018, with a weighted-average exercise price of $0.23 per share;
- 4,141,369 shares of common stock, as converted, issuable upon the exercise of warrants outstanding as of June 30, 2018, with a weighted-average exercise price of $0.48 per share;
- 867,474 additional shares of common stock reserved for future issuance under our 2008 Stock Plan, which shares will cease to be available for issuance at the time our 2018 Equity Incentive Plan becomes effective upon the execution of the underwriting agreement for this offering;
- 46,377,691 shares of common stock reserved for future issuance under our 2018 Equity Incentive Plan, as well as any increases in the number of shares of common stock reserved for future issuance under this plan, which will become effective upon the execution of the underwriting agreement for this offering; and

- 9,275,538 shares of common stock reserved for future issuance under our 2018 Employee Stock Purchase Plan, as well as any increases in the number of shares of common stock reserved for future issuance under this plan, which will become effective upon the execution of the underwriting agreement for this offering.

To the extent that any outstanding stock options or warrants are exercised, new options are issued under our stock-based compensation plans, or we issue additional shares of common stock in the future, there will be further dilution to investors participating in this offering. If all outstanding options under our 2008 Stock Plan as of June 30, 2018 and all outstanding warrants as of June 30, 2018 (other than warrants that will be automatically net exercised immediately prior to the closing of this offering) were exercised for cash, then our existing stockholders, including the holders of these options and warrants, would own % and our new investors would own % of the total number of shares of our common stock outstanding upon the closing of this offering, respectively. In such event, the total consideration paid by our existing stockholders, including the holders of these options and warrants, would be $, or %, the total consideration paid by our new investors would be $, or %, the average price per share paid by our existing stockholders would be $ and the average price per share paid by our new investors would be $.

SELECTED CONSOLIDATED FINANCIAL DATA

The following selected consolidated financial data should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and related notes included within this prospectus. The consolidated statements of operations data for the years ended December 31, 2016 and 2017, and the consolidated balance sheet data at December 31, 2016 and 2017, are derived from our audited consolidated financial statements and related notes included elsewhere in this prospectus. The consolidated statements of operations data for the six months ended June 30, 2017 and 2018, and the consolidated balance sheet data at June 30, 2018, are derived from our unaudited consolidated financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results to be expected in the future and our results for the six months ended June 30, 2018 are not necessarily indicative of the results that may be expected for the full fiscal year.

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
	(in thousands, except share and per share data)			
Consolidated Statements of Operations Data:				
Revenue	$ 42,101	$ 47,983	$ 22,531	$ 26,375
Cost of goods sold	5,165	5,112	2,566	2,230
Gross profit	36,936	42,871	19,965	24,145
Operating expenses:				
Sales and marketing	35,215	41,646	21,130	21,285
Research and development	6,380	5,513	2,768	2,502
General and administrative	12,906	13,062	6,737	4,972
Total operating expenses	54,501	60,221	30,635	28,759
Loss from operations	(17,565)	(17,350)	(10,670)	(4,614)
Interest and other income (expense), net:				
Interest income	71	175	73	130
Interest expense	(3,308)	(6,204)	(1,920)	(2,544)
Other income (expense), net	213	340	66	(320)
Net loss	(20,589)	(23,039)	(12,451)	(7,348)
Other comprehensive income:				
Changes in foreign currency translation	67	(70)	(35)	33
Comprehensive loss	$ (20,522)	$ (23,109)	$ (12,486)	$ (7,315)
Net loss per common share, basic and diluted(1)	$ (0.35)	$ (0.37)	$ (0.20)	$ (0.11)
Weighted-average common shares used to compute basic and diluted net loss per common share(1)	59,659,307	62,411,906	62,024,861	64,862,952
Pro forma net loss per common share, basic and diluted (unaudited)(1)		$		$
Pro forma weighted-average number of common shares used to compute basic and diluted net loss per share (unaudited)(1)				

(1) See Note 14 to our consolidated financial statements included elsewhere in this prospectus for the method used to calculate net loss per common share, basic and diluted, and pro forma net loss per common share, basic and diluted, and weighted-average number of shares used in the computation of the per share amounts.

	As of December 31, 2016	As of December 31, 2017	As of June 30, 2018
		(in thousands)	
Consolidated Balance Sheet Data:			
Cash and cash equivalents	$ 27,900	$ 22,408	$ 16,233
Working capital	22,938	26,091	20,040
Total assets	39,436	35,834	29,913
Redeemable convertible preferred stock warrant liability	588	422	646
Total long-term borrowings	29,310	38,704	38,834
Total liabilities	35,048	46,664	47,068
Redeemable convertible preferred stock	113,121	118,548	118,548
Total stockholders' deficit	(108,733)	(129,378)	(135,703)

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with "Selected Consolidated Financial Data" and our consolidated financial statements and related notes included elsewhere in this prospectus. This discussion and other parts of this prospectus contain forward-looking statements that involve risks, uncertainties, and assumptions, such as our plans, objectives, expectations, intentions, and beliefs. Our actual results could differ materially from those discussed in these forward-looking statements. Some of the numbers included herein have been rounded for convenience of presentation. Factors that could cause or contribute to such differences include, but are not limited to, those identified below and those discussed in the section "Risk Factors" included elsewhere in this prospectus.

Overview

We are a medical device company that has pioneered a proprietary minimally invasive surgical implant system, which we call iFuse, to fuse the sacroiliac joint to treat sacroiliac joint dysfunction that often causes severe lower back pain. Since we introduced iFuse in 2009, more than 33,000 procedures have been performed by over 1,600 surgeons, in the United States and 33 other countries. Published clinical studies have shown that 15% to 30% of all chronic lower back pain is associated with the sacroiliac joint. We believe iFuse is currently used in the majority of minimally invasive surgical fusions of the sacroiliac joint in the United States.

The two sacroiliac joints are the largest joints in the body and connect the sacrum, near the base of the spine, to the iliac bones, the two major bones of the pelvis. The iFuse system includes a series of patented triangular implants, the instruments we have developed to enable the procedure, as well as the diagnostic and surgical techniques we have developed to enable physicians to perform the procedure. We introduced our second generation implant, the iFuse-3D, in 2017. We market our products with a direct sales force and a number of distributors in the United States, and with a combination of a direct sales force and distributors in other countries.

We have incurred net losses since our inception in 2008. During 2016 and 2017 and for the six months ended 2018 we had net losses of $20.6 million, $23.0 million, and $7.3 million, respectively. As of June 30, 2018, we had an accumulated deficit of $147.1 million. To date, we have financed our operations primarily through private placements of equity securities, certain debt-related financing arrangements, and sales of our products. We have devoted substantially all of our resources to research and development of our products, reimbursement-related initiatives, sales and marketing activities, and clinical, quality assurance, and regulatory matters for our products.

Factors Affecting Results of Operations

Coverage and Reimbursement

As of July 31, 2018, U.S. payors covering 250 million lives reimburse for iFuse, 115 million of which are covered by private payors. There are a number of large and small private payors, including Aetna, Cigna, Humana, and Anthem, that are not yet reimbursing for the procedure. Some of these non-covering payors are reevaluating coverage given the latest data, but there can be no assurance they will reach positive coverage decisions.

Prior to our launch of iFuse in 2009, Medicare and most private insurance companies reimbursed surgeons routinely for sacroiliac joint fusions, which were primarily invasive. However, effective July 1, 2013, the AMA's Editorial Panel effectively restricted reimbursement for minimally invasive sacroiliac joint fusion because they considered the published clinical evidence at the time to be inadequate.

Subsequently, as a result of the growing number of published clinical studies demonstrating the effectiveness and safety of iFuse, along with the support of several professional medical specialty societies and

leading academic surgeons, the AMA Editorial Panel established a new reimbursement code for minimally invasive sacroiliac joint fusion surgery, effective January 1, 2015. However, the new code did not immediately lead to positive coverage decisions by payors—in many cases, the payors wanted additional published evidence before deciding to cover the procedure. As a result, positive reimbursement decisions covering the procedure have occurred over the last few years, and some payors are still in the process of making decisions based on the most recent evidence.

Coverage decisions for this code are made independently by each private insurance company and each of the seven regional Medicare Administrative Contractors that help manage Medicare. The process of obtaining coverage is laborious. As of June 30, 2016, because of the iFuse clinical evidence, all Medicare Administrative Contractors were covering the procedure. At the time, very few private payors were covering. However, as of July 31, 2018, 39 of the largest 66 private payors were covering regularly, or had announced coverage for, the iFuse procedure, while the remaining private payors were reevaluating their coverage policies. Of these, 23 private payors have issued positive coverage policies exclusive to iFuse for sacroiliac joint fusion because of the clinical evidence. Seventeen of these exclusive coverage policies have published since January 1, 2018, which we believe has contributed to our accelerating sales growth in our fiscal year 2018.

Our Sales Force

We market and sell iFuse primarily through a direct sales force and a number of third-party distributors. Our target customer base includes approximately 7,500 surgeons who perform spine and/or pelvic surgery, including orthopedic spine surgeons, neurosurgeons, general orthopedic surgeons, and orthopedic trauma surgeons.

Our direct sales organization in the United States is comprised of seven sales regions. Each region is comprised of a number of territory sales managers who act as the primary customer contact. Our territory sales managers have extensive training and experience selling medical devices for spine problems and pain management, generally focusing on emerging technologies and markets. As of June 30, 2018, our territory sales managers were led by seven regional sales managers who reported to our Vice President of U.S. Sales. The Vice President of U.S. Sales reports to our Chief Commercial Officer. As of June 30, 2018, our U.S. sales force consisted of 45 sales representatives directly employed by us and 30 third-party distributors.

In addition to general sales and marketing training, we provide our sales organization with comprehensive, hands-on cadaveric and dry-lab training sessions focusing on the clinical benefits of our products and how to use them. We believe our robust training and professional development programs have been an important component of our success to date and will help support our anticipated future growth. We expect to continue to increase the size of our sales organization in order to increase sales and market penetration and to provide the significant, ongoing level of customer support required by our sales and marketing strategy.

As of June 30, 2018, we had 28 employees working in our European operations, and have established operations in Italy (2010), Germany (2014), and the United Kingdom (2015). As of June 30, 2018, our international sales force consisted of 18 sales representatives directly employed by us and 27 exclusive third-party distributors, which together had sales in 33 countries through June 30, 2018. We anticipate continuing to build our operations in the major European countries while establishing distributor arrangements in smaller ones. We intend to follow a similar model in Europe to the one established in the United States, working with internationally recognized healthcare professional experts as we expand our training and reimbursement activities. As of June 30, 2018, beyond Europe and the United States, surgeons had performed the first iFuse procedures in Australia, Cayman Islands, Hong Kong, Israel, Japan, Kuwait, New Zealand, Taiwan, Turkey, and Saudi Arabia.

We have in the past and expect in the future to enter into different compensation arrangements with our sales professionals, which include minimum guaranteed commissions. This has impacted our compensation expenses in the past and we expect it will in the future.

Components of Results of Operations

Revenue

We derive substantially all our revenue from sales of iFuse. Revenue from sales of iFuse fluctuate based on volume of cases (procedures performed), discounts, mix of international and U.S. sales, and the number of implants used for a particular patient. Similar to other orthopedic companies, our revenue can also fluctuate from quarter to quarter due to a variety of factors, including reimbursement, sales force changes, physician activities, and seasonality. Our revenue from international sales may also be significantly impacted by fluctuations in foreign currency exchange rates between the U.S. dollar (our reporting currency) and the local currency.

Cost of Goods Sold, Gross Profit, and Gross Margin

We utilize third-party manufacturers for production of the iFuse implants and instrument sets. Cost of goods sold consists primarily of costs of the components of iFuse implants and instruments, scrap and inventory obsolescence, as well as distribution-related expenses such as logistics and shipping costs. We anticipate that our cost of goods sold will increase in absolute dollars as case levels increase.

In accordance with the Patient Protection and Affordable Care Act, effective January 1, 2013, we began to incur an excise tax on sales of medical devices in the United States. Effective December 2015, the Act was amended to include a provision to suspend the tax on medical devices through 2017. In January 2018, the suspension on the tax on medical devices was further extended through 2019. In July 2018, the U.S. House of Representatives voted to repeal this tax. The U.S. Senate is expected to vote on the matter in the fourth quarter of 2018. Our gross margins have been and will continue to be affected by a variety of factors, including the cost to have our products manufactured for us, pricing pressure from increasing competition, and the factors described above impacting our revenue. Our gross margins are typically higher on products we sell directly as compared to products we sell through third-party distributors. As a result, changes in the mix of direct versus distributor sales can directly influence gross margin.

Operating Expenses

Our operating expenses consist of sales and marketing, research and development, and general and administrative expenses. Personnel costs are the most significant component of operating expenses and consist of salaries, sales commissions and other cash and stock-based compensation related expenses. We expect operating expenses to increase in absolute dollars, as we continue to invest and grow our business, but decrease as a percentage of revenue. In September 2017, we implemented cost-saving measures, which reduced our operational expenses though headcount reductions, reduced project spending, and more targeted marketing and surgeon training activities.

Sales and Marketing Expenses

Sales and marketing expenses primarily consist of salaries, stock-based compensation expense, and other compensation related costs, for personnel employed in sales, marketing, medical affairs, and professional education departments. In addition, our sales and marketing expenses include commissions and bonuses, generally based on a percentage of sales, to our sales managers and directors, direct sales representatives and third-party distributors. We expect our sales and marketing expenses to increase in absolute dollars with the continued commercialization of our current and future products and continued investment in our global sales organization, including broadening our relationships with third-party distributors, expanding exclusivity commitments among them and increasing the number of our direct sales representatives, especially with increased reimbursement and adoption in the United States. Our sales and marketing expenses may fluctuate from period to period due to the seasonality of our business and as we continue to add direct sales representatives in new territories.

Research and Development Expenses

Our research and development expenses primarily consist of engineering, product development, clinical and regulatory expenses (including clinical study expenses), and consulting services, outside prototyping services, outside research activities, materials, depreciation, and other costs associated with development of our products. Research and development expenses also include related personnel and consultants' compensation and stock-based compensation expense. We expense research and development costs as they are incurred. We expect research and development expense to increase in absolute dollars as we develop new products, add research and development personnel, and undergo clinical activities, including more clinical studies to gain additional regulatory clearances and wider surgeon adoption.

General and Administrative Expenses

General and administrative expenses primarily consist of compensation, stock-based compensation expense, and other costs for finance, accounting, legal, compliance, reimbursement, and administrative matters. We expect our general and administrative expenses to increase in absolute dollars to support the growth of our business. We also expect to incur additional general and administrative expenses as a result of operating as a public company, including but not limited to: expenses related to compliance with the rules and regulations of the Securities and Exchange Commission and those of the Nasdaq Global Market on which our securities will be traded; additional insurance expenses; investor relations activities; and other administrative and professional services. While we expect the general and administrative expenses to increase in absolute dollars, we anticipate that it will decrease as a percentage of revenue over time.

Interest Expense

Interest expense is related to borrowings and includes the amortization of debt discounts derived from the issuance of warrants.

Other Income (Expense), Net

Other income (expense), net consists primarily of the changes in fair value of our preferred stock warrant liability and net gain (loss) on foreign currency transactions. In connection with this initial public offering, we expect that our preferred stock warrant liability will be settled.

Results of Operations

The following table sets forth our results of operations for the period presented:

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
	(in thousands)			
Consolidated Statements of Operations Data:				
Revenue	$ 42,101	$ 47,983	$ 22,531	$ 26,375
Cost of goods sold	5,165	5,112	2,566	2,230
Gross profit	36,936	42,871	19,965	24,145
Operating expenses:				
Sales and marketing	35,215	41,646	21,130	21,285
Research and development	6,380	5,513	2,768	2,502
General and administrative	12,906	13,062	6,737	4,972
Total operating expenses	54,501	60,221	30,635	28,759
Loss from operations	(17,565)	(17,350)	(10,670)	(4,614)
Interest and other income (expense), net:				
Interest income	71	175	73	130
Interest expense	(3,308)	(6,204)	(1,920)	(2,544)
Other income (expense), net	213	340	66	(320)
Net loss	$ (20,589)	$(23,039)	$ (12,451)	$ (7,348)

The following table sets forth our results of operations as a percentage of revenue:

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
Consolidated Statements of Operations Data:				
Revenue	100%	100%	100%	100%
Cost of goods sold	12	11	11	8
Gross profit	88	89	89	92
Operating expenses:				
Sales and marketing	84	87	94	81
Research and development	15	11	12	9
General and administrative	31	27	30	19
Total operating expenses	130	125	136	109
Loss from operations	(42)	(36)	(47)	(17)
Interest and other income (expense), net:				
Interest income	—	—	—	—
Interest expense	(8)	(13)	(8)	(10)
Other income (expense), net	1	1	0	(1)
Net loss	(49)%	(48)%	(55)%	(28)%

The following table sets forth our United States and international revenue:

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
	(in thousands)			
United States	$ 38,791	$ 43,351	$ 20,385	$ 23,456
International	3,310	4,632	2,146	2,919
	$ 42,101	$ 47,983	$ 22,531	$ 26,375

The following table sets forth our United States and international revenue as a percentage of our total revenue:

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
United States	92%	90%	90%	89%
International	8	10	10	11
	100%	100%	100%	100%

Comparison of the Six Months Ended June 30, 2017 and 2018

Revenue, Cost of Goods Sold, Gross Profit, and Gross Margin

	Six Months Ended June 30,			
	2017	2018	$ Change	% Change
	(in thousands, except for percentages)			
Revenue	$ 22,531	$ 26,375	$ 3,844	17%
Cost of goods sold	2,566	2,230	(336)	(13)%
Gross profit	$ 19,965	$ 24,145	$ 4,180	21%
Gross margin	89%	92%		

Revenue. Revenue increased $3.8 million, or 17%, for the six months ended June 30, 2018 as compared to the six months ended June 30, 2017. The majority of the increase is due to $3.0 million of growth from domestic sales as a result of higher sales force productivity and improved U.S. reimbursement coverage. In addition, international revenue increased $0.8 million as a result of an expanded international direct sales force and improving reimbursement coverage in Europe.

Cost of Goods Sold, Gross Profit, and Gross Margin. Total cost of goods sold decreased $0.3 million, or 13%, for the six months ended June 30, 2018 as compared to the six months ended June 30, 2017. The decrease in cost of goods sold is primarily due to $0.5 million of cost control measures related to reduced headcount in operations that more than offset the increase in direct product costs from higher case volumes. Gross profit increased $4.2 million, or 21%, to $24.1 million due to higher revenue and lower cost of goods sold.

Operating Expenses

	Six Months Ended June 30, 2017	2018	$ Change	% Change
	(in thousands, except for percentages)			
Sales and marketing	$ 21,130	$ 21,285	$ 155	1%
Research and development	2,768	2,502	(266)	(10)%
General and administrative	6,737	4,972	(1,765)	(26)%
Total operating expenses	$ 30,635	$ 28,759	$ (1,876)	

Sales and Marketing Expenses. Sales and marketing expenses increased $0.2 million, or 1%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017. The increase was primarily due to $0.9 million in increased salaries, commissions, and related expenses due to an increase in the number of sales representatives hired late in the first quarter of 2017 to support the growth of our business. This increase was largely offset by a $0.5 million decrease in the level of spending on general marketing costs related to a shift in marketing effort from print media to less expensive digital media, as well as other cost control measures that were put in place at the end of the third quarter of 2017. The increased compensation costs were also offset by a $0.3 million decrease in surgeon training costs, including training facilities and consulting surgeon costs due to continued focus on maximizing class sizes to more fully leverage training events.

Research and Development Expenses. Research and development expenses decreased $0.3 million, or 10%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017. The decrease was primarily due to a $0.3 million reduction in compensation expense related to cost control measures put in place at the end of the third quarter 2017.

General and Administrative Expenses. General and administrative expenses decreased $1.8 million, or 26%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017. The decrease was primarily due to a decrease of $0.5 million in compensation expense due to the write-off of principal and interest due on a promissory note from our Chief Executive Officer in the first half of 2017, with no similar write-offs in the six months ended June 30, 2018. In addition, there were decreases of $0.4 million in legal costs for patent and general corporate matters, $0.3 million in audit and accounting fees, $0.2 million in compensation expense as a result of a decrease in headcount, $0.1 million in travel expense, and $0.2 million of recoveries of accounts receivable previously written off during the six months ended June 30, 2017.

Interest and Other Income (Expense), Net

	Six Months Ended June 30, 2017	2018	$ Change	% Change
	(in thousands except for percentages)			
Interest income	$ 73	$ 130	$ 57	78%
Interest expense	(1,920)	(2,544)	(624)	33
Other income (expense), net	66	(320)	(386)	NM

Interest Income. Interest income increased $0.1 million, or 78%, for the six months ended June 30, 2018 compared to the six months ended June 30, 2017 due to investment of excess cash in money market funds.

Interest Expense. Interest expense increased $0.6 million, or 33%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to a $10.0 million increase in the level of borrowings associated with closing a new debt arrangement in October 2017.

Other Income (Expense), Net. Other income (expense), net, decreased $0.4 million for the six months ended June 30, 2018, compared to the six months ended June 30, 2017 primarily due to losses related to the change in the fair value of our preferred stock warrants outstanding, which are accounted for as a liability and revalued at each reporting period, and foreign currency exchange losses.

Comparison of the Years Ended December 31, 2016 and 2017

Revenue, Cost of Goods Sold, Gross Profit, and Gross Margin

	Years Ended December 31,			
	2016	2017	$ Change	% Change
	(in thousands except for percentages)			
Revenue	$ 42,101	$ 47,983	$ 5,882	14%
Cost of goods sold	5,165	5,112	(53)	(1)%
Gross profit	$ 36,936	$ 42,871	$ 5,935	16%
Gross margin	88%	89%		

Revenue. Revenue increased $5.9 million, or 14%, from 2016 to 2017. The increase of $5.9 million was primarily due to an increase of $4.6 million from growth of domestic revenue from additional hiring of sales personnel and improved U.S. reimbursement coverage. In addition, we had $1.3 million from growth of international revenue from our branch in the United Kingdom, increased sales force productivity in Germany, and new business in Australia and Taiwan.

Cost of Goods Sold, Gross Profit, and Gross Margin. Total cost of goods sold decreased $0.1 million, or 1%, from 2016 to 2017. This is primarily due to the reduction in inventory write-offs from improved inventory level management, offset by the increase in direct product costs from higher case volumes. Gross profit increased $5.9 million, or 16%, to $42.9 million from 2016 to 2017 due to higher revenue and relatively flat cost of goods sold.

Operating Expenses

	Years Ended December 31,			
	2016	2017	$ Change	% Change
	(in thousands except for percentages)			
Sales and marketing	$ 35,215	$ 41,646	$ 6,431	18%
Research and development	6,380	5,513	(867)	(14)%
General and administrative	12,906	13,062	156	1%
Total operating expenses	$ 54,501	$ 60,221	$ 5,720	

Sales and Marketing Expenses. Sales and marketing expenses increased $6.4 million, or 18%, from 2016 to 2017 from increased efforts to support higher revenues. The increase was primarily due to $4.7 million in increased salaries, guaranteed minimum commissions, and related expenses from higher headcount, $0.9 million in increased commissions due to higher revenues, $0.7 million in increased general marketing expenses, and $0.2 million in surgeon training programs.

Research and Development Expenses. Research and development expenses decreased $0.9 million, or 14%, from 2016 to 2017. The decrease was partially due to a $0.4 million reduction in salaries and related expenditures, from lower headcount, a $0.3 million reduction in clinical trial expense as the INSITE and SIFI studies mature, and a decrease of $0.2 million in reduced consulting expense from lower engineering project spending.

General and Administrative Expenses. General and administrative expenses increased $0.2 million, or 1%, from 2016 to 2017. The increase was primarily due to an increase of $0.9 million in salaries and employee related costs, including the forgiveness of a loan to the Chief Executive Officer for $0.5 million. This increase was offset by a decrease of $0.3 million in external professional fees related to reimbursement related activities

and a decrease of $0.3 million in accounting fees. Included in general administrative expenses is $1.5 million and $1.3 million in public offering costs previously recorded on the consolidated balance sheet, which were written off in 2016 and 2017, respectively, as a result of delays in the public offering process.

Interest and Other Income (Expense), Net

	Years Ended December 31,			
	2016	2017	$ Change	% Change
	(in thousands except for percentages)			
Interest income	$ 71	$ 175	$ 104	146%
Interest expense	(3,308)	(6,204)	(2,896)	88%
Other income (expense), net	213	340	127	60%

Interest Income. Interest income increased $0.1 million, or 146%, from 2016 to 2017 due to investment of excess cash in money market funds.

Interest Expense. Interest expense increased $2.9 million, or 88%, from 2016 to 2017 primarily due to the extinguishment of a credit facility with Silicon Valley Bank, or SVB, and Oxford Finance LLC, or Oxford, in October 2017. The extinguishment resulted in $1.5 million in early termination fees and we expensed an additional $0.7 million of unamortized debt discounts. In conjunction with the extinguishment, we entered into a new term loan with Pharmakon, or the New Term Loan, with an increased principal balance from $30.6 million to $40.0 million resulting in an increase in interest of approximately $0.2 million. In December 2016, we also had drawn an additional $4.0 million in debt, resulting in $0.4 million of higher interest expense in 2017.

Other Income (Expense), Net. Other income (expense), net, increased $0.1 million or 60%, from 2016 to 2017, as a result in losses related to the change in the fair value of outstanding preferred stock warrants, which are accounted for as a liability and revalued at each reporting period.

Liquidity and Capital Resources

As of June 30, 2018, we had cash and cash equivalents of $16.2 million. Since inception, we have financed our operations through private placements of preferred stock, debt financing arrangements, and the sale of our products. As of June 30, 2018, we had $38.8 million principal amount of outstanding debt, net of debt discounts.

As of June 30, 2018, we had an accumulated deficit of $147.1 million. During 2017 and the six months ended June 30, 2018 we incurred net losses of $23.0 million and $7.3 million, respectively, and expect to incur additional losses in the future. We have not achieved positive cash flow from operations to date. We evaluated our current cash position, historical results, forecasted cashflows, and plans in regards to liquidity. We further considered the debt covenants associated with our current debt agreement. These covenants require us to maintain a minimum cash balance of $5.0 million and revenue targets. Beginning with the three months ended March 31, 2019, we are required to meet either revenue or earnings targets. If we do not comply with these covenants, the debt will immediately become due. Considering all of these factors, we believe, absent this offering, that there is substantial doubt about our ability to continue as a going concern for the next 12 months.

Based upon our current operating plan, we believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements through at least the next 12 months from the date of this offering. We continue to face challenges and uncertainties and, as a result, our available capital resources may be consumed more rapidly than currently expected due to (a) decreases in sales of our products and the uncertainty of future revenues from new products; (b) changes we may make to the business that affect ongoing operating expenses; (c) changes we may make in our business strategy; (d) regulatory developments affecting our existing products; (e) changes we may make in our research and development spending plans; and (f) other items affecting our forecasted level of expenditures and use of cash resources.

If we need to raise additional capital to fund our operations, funding may not be available to us on acceptable terms, or at all. If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of or suspend one or more of our sales and marketing efforts, research and development activities, or other operations. We may seek to raise any necessary additional capital through a combination of public or private equity offerings, debt financings, and collaborations or licensing arrangements. If we do raise additional capital through public or private equity offerings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, or declaring dividends. If we are unable to raise capital, we will need to delay, reduce, or terminate planned activities to reduce costs. Doing so will likely harm our ability to execute our business plans.

Borrowings

In October 2015, we entered into a term loan facility and a revolving line of credit with SVB and Oxford, or Term Loan, for $35.2 million. The first tranche of the Term Loan closed in October 2015 for $16.2 million, the proceeds of which were used to pay off previous loans with SVB of $15.5 million and final fees of $0.7 million related to the previous loans. Prepayment fees on the then existing debt facilities were waived. We drew the second tranche of $10.0 million in November 2015 and the third tranche of $4.0 million in December 2016. The maturity date of the Term Loan was December 1, 2019, and it carried an interest rate equal to the greater of 11% or the WSJ Prime rate plus 7.75%.

In connection with this agreement, we also issued to SVB and Oxford warrants to purchase, in the aggregate, 1,145,231 shares of our Series 6 preferred stock, with an exercise price of $0.92 per share. Subsequently, in August 2016, we amended the agreement to extend the draw period of the fourth tranche for an additional three months. In conjunction with the additional draw of the Term Loan, we issued an additional 174,844 warrants for the purchase of Series 7 preferred stock at an exercise price of $0.56 per share in December 2016. In February 2017, we amended the agreement to extend the interest only period by six months to October 2017 and extended the draw period of the fourth tranche through January 2018.

In October 2017, we extinguished the Term Loan and revolving line of credit facility with SVB and Oxford and concurrently, entered into the New Term Loan with Pharmakon for $40.0 million. The New Term Loan includes an interest-only period for 35 months through September 2020 and is then repaid for 25 months of equal principal payments plus interest through December 2022. The New Term Loan carries a fixed interest rate of 11.5% and a closing fee of 1.5% of the funded amount, or $0.6 million. The New Term Loan includes a pre-payment fee of the remaining interest payable for the first 30 months of the agreement if it is prepaid within the first 30 months, a 2% prepayment penalty for months 31-48, and a 1% penalty for months 49-60. The New Term Loan requires us to maintain a minimum cash balance of $5.0 million and revenue targets. Beginning with the three months ended March 31, 2019, we are required to meet either revenue or earnings targets. Under the New Term Loan, we also have a second tranche of $10.0 million available through January 2019, contingent upon the achievement of certain revenue milestones. The New Term Loan is collateralized by all of our assets, including intellectual property.

As of December 31, 2017 and June 30, 2018 we were in compliance with all of our debt obligations and covenants.

Contractual Obligations

The following table summarizes our contractual obligations as of December 31, 2017:

	Payments Due By Period				
	Total	Less than 1 year	1-3 years	4-5 years	More than 5 years
			(in thousands)		
Principal obligations on the debt arrangements[1]	$40,000	$ —	$ 4,444	$35,556	$ —
Interest obligations on the debt arrangements[1]	18,658	4,664	9,341	4,653	—
Operating leases[2]	967	721	169	77	—
Total	$59,625	$ 5,385	$13,954	$40,286	$ —

(1) For further discussion, see Note 6 to our consolidated financial statements.
(2) Operating lease obligations consist primarily of lease payments for our San Jose, California facility and Europe facilities.

The contractual commitment amounts in the table above are associated with agreements that are enforceable and legally binding. Obligations under contracts that we can cancel without a significant penalty are not included in the table above.

In February 2018, we entered into a new seven-year lease for our Santa Clara, California facility. The total commitment is $5.1 million.

Cash Flows

The following table sets forth the primary sources and uses of cash for each of the periods presented below:

	Six Months Ended June 30,			
	2017	2018	$ Change	% Change
	(in thousands, except for percentages)			
Net cash (used in) provided by:				
Operating activities	$(9,520)	$(5,673)	$ 3,847	(40)%
Investing activities	(274)	(715)	(441)	161%
Financing activities	5,218	208	(5,010)	(96)%
Effects of exchange rate changes on cash and cash equivalents	27	5	(22)	(82)%
Net decrease in cash and cash equivalents	$(4,549)	$(6,175)	$(1,626)	

	Years Ended December 31,			
	2016	2017	$ Change	% Change
	(in thousands, except for percentages)			
Net cash (used in) provided by:				
Operating activities	$(16,753)	$(17,530)	$ (777)	5%
Investing activities	(441)	(478)	(37)	(8)%
Financing activities	24,755	12,862	(11,893)	(48)%
Effects of exchange rate changes on cash and cash equivalents	67	(346)	(413)	(617)%
Net increase (decrease) in cash and cash equivalents	$ 7,628	$ (5,492)	$(13,120)	

Cash Used in Operating Activities

Net cash used in operating activities decreased $3.8 million, or 40%, from the six months ended June 30, 2017 to the six months ended June 30, 2018. The decrease in the net cash used in operating activities was primarily due to a decrease of $5.1 million in our net loss, offset by a decrease of $1.3 million in accounts payable related to the timing of payments made.

Net cash used in operating activities increased $0.8 million, or 5%, from 2016 to 2017. The increase in the net cash used in operating activities was primarily due to an increase of $2.5 million in our net loss, an increase of $1.2 million in accounts receivable, an increase of $2.2 million in inventory, and an increase in prepaid and other assets of $0.1 million. These uses of cash were partially offset by an increase of $2.3 million in accounts payable, and an increase of $1.8 million in accrued liabilities, as well as non-cash adjustments for the write-off of a debt discount of $0.7 million and the forgiveness of a note receivable of $0.4 million.

Cash Used in Investing Activities

Net cash used in investing activities increased $0.4 million, or 161%, from the six months ended June 30, 2017 to the six months ended June 30, 2018. Cash used in investing activities for the six months ended June 30, 2018 primarily consisted of leasehold improvements related to the new building lease entered into in February 2018 of $0.6 million. Cash used in investing activities for the six months ended June 30, 2017 primarily consisted of instrument set purchases of $0.3 million. The instrument sets are carried by our sales representatives and used during iFuse procedures.

Net cash used in investing activities was relatively constant from 2016 to 2017 and consisted primarily of instrument set purchases.

Cash Provided by Financing Activities

Cash provided by financing activities decreased $5.0 million, or 96%, from the six months ended June 30, 2017 to the six months ended June 30, 2018. Cash provided by financing activities for the six months ended June 30, 2017 consisted primarily of net proceeds of $5.4 million from the issuance of Series 7 preferred stock from February through March 2017, offset by payments for public offering costs of $0.3 million. Cash provided by financing activities for the six months ended June 30, 2018 consisted of proceeds from exercises of common stock options of $0.2 million.

Cash provided by financing activities decreased $11.9 million, or 48%, from 2016 to 2017. Cash provided by financing activities during 2016 consisted of net proceeds of $20.3 million from the issuance of Series 7 preferred stock from June through August 2016 and proceeds from additional debt financing of $4.0 million in December 2016. Cash provided by financing activities during 2017 consisted of net proceeds of $5.4 million from the issuance of Series 7 preferred stock from February through March 2017 and proceeds of $40 million from debt financing, offset by $29.1 million in extinguishment of debt financing, $1.1 million in repayment of debt financing, payments of debt issuance costs of $1.5 million, and payments of public offering costs of $1.3 million.

Critical Accounting Policies, Significant Judgments, and Use of Estimates

This discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, as well as the reported revenue generated, and expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are

reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates. For more detail on our critical accounting policies, see Note 2 to our consolidated financial statements appearing elsewhere in this prospectus.

Revenue Recognition

Our revenue is derived from the sale of our products to medical groups and hospitals through our direct sales force and distributors throughout the United States and Europe.

In accordance with ASC Topic 605, Revenue Recognition, we recognize revenue when persuasive evidence of an arrangement exists, title and risk of loss has transferred to the customer, the sales price is fixed or determinable, and collectability is reasonably assured. For the majority of product sales where our sales representative delivers the product at the point of implantation at hospitals or other medical facilities, we recognize revenue related to product sales upon completion of the procedure and authorization by the customer. Revenue is recognized upon receipt of a purchase agreement or agreement on pricing terms with the customer and when all other revenue recognition criteria are met. For the remaining sales, which include distributor and hospital sales where the product is ordered in advance of a procedure and a valid purchase order has been received, we recognize revenue based on shipping or delivery, which represents the point in time when the customer has taken ownership and assumed risk of loss and the required revenue recognition criteria are met. Such customers are obligated to pay within specified terms regardless of when or if they ever sell or use the products, and we have no post-delivery obligations.

Stock-Based Compensation

We measure our stock-based awards made to employees based on the estimated fair value of the awards as of the grant date using the Black-Scholes option pricing model. Stock-based compensation cost is recognized over the requisite service period using the straight-line method and is based on the value of the portion of stock-based payment awards ultimately expected to vest.

Equity instruments issued to nonemployees are recorded at their fair value on the measurement date and are subject to periodic adjustment as the underling equity instruments vest. We believe that the estimated fair value of the stock options is more readily measurable than the fair value of the services received. Stock-based compensation related to stock options granted to nonemployees is recognized as the stock options are earned.

In July 2016, we modified the terms of 10,365,515 vested and unvested stock option awards by reducing their exercise price to the fair value of our common stock on the date of modification which resulted in an incremental value of $0.4 million being allocated to the options. In December 2017, we modified the terms of 7,103,900 unvested stock option awards by reducing their exercise price to the fair value of our common stock on the date of modification and removing the vesting performance conditions for the awards which resulted in a fair value expense of $0.8 million for the options.

We recorded total non-cash stock-based compensation expense of $1.4 million during both 2016 and 2017. At June 30, 2018, we had $2.2 million of total unrecognized employee stock-based compensation expense, net of estimated forfeitures, related to stock option grants. This amount will be recognized as expense over a weighted-average period of 2.5 years. We expect to continue to grant stock options in the future, and, to the extent that we do, our actual stock-based compensation expense recognized in future periods will likely increase.

The intrinsic value of all outstanding options as of June 30, 2018 was $ million based on the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, of which $ million related to vested options and $ million related to unvested options.

Determining Fair Value of Stock Options

We recognize compensation costs related to stock-based awards granted to employees and directors, including stock options, based on the estimated fair value of the awards on the date of grant. We estimate the grant date fair value, and the resulting stock-based compensation, using the Black-Scholes option-pricing model. The grant date fair value of the stock-based awards is generally recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the respective awards.

The Black-Scholes option-pricing model requires the use of subjective assumptions to determine the fair value of stock-based awards. These assumptions include:

- *Expected Term*—The expected term represents the period that stock-based awards are expected to be outstanding. The expected term for option grants is determined using the simplified method. The simplified method deems the expected term to be the midpoint between the vesting date and the contractual life of the stock-based awards.
- *Expected Volatility*—Since we have been privately held and do not have any trading history for our common stock, the expected volatility was estimated based on the average volatility for comparable publicly traded companies over a period equal to the expected term of the stock option grants. The comparable companies were chosen based on their similar size, stage in the life cycle, or area of specialty.
- *Risk-Free Interest Rate*—The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of option.
- *Expected Dividend*—We have never paid dividends on our common stock and have no plans to pay dividends on our common stock. Therefore, we used an expected dividend yield of zero.

Our board of directors intends all options granted to be exercisable at a price per share not less than the per share fair value of our common stock underlying those options on the date of grant. The estimated fair value of our common stock was determined at each valuation date in accordance with the guidelines outlined in the *American Institute of Certified Public Accountants Practice Aid, Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. Our board of directors, with the assistance of management, developed these valuations using significant judgment and taking into account numerous factors, including developments at our company, market conditions, and contemporaneous independent third-party valuations. In valuing our common stock, the fair value of our business, or enterprise value, was determined using both the income approach and market approach. The income approach estimates value based on the expectation of future cash flows that a company will generate. These future cash flows are discounted to their present values using a discount rate based on the capital rates of return for venture-backed early stage companies and is adjusted to reflect the risks inherent in our cash flows. The market approach estimates value based on a comparison of the subject company to comparable public companies in a similar line of business. From the comparable companies, a representative market value multiple is determined and then applied to the subject company's financial results to estimate the value of the subject company.

The enterprise values derived from the approaches discussed above were then allocated to each of our classes of stock using a hybrid methodology, which included both the Option Pricing Method, or OPM, and the Probability Weighted Expected Return Method, or PWERM. The allocation of these enterprise values to each part of our capital structure, including our common stock, was done based on the OPM. OPM treats the rights of the holders of preferred and common shares as equivalent to call options on any value of the enterprise above certain breakpoints of value based upon the liquidation preferences of the holders of preferred shares, as well as their rights to participation and conversion. Thus, the estimated value of the common stock can be determined by estimating the value of its portion of each of these call option rights. The OPM is appropriate to use when the range of possible future outcomes is difficult to predict and thus creates highly speculative forecasts. The OPM backsolve method derives the implied enterprise value of a company from a recent transaction involving our own

securities issued on an arms-length basis. Under the PWERM the value is estimated based upon analysis of future values for the enterprise under varying scenarios, probabilities are ascribed to these scenarios based on expected future outcomes. PWERM involves a forward-looking analysis of the possible future outcomes of the enterprise. This method is particularly useful when discrete future outcomes can be predicted at a relatively high confidence level with a probability distribution. Discrete future outcomes considered under the PWERM include an initial public offering scenarios.

After the equity value is determined and allocated to the various classes of shares, a discount for lack of marketability, or DLOM, is applied to arrive at the fair value of common stock. A DLOM is applied based on the theory that as an owner of a private company stock, the stockholder has limited opportunities to sell this stock and any such sale would involve significant transaction costs, thereby reducing overall fair market value.

Following the closing of this offering, the fair value of our common stock will be determined based on the closing price of our common stock on the Nasdaq Global Market.

Preferred Stock Warrant Liability

We have issued freestanding warrants to purchase shares of common and preferred stock in connection with our prior debt facilities. We account for these warrants as a liability in our consolidated financial statements because the underlying instrument into which the warrants are exercisable contains deemed liquidation provisions that are outside our control.

The warrants were recorded at fair value using the Black-Scholes option pricing model. The warrants are re-measured at each financial reporting period with any changes in fair value being recognized as a component of other income (expense), net in the consolidated statements of operations. We will continue to adjust the liability for changes in fair value until the earlier of (i) exercise or expiration of the warrants, or (ii) the closing of an initial public offering, at which time certain preferred stock warrants will be converted into warrants to purchase common stock and the liability will be reclassified to additional paid-in capital, if they qualify for equity classification.

Common Stock Warrants

We account for warrants for shares of common stock as equity in accordance with the accounting guidance for derivatives. The accounting guidance provides a scope exception from classifying and measuring as a financial liability a contract that would otherwise meet the definition of a derivative if the contract is both (i) indexed to the entity's own stock and (ii) classified in the stockholders' deficit section of the consolidated balance sheet. We determined that the warrants for shares of common stock issued in connection with our prior debt facilities. We estimate the fair value of our warrants for shares of common stock by using the Black-Scholes option pricing model. Warrants classified as equity are recorded as additional paid-in capital on the consolidated balance sheet and no further adjustments to their valuation are made after the issuance of the warrants.

Income Taxes

We account for income taxes under the liability method, whereby deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using the enacted tax rates in effect for the year in which the differences are expected to affect taxable income. We assess the likelihood that the resulting deferred tax assets will be realized. A valuation allowance is provided when it is more likely than not that some portion or all of a deferred tax asset will not be realized.

As of December 31, 2017, we had net operating loss carryforwards of approximately $124.9 million and $101.7 million available to reduce future taxable income, if any, for federal and state income tax purposes, respectively. If not utilized, our federal and state net operating loss carryforwards begin to expire in 2029 and

2019, respectively, and valuation allowances have been established, where necessary. We also have research credit carryforwards of approximately $1.6 million and $1.7 million available to reduce future taxable income, if any, for both federal and California state income tax purposes, respectively. The federal credits begin to expire in 2030, and the California credits have no expiration date. Realization of these net operating loss and research credit carryforwards could expire unused and be unavailable to reduce future income tax liabilities, which could materially and adversely affect our results of operations.

We did not record a provision or benefit for income taxes during the six months ended June 30, 2017 or 2018. We continue to maintain a full valuation allowance against our net deferred tax assets.

We assess all material positions taken in any income tax return, including all significant uncertain positions, in all tax years that are still subject to assessment or challenge by relevant taxing authorities. Assessing an uncertain tax position begins with the initial determination of the positions sustainability and is measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon ultimate settlement. As of each balance sheet date, unresolved uncertain tax positions must be reassessed, and we will determine whether (i) the factors underlying the sustainability assertion have changed and (ii) the amount of the recognized tax benefit is still appropriate. The recognition and measurement of tax benefits requires significant judgment. Judgments concerning the recognition and measurement of a tax benefit may change as new information becomes available.

The Tax Reform Act of 1986 limits the use of net operating loss and tax credit carryforwards in certain situations where changes occur in the stock ownership of a company. We have determined that we experienced Section 382 ownership changes in 2010 and $1.4 million of our NOL carryforwards are subject to limitation.

On December 22, 2017, the 2017 Tax Cuts and Jobs Act, or the Tax Act, was enacted into law and the new legislation contains several key tax provisions that affected us, including a reduction of the corporate income tax rate to 21% effective January 1, 2018, among others. We are required to recognize the effect of the tax law changes in the period of enactment, such as remeasuring our U.S. deferred tax assets and liabilities as well as reassessing the net realizability of our deferred tax assets and liabilities. In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, *Income Tax Accounting Implications of the Tax Cuts and Jobs Act* (SAB 118), which allows us to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. We consider the accounting of the deferred tax re-measurements to be complete. However, ongoing guidance and accounting interpretation are expected in the near term and we expect to complete our analysis relating to this guidance and interpretation within the measurement period in accordance with SAB 118.

Off-Balance Sheet Arrangements

During 2016 and 2017 and for the six months ended June 30, 2018, we did not have any relationships with unconsolidated organizations or financial partnerships, such as structured finance or special purpose entities that would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Seasonality

Our business is affected by seasonal variations. For instance, we have historically experienced lower sales in the summer months and higher sales in the last quarter of the fiscal year. However, taken as a whole, seasonality does not have a material impact on our financial results.

JOBS Act Accounting Election

In April 2012, the JOBS Act was enacted. Section 107(b) of the JOBS Act provides that an “emerging growth company” can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the

Securities Act for complying with new or revised accounting standards. Thus, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption and, therefore, we will not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Risk

We are exposed to interest rate risks related to our cash and cash equivalents. We had cash and cash equivalents of $22.4 million and $16.2 million as of December 31, 2017 and June 30, 2018, respectively, which consist of bank deposits and money market funds. Our cash balance consisted of bank deposits and money market funds in 2017. Such interest-earning instruments carry a degree of interest rate risk; however, historical fluctuations in interest income have not been significant.

We had outstanding debt of $38.7 million and $38.8 million as of December 31, 2017 and June 30, 2018, which accrues interest at a fixed rate of 11.5%. In the ordinary course of business, we may enter into contractual arrangements to reduce our exposure to interest rate risks. We do not believe that a 10% change in interest rates would have a significant impact on our consolidated financial statements.

Foreign Currency Exchange Risk

We operate in countries other than the United States, and, therefore, we are exposed to foreign currency risks. We bill most direct sales outside of the United States in local currencies, which are mostly comprised of the Euro and the British Pound. Operating expenses related to these sales are largely denominated in the same respective currency, thereby limiting our transaction risk exposure. We do not believe that a 10% change in foreign currency exchange rates would have a significant impact on our net income. We do not currently hedge our exposure to foreign currency exchange rate fluctuations; however, we may choose to hedge our exposure in the future.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, 2014-09, *Revenue from Contracts with Customers*, which required an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. ASU 2014-09 will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. The new standard is effective for fiscal years beginning after December 15, 2017 for public companies, and for fiscal years beginning after December 15, 2018, and interim periods beginning after December 15, 2019, for private companies. Early application is permitted. The standard permits the use of either the retrospective or cumulative effect transition method. In March 2016, the FASB issued ASU 2016-08, *Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net)*, which clarifies the implementation guidance on principal versus agent considerations in ASU 2014-09. In April 2016, the FASB issued ASU 2016-10, *Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing*, which clarifies certain aspects of identifying performance obligations and licensing implementation guidance. In May 2016, the FASB issued ASU 2016-12, *Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients*, which relates to disclosures of remaining performance obligations, as well as other amendments to guidance on collectability, non-cash consideration, and the presentation of sales and other similar taxes collected from customers. These standards have the same effective date and transition date as ASU 2014-09. Our management is undergoing its assessment of the new standard, which includes the review of contracts and revenue channels, and will adopt the standard for the fiscal year ending December 31, 2019.

In July 2015, the FASB issued ASU 2015-11, *Inventory (Topic 330): Simplifying the Measurement of Inventory.* ASU 2015-11 simplifies the guidance on the subsequent measurement of inventory, excluding inventory measured using last-in, first out or the retail inventory method. Under the new standard, in scope inventory should be measured at the lower of cost and net realizable value. The new standard will become effective for fiscal years, including interim periods within those fiscal years, beginning after December 15, 2016, for public companies. For all other entities, the new standard is effective for fiscal years beginning after December 15, 2016, and interim periods within fiscal years beginning after December 15, 2017, with early adoption permitted. We have adopted this standard for the fiscal year ended December 31, 2017, which did not have a material impact on our consolidated financial statements.

In November 2015, the FASB issued ASU 2015-17, *Balance Sheet Classification of Deferred Taxes.* ASU 2015-17 specifies that deferred tax assets and liabilities shall be classified as noncurrent, or long-term, in a classified statement of financial position. The new standard is effective for public entities for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. For private entities, the new standard is effective for fiscal years beginning after December 15, 2017, and interim periods within fiscal years beginning after December 15, 2018. Earlier application is permitted for all entities as of the beginning of an interim or an annual reporting period. We have early adopted this standard for the fiscal year ended December 31, 2017, which did not have a material impact on our consolidated financial statements.

In February 2016, the FASB issued its new lease accounting guidance. Under the new guidance, ASU 2016-02, Leases (Topic 842), lessor accounting is largely unchanged. The new lease guidance simplifies the accounting for sale and leaseback transactions primarily because lessees must recognize lease assets and lease liabilities. Under the new guidance, lessees will be required to recognize a lease liability, which is a lessor's obligation to make lease payments arising from a lease, measured on a discounted basis; and a right-of-use asset, which is an asset that represents the lessee's right to use, or control use of, a specified asset for the lease term for all leases (with the exception of short-term leases) at the adoption date. The new guidance is effective for fiscal years, and for interim periods within those fiscal years, beginning after December 15, 2018 for public companies and beginning after December 15, 2019 for private companies. Early adoption is permitted for any interim or annual financial statements net yet issued. Lessees (for capital and operating leases) and lessors (for sales-type, direct financing and operating leases) must apply a modified retrospective approach for all leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements. We are currently evaluating the impact of this standard on our consolidated financial statements, and anticipate adopting the standard for the fiscal year ending December 31, 2020.

In March 2016, the FASB issued ASU 2016-09, which simplified several aspects of accounting for stock-based compensation transactions. The areas for simplification in this update involve several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The new guidance is effective for public entities for fiscal years beginning after December 15, 2016 and interim periods within those years. Other entities must apply the new guidance in fiscal years beginning after December 15, 2017 and in interim periods within fiscal years beginning after December 15, 2018, with early adoption permitted. We early adopted this standard in the first quarter of 2017 by recording the cumulative impact of applying this guidance to retained earnings, which was not material. We elected to continue to estimate the number of awards that are expected to vest.

In August 2016, the FASB issued ASU 2016-15 *Statement of Cash Flows (Topic 230), Classification of Certain Cash Receipts and Cash Payments*. ASU 2016-15 provides guidance on the following eight specific cash flow classification issues: (1) debt prepayment or debt extinguishment costs; (2) settlement of zero-coupon debt instruments or other debt instruments with coupon interest rates that are insignificant in relation to the effective interest rate of the borrowing; (3) contingent consideration payments made after a business combination; (4) proceeds from the settlement of insurance claims; (5) proceeds from the settlement of corporate-owned life insurance policies, including bank-owned life insurance policies; (6) distributions received from equity method

investees; (7) beneficial interests in securitization transactions; and (8) separately identifiable cash flows and application of the predominance principle. Current GAAP does not include specific guidance on these eight cash flow classification issues. The amendments of this ASU are effective for reporting periods beginning after December 15, 2017 for public companies, and reporting periods beginning after December 15, 2018 and interim periods with fiscal years beginning after December 15, 2019 for private companies, with early adoption permitted. We are currently evaluating the impact of adopting ASU 2016-15 on our consolidated financial statements, and anticipate adopting the standard for the fiscal year ending December 31, 2019.

In May 2017, the FASB issued ASU 2017-09, *Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting*, which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. The standard is effective for all entities for fiscal years, including interim periods within those fiscal years, beginning after December 15, 2017. Early adoption is permitted. We have adopted this standard for the fiscal year ending December 31, 2018, which did not have a material impact on our consolidated financial statements.

In July 2017, the FASB issued ASU 2017-11, *Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480), Derivatives and Hedging (Topic 815) I. Accounting for Certain Financial Instruments with Down Round Features II.* Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception. Part I applies to entities that issue financial instruments such as warrants, convertible debt or convertible preferred stock that contain down-round features. Part II replaces the indefinite deferral for certain mandatorily redeemable noncontrolling interests and mandatorily redeemable financial instruments of nonpublic entities contained within ASC Topic 480 with a scope exception and does not impact the accounting for these mandatorily redeemable instruments. For public business entities, the amendments in Part I of this update are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. For all other entities, the amendments in Part I of this Update are effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. Early adoption is permitted for all entities, including adoption in an interim period. We are currently evaluating the impact that the adoption of this standard will have on our consolidated financial statements, and anticipate adopting the standard for the fiscal year ending December 31, 2020.

In February 2018, the FASB issued ASU 2018-02, *Income Statement—Reporting Comprehensive Income (Topic 220).* This update provides companies with the option to reclassify stranded tax effects caused by the 2017 Tax Cuts and Jobs Act, or the 2017 Tax Act, from accumulated other comprehensive income to retained earnings. This standard is effective for all entities for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. Early adoption is permitted. We are currently evaluating the impact that the adoption of this standard will have on our consolidated financial statements, and anticipate adopting the standard for the fiscal year ending December 31, 2019.

In March 2018, the FASB issued ASU 2018-05, *Income Taxes (Topic 740).* This update amends the certain paragraphs in ASC 740 to reflect the provisions of SEC Staff Accounting Bulletin (SAB) 118, which provides guidance for companies that are not able to complete their accounting for income tax effects of the 2017 Tax Act in the period of enactment. This standard is effective for all entities immediately. The impact that the adoption of this standard has on our consolidated financial statements is further discussed in Note 12. Income Taxes.

In June 2018, the FASB issued ASU 2018-07, *Improvements to Nonemployee Share-Based Payment Accounting.* ASU 2018-07 expands the scope of *Topic 718, Compensation—Stock Compensation*, to include share-based payments issued to nonemployees for goods or services. Consequently, the accounting for share-based payments to nonemployees and employees will be substantially aligned. ASU 2018-07 supersedes *Subtopic 505-50, Equity—Equity-Based Payments to Non-Employees.* For public business entities, the

amendments are effective for fiscal years beginning after December 15, 2018, including interim periods within that fiscal year. For all other entities, the amendments are effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. Early adoption is permitted, but no earlier than a company's adoption date of *ASC 606*. We are evaluating the impact that the adoption of this standard will have on our consolidated financial statements, and anticipate adopting the standard for the fiscal year ending December 31, 2020.

BUSINESS

Overview

We are a medical device company that has pioneered a proprietary minimally invasive surgical implant system, which we call iFuse, to fuse the sacroiliac joint to treat sacroiliac joint dysfunction that often causes severe lower back pain. Since we introduced iFuse in 2009, more than 33,000 procedures have been performed by over 1,600 surgeons, in the United States and 33 other countries. Published clinical studies have shown that 15% to 30% of all chronic lower back pain is associated with the sacroiliac joint. We believe iFuse is currently used in the majority of minimally invasive surgical fusions of the sacroiliac joint in the United States.

The two sacroiliac joints are the largest joints in the body and connect the sacrum, near the base of the spine, to the iliac bones, the two major bones of the pelvis. The iFuse system includes a series of patented triangular implants, the instruments we have developed to enable the procedure, as well as the diagnostic and surgical techniques we have developed to enable physicians to perform the procedure. We introduced our second generation implant, the iFuse-3D, in 2017. We market our products with a direct sales force and a number of distributors in the United States, and with a combination of a direct sales force and distributors in other countries.

Our growth rate has recently increased, which we attribute in part to more widespread insurance coverage for sacroiliac fusion procedures, with many recent positive payer coverage policies exclusive to our iFuse system, as well as our efforts to educate the market regarding sacroiliac dysfunction. Since January 1, 2018, because of the strength of published clinical evidence on iFuse, 19 U.S. payors have published reimbursement policies exclusively covering the patented triangular design of our iFuse implants and excluding coverage of other products that are intended to fuse the sacroiliac joint. We believe that the full impact of each exclusive coverage decision grows over time as we continue to educate surgeons about the coverage and the medical criteria they need to follow, and train them on the diagnosis and how to perform the iFuse procedure.

In 2016 and 2017, we generated revenue of $42.1 million and $48.0 million, respectively, a growth rate of 14%, and incurred net losses of $20.6 million and $23.0 million, respectively. Our gross margins were 88% and 89% for 2016 and 2017, respectively. For the six months ended June 30, 2017 and 2018, we generated revenue of $22.5 million and $26.4 million, respectively, a growth rate of 17%, and incurred net losses of $12.5 million and $7.3 million, respectively. Our gross margins were 89% and 92% for the six months ended June 30, 2017 and 2018, respectively. The number of iFuse procedures performed in the six months ended June 30, 2017 and 2018 was 2,739 and 3,200, respectively.

Our implants have a triangular cross section, which resists twisting of the implant within the bone in which it is implanted, helping stabilize the joint even before fixation of the bone onto the implant, or bony ingrowth, which results in fusion. Products from our competitors use screws to treat the sacroiliac joint, which do not resist twisting within the bone as well as our patented triangular implants. A study we performed showed that our iFuse implants have more than six times the rotation resistance of a screw designed for sacroiliac joint fusion. We hold issued patents on implants with cross-sections of many non-round shapes, including the triangular shape we use for iFuse. We also hold issued patents for the method of placing those implants across the sacroiliac joint, as well as other parts of the spine and pelvis. Each titanium iFuse implant is at least three times the strength of a typical eight-millimeter surgical screw and the larger porous surface area of our implants allows for bony ingrowth. Three of our implants are typically used in each procedure.

The safety, clinical effectiveness, durability of pain relief and reduction in disability, cost effectiveness, and reduction in opioid use that result from iFuse are supported by a large number of studies that have resulted in more than 55 published papers. Several of these papers publish results from three prospective multicenter studies (INSITE, SIFI, and iMIA), two of which were randomized controlled clinical trials. Additionally, there have been several studies showing longer-term follow-up of up to six years.

- INSITE is a randomized controlled study conducted in the United States. Positive 24-month follow-up results were published in August 2016 in the *International Journal of Spine Surgery* showing

statistically significant and clinically important reduction in pain and disability after sacroiliac joint fusion but very little response to maximal non-surgical treatment. In April 2015, INSITE was awarded the "Best Overall Paper" out of approximately 450 submitted clinical study papers at the International Society for Advancement of Spine Surgery, or ISASS, conference.

- iMIA is a randomized controlled study conducted in Europe. Positive six-month follow-up results were published in *European Spine Journal* in May 2016, and the 12 follow-up results were published in August 2017 in *Pain Physician*. 24-month results are currently under review at an orthopedic journal. Like INSITE, results from iMIA show statistically significant and clinically profound reduction in pain and disability after SI joint fusion but little improvement after non-surgical treatment.
- SIFI is a single-arm study conducted in the United States. Positive 24-month follow-up results were published in the *International Journal of Spine Surgery* in April 2016, showing substantial and sustained reduction in pain and disability.
- LOIS is a prospective follow-on study, enrolling subjects at a subset of INSITE and SIFI sites treated with iFuse. Study outcomes at three years were published in April 2018 in *Medical Devices: Evidence and Research*. Amongst 103 enrolled subjects, mean sacroiliac joint pain at three years decreased from 81.5 preoperatively to 26.2 (a 56-point improvement from baseline, p<.0001). A manuscript showing sustained improvement in pain and disability at four-year follow-up was recently accepted for publication.
- A study in *Neurosurgery* published in April 2017 showed similar improvements in pain and disability in patients followed for up to six years. The study also showed a substantial reduction in the number of subjects using opioids in patients treated with iFuse at their last follow-up visit. At the last follow-up visit, 84% of patients who received non-surgical management were using opioids, while only 7% of patients treated with iFuse were using opioids.

The INSITE clinical trial included 148 subjects treated at 19 centers in the United States, with subjects randomized in a two-to-one ratio to either immediate sacroiliac joint fusion with iFuse or non-surgical management. The study design allowed subjects in the non-surgical management group to cross over and have surgery after six months. By 24 months after the start of the clinical trial, 89% of the non-surgical management group subjects still participating in the trial had elected to cross over to have the iFuse procedure, primarily because they derived little clinical benefit from non-surgical treatments. The study's results can be summarized as follows:

- **Reduction in Pain**. There was a statistically significant and clinically important pain reduction in subjects treated with iFuse as compared to very small responses in those treated with non-surgical management. Subjects surgically treated with iFuse had mean 52- 54- and 55-point reductions in sacroiliac joint pain at 6, 12 and 24 months, respectively, as measured by the VAS. By contrast, subjects in the non-surgical management group had only a mean 12-point reduction (p<0.0001) at six months. 12 points is below the commonly accepted 20-point threshold for clinically important improvement. In addition, the non-surgical management group subjects who elected after six months to cross over to have the iFuse procedure had pain reduction similar to that seen in subjects originally assigned to sacroiliac joint fusion with iFuse. At 24 months, the proportion of subjects with a reduction in VAS sacroiliac joint pain of 20 or more points due to the assigned treatment only was 83% in the iFuse group and 10% in the non-surgical management group.
- **Reduction in Disability**. There was a statistically significant and clinically important reduction in disability in subjects treated with iFuse as compared to very little response in those treated with non-surgical management. Subjects surgically treated with iFuse had a mean 27-point reduction in disability at six months, on the 0–100 Oswestry Disability Index, or ODI, while subjects in the non-surgical management group had only a mean five-point reduction (p<0.0001). Five points is less than the commonly accepted 15-point threshold to denote a clinically important response. At 24 months, the iFuse group had a mean 28-point reduction in ODI. At six months, the proportion of

subjects with ODI improvements of at least 15 points was 72.5% with iFuse treatment and only 13.0% in those undergoing non-surgical management ($p<0.0001$ for difference in response rate). In addition, the subjects who elected after six months to cross over to have the iFuse procedure had similar reduction in disability as the subjects originally assigned to sacroiliac joint fusion with iFuse. At 24 months, the proportion of subjects with an ODI improvement of at least 15 points with the assigned treatment only was 68.2% and 7.5% in the iFuse and non-surgical management groups, respectively ($p<0.0001$ for difference in response rate). These are very large differences.

Patients from certain sites participating in the INSITE study will be followed for up to five years as part of LOIS, a separate long-term study.

Surgical revision rate is an important measurement of a treatment's effectiveness for patients. Studies on lumbar, or lower back, fusion, a different type of spine procedure from iFuse, have shown revision rates as approximately 12%. A study published in *Medical Devices: Evidence and Research* in November 2015 showed that the cumulative four-year revision rate with iFuse was 3.5%. A single surgeon retrospective study published in the *International Journal of Spine Surgery* in January 2017 showed that the cumulative four-year revision rate for screw-based treatment of the sacroiliac joint was five times higher than the cumulative four-year revision rate for iFuse.

Market Opportunity

We estimate that over 30 million American adults have chronic lower back pain. For patients whose chronic lower back pain stems from the sacroiliac joint, our experience in both clinical trials and commercial settings indicates that iFuse could be beneficial for at least 30% of patients who are properly diagnosed and screened for surgery by trained healthcare providers. Approximately 282,000 patients in the United States were estimated to have received multiple non-surgical steroid injections for sacroiliac joint pain in 2017. Based on our market experience and internal estimates, and the assumption that the average person suffering from sacroiliac joint dysfunction has been in pain for five years, we estimate that the potential market for iFuse in the United States could be 288,000 patients annually, for a potential annual market in the United States of approximately $2.7 billion. While we have made significant inroads at penetrating this market, patients received only 4,319 iFuse procedures in 2017.

Patients with sacroiliac joint dysfunction may experience debilitating pain. We believe that the sacroiliac joint is the last major joint to be addressed by the orthopedic implant industry. Studies have shown that the disability that results from disease of the sacroiliac joint is comparable to the disability associated with a number of other serious orthopedic conditions, such as knee and hip arthritis and degenerative disc disease, each of which has surgical solutions where an implant is used and a multi-billion dollar market exists.

Frequently, sacroiliac joint patients are aging and/or may have experienced one or more of the following events that have contributed to disruption or degeneration of the sacroiliac joint: falls, previous lumbar surgery, automobile accidents, and/or pregnancies. We believe that Americans spend approximately $85.9 billion per year on spine problems and that approximately 65% of people who suffer from sacroiliac pain are women. In the United States, iFuse is intended for sacroiliac joint fusion for conditions including sacroiliac joint dysfunction that is a direct result of sacroiliac joint disruption and degenerative sacroiliitis. This includes conditions whose symptoms began during pregnancy or in the peripartum period and have persisted postpartum for more than six months. In all other countries where iFuse is available commercially, the system is indicated for sacroiliac joint fusion.

Diagnosis

It is often difficult to identify the source of lower back pain. As a result, some surgical procedures performed on the spine have a sub-optimal success rate. For example, published studies of lumbar fusion have

shown success rates of only approximately 60%. Unsuccessful spine surgery may result in failed back surgery syndrome, which has been shown to result in high healthcare costs with poor overall relief of pain. We believe low success rates of lumbar fusion are likely related, in many cases, to failure to diagnose the sacroiliac joint as the correct cause of pain.

Since we launched iFuse, we have made considerable investments in teaching healthcare professionals to accurately diagnose sacroiliac joint disorders. We provide instruction and training on how to perform the provocative maneuvers in a physician's office that can help establish the sacroiliac joint as the source of pain. If provocative tests are positive, surgeons confirm the diagnosis by injecting a small amount of local anesthetic into the joint under fluoroscopic guidance. The sacroiliac joint is confirmed as a pain source if the local anesthetic produces immediate and significant pain reduction. In addition to the differentiated characteristics of our iFuse procedure and triangular iFuse implants, we believe that more accurate diagnosis is part of the reason for the high success and patient satisfaction rates of the iFuse procedure.

Surgical Treatment of Sacroiliac Joint Disease

Patients with sacroiliac joint dysfunction or sacroiliac joint arthritis frequently experience significant pain simply from sitting, standing, or rolling over in bed. These activities result in small movements of the sacroiliac joints and pressure transferred across the joints. The pain can be exacerbated with activity—when a patient walks or runs, for example, the shock from each step is transmitted up the leg, through the iliac bones of the pelvis to the sacroiliac joint. The initial goal in fusion of the sacroiliac joint is to immediately stabilize the joint which very quickly decreases the pain. Following initial stabilization of the sacroiliac joint, the goal is to permanently fuse the joint. We believe our proprietary triangular implants stabilize the joint better and more quickly than competing technologies such as screws.

Surgical fusion of the sacroiliac joint with an open surgical technique was first reported in 1908, with further reports in the 1920s. The open procedure uses plates and screws, requires a 6- to 12-inch incision and is extremely invasive. The iFuse procedure involves a 1- to 2-inch incision and is much less invasive. For these reasons, we believe that open surgery for elective sacroiliac joint fusion has become less common in the United States since we introduced iFuse.

Due to its invasiveness, pain, long recovery time, and infrequent use, the open sacroiliac joint fusion procedure was rarely taught in medical school or residency programs. Prior to our launch of iFuse, most spine surgeons were unfamiliar with the sacroiliac joint and had never performed a sacroiliac joint fusion. As a result, when patients presented with lower back pain, spine surgeons often did not include evaluation of the sacroiliac joint in their diagnostic work-up. Surgeons who did recognize the condition typically told their patients they had nothing to offer surgically.

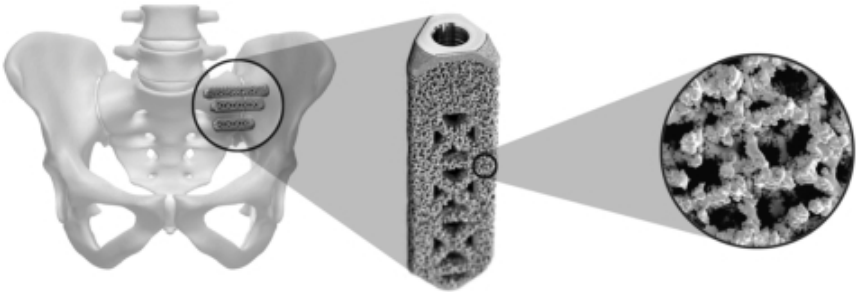
Non-Surgical Treatment of Sacroiliac Joint Disease

Although a number of non-surgical treatments exist for sacroiliac joint pain, they did not provide the level of pain or disability relief seen with the iFuse procedure for the patients participating in the INSITE study. Non-surgical treatments include:

- **Medical therapy**, including opiates and non-steroidal anti-inflammatory medications.
- **Physical therapy**, which can involve exercises as well as massage.
- **Intra-articular injections of steroid medications**, which are typically performed by physicians who specialize in pain treatment or anesthesia.
- **Radiofrequency ablation**, or the cauterizing, of the lateral branches of the sacral nerve roots.

Our Solution—The iFuse Implant System

Our iFuse system, which includes our implants and instruments, is designed to address the shortcomings of alternative treatments, including open surgery, non-surgical management, and screw-based fusion procedures. As shown in the graphic below, our iFuse implants are triangular, and three implants are typically used in each procedure. Our implants are made of titanium and have a porous surface. Each iFuse implant is at least three times the strength of a typical eight-millimeter surgical screw and the large porous surface area allows fixation of the bone to the implants. We introduced the original iFuse implants in 2009, and our second generation iFuse-3D implants in 2017.



The iFuse procedure is typically performed under general anesthesia. The surgeon uses a custom instrument set we provide to prepare a triangular channel for each implant through the ilium, across the sacroiliac joint, and into the sacrum. An iFuse implant is then pressed into the triangular channel, which is slightly smaller than the implant, creating what is known as an interference fit. The triangular cross section of our iFuse implants, as shown below, prevents them from rotating. Our triangular iFuse implants cross the sacroiliac joint and provide immediate joint stability, which is why we believe pain diminishes soon after the iFuse procedure. Over time, bone grows onto the implants and across the joint, permanently stabilizing or fusing the joint.

By contrast, open fusion of the sacroiliac joint, as well as the minimally invasive solutions offered by other companies, typically use screws and/or plates for fixation. When placed across the sacroiliac joint, standard orthopedic screws, which lack features to encourage biologic fixation, have an exhibited propensity to rotate and loosen over time. Because of the triangular shape, porous surface, strength, and other differentiating factors of our iFuse implants, we believe that our published clinical data do not apply to other minimally invasive solutions. Little published evidence of safety, clinical effectiveness, durability, or economic utility currently exists for sacroiliac fusion devices other than iFuse. We are unaware of any data to show that our competitors' sacroiliac joint screws, with features allowing biologic fixation, have a lower rate of loosening than standard orthopedic screws. In addition, placement of plates for open fusion procedures typically requires larger incisions and more invasive dissection, which results in longer recovery times and increased morbidity. We believe that the differences between iFuse and other products, as well as the substantial published clinical evidence showing the safety and effectiveness of iFuse, are the reason why a growing number of payors have recommended that iFuse be reimbursed for sacroiliac surgery to the exclusion of other technologies that are designed for the procedure.

Our implants cross the sacroiliac joint and provide immediate stability, which is why we believe pain diminishes soon after the iFuse procedure. Typically, surgeons recommend protected weight-bearing for three weeks. However, post-operative instructions are patient-specific and some patients are allowed to perform weight-bearing activities sooner. Follow-up studies have shown that bony bridging across the sacroiliac joint is present in the majority of cases five years after the iFuse procedure.

Three implants are used in most iFuse procedures. Each implant bridges across the joint from the iliac bone to the sacrum. Placing each implant requires four basic steps:

- **Pin**. The surgeon inserts a guide pin through the iliac bone, across the sacroiliac joint and into the sacrum.

- **Drill**. Surgeons drill over the guide pin, through the iliac bone, across the sacroiliac joint and just into the sacrum. This step is optional if using the sharp-tip broach.
- **Broach**. The surgeon impacts a triangular broach over the pin which prepares a triangular channel that is slightly smaller than the iFuse implant.
- **Implant**. The surgeon impacts the implant into the triangular channel thereby spanning the sacroiliac joint and docking the implant in the sacrum. The channel is slightly smaller than the implant, which produces an interference fit.

iFuse is a cannulated system, which means that the drill, broach and implants have hollow channels which fit over the pin for guidance purposes. As is typical across the orthopedic implant industry, a member of our team is normally present in the operating suite during surgery to provide technical assistance for the use of iFuse.

We currently offer three custom instrument sets for surgical placement of iFuse implants in the body. The standard set is comprised of largely stainless steel materials; the XL (Extra Long) set is the same as the standard set but most instruments are elongated by three inches for treatment of larger patients; and the radiolucent set is comprised of instruments made with more radiolucent materials, such as PEEK and aluminum to improve visualization under fluoroscopy during an iFuse procedure. We also have instrument sets which have been cleared for use with Medtronic's surgical navigation system and with the Mazor surgical robot.

Our Strategy

Our business objective is to maintain and enhance our leadership position in the area of sacroiliac joint fusion by providing clinically proven products and procedure-related training to promote pain and disability pain relief in affected patients. To accomplish this objective, we intend to:

- Continue to educate physicians, payors, and patients globally about the growing body of evidence supporting the safety, durable clinical effectiveness, economic benefit, and reduction in opioid use associated with the iFuse procedure;
- Educate and train the healthcare community on the prevalence, anatomy, diagnosis, and treatment options for the sacroiliac joint, including minimally invasive surgical fusion, and work with and support medical societies including NASS, CNS, AANS, ISASS, SRS, and AAOS to increase their education programs teaching the diagnosis of the sacroiliac joint as part of the differential diagnosis of lower back pain;
- Increase exclusive and non-exclusive reimbursement coverage for iFuse;
- Expand our direct field organization in the United States and select European countries to help drive adoption of our iFuse products;
- Maintain our technological leadership by investing in the creation of new or improved products for sacroiliac joint surgery, and obtain domestic and international regulatory clearance or approvals to market them in the United States and additional countries; and
- Continue to grow our existing intellectual property portfolio.

Our Published Studies

iFuse is the only minimally invasive product for sacroiliac joint fusion commercially available in the United States that, to our knowledge, is supported by substantial high-quality published evidence of safety, clinical effectiveness, durability, and economic utility.

These benefits are supported by more than 55 published papers (45 of which we financially supported), including a prospective, randomized controlled multi-center clinical trial referred to as "INSITE" and a

prospective multi-center clinical study referred to as “SIFI.” INSITE 24-month follow-up results were published in August 2016 in *International Journal of Spine Surgery*. 6-month and 1-year summaries were also published in reputable journals. Published results demonstrate clinically important and statistically significant improvement for sacroiliac joint pain, disability due to lower back pain, quality of life, and patient satisfaction. Moreover, the level of published evidence supporting the safety and effectiveness of sacroiliac joint fusion using iFuse is high.

In the United States, the iFuse Implant System is FDA-cleared with the following indication statement: The iFuse Implant System® is intended for sacroiliac fusion for conditions including sacroiliac joint dysfunction that is a direct result of sacroiliac joint disruption and degenerative sacroiliitis. This includes conditions whose symptoms began during pregnancy or in the peripartum period and have persisted postpartum for more than six months. Clinical studies have demonstrated that treatment with the iFuse Implant System improved pain, patient function, and quality of life.

INSITE Study Design

INSITE is a prospective multicenter randomized controlled trial conducted in the US. This section describes INSITE in more detail.

INSITE enrollment took place between January 2013 and May 2014 at 19 sites in the United States. Adults between 21 and 70 years old were eligible to participate if they had a confirmed diagnosis of sacroiliac dysfunction due to degenerative sacroiliitis and/or sacroiliac joint disruption. Diagnosis was based on the subject’s history, provocative tests performed in the surgeon’s office, and at least a 50% decrease in sacroiliac joint pain 30 to 60 minutes after local anesthetic was injected into the joint under image guidance. Eligibility required a sacroiliac VAS pain score of at least 50, where zero represents no pain and 100 represents the worst pain imaginable, as well as a baseline ODI score of at least 30, which has a scale of 0-100, where zero represents no disability and scores greater than 60 represent very severe disability.

Exclusion criteria included inability to diagnose pain related to the sacroiliac joint, sacroiliac joint pain due to inflammatory conditions, severe back pain deemed to be due primarily to other causes, history of recent major trauma to the pelvis, metabolic bone disease, or any condition that made treatment with the study devices infeasible or interfered with the ability to participate in physical therapy. Subjects involved in litigation, on disability leave, or receiving workers’ compensation related to their back or sacroiliac joint pain were also excluded. Subjects were randomly assigned to sacroiliac joint fusion or non-surgical management in a two to one ratio. After six months of follow-up, subjects could elect to receive sacroiliac joint fusion surgery using iFuse. All of the subjects who were randomized to non-surgical management completed at least six months of follow-up before electing to cross over to surgery. There was no early crossover.

Subjects assigned to non-surgical management began immediately with treatment consisting of one or more of the following: 1) management of pain with medication, including narcotics; 2) physical therapy; 3) steroid injections in the sacroiliac joint; and 4) radiofrequency ablation of local nerves. Physical therapy followed American Physical Therapy Association, or APTA, guidelines. Not all non-surgical management interventions were provided to all non-surgical management subjects. Non-surgical management interventions were provided serially, typically in order of increasing invasiveness, according to individual needs.

Baseline assessments included medical history and physical examination. Subjects were scheduled for follow-up at 1, 3, 6, 12, 18, and 24 months after enrollment. At each follow-up, the subjects evaluated their pain and disability by completing questionnaires to assess pain and disability.

A high-resolution pelvic CT scan was performed at the 24-month follow-up for those subjects randomized to and treated with iFuse. The primary purpose of the CT scan is to judge the adherence of bone onto the implants on both the sacral and iliac sides of the sacroiliac joint and to determine whether there is bone bridging across the joint. Other radiographic endpoints were assessed as well.

The study required that subjects receive only the assigned treatment to month six. After six months, the study allowed subjects assigned to non-surgical treatment to cross over to surgery. Crossover was allowed because the anticipated success rate for non- surgical management was low, and many subjects would not have participated without the ability to cross over to surgical care within the study. One-hundred percent of subjects who crossed over to surgical treatment in the study did so after their six-month visit was complete in compliance with the design of the study. Nearly 90% of non-surgical management subjects still participating at month six crossed over to surgical care after six months. All subjects who crossed over had sacroiliac joint fusion using iFuse and were subsequently evaluated with follow-up visits. No early crossover occurred.

The primary endpoint was a composite success or failure endpoint. Success was defined as reduction from baseline VAS sacroiliac joint pain by at least 20 points, absence of device-related serious adverse events, absence of neurological worsening related to the sacral spine, and absence of surgical re-intervention (removal, revision, reoperation, or supplemental fixation) for sacroiliac joint pain. Secondary endpoints included improvement from baseline in VAS, ODI, as well as treatment satisfaction and other criteria. Other important measures included quality of life assessments.

In the study, 442 subjects at 19 centers were screened for participation, of which 148 were enrolled and treated. Mean subject age was 51 years and 18 (12%) were 65 years of age or older. Most subjects (94.6%) were Caucasian and approximately two-thirds were female.

Enrolled subjects were highly debilitated by sacroiliac joint pain as indicated by high baseline VAS scores (mean 82.3) and ODI scores (mean 56.8). Nineteen percent were not working due to chronic pain. The duration of pain prior to enrollment averaged 6.4 years (range 0.5 to 40.7 years), and 87.2% had had pain for more than one year and 73.6% had pain for more than two years.

Trial subjects had previously undergone sacroiliac-specific physical therapy (72.3% of subjects), sacroiliac steroid injections (85.8%) and radiofrequency ablation of the sacroiliac joint (16.2%). Approximately two-thirds were taking opioid pain medications at baseline and all reported that multiple activities commonly caused or worsened their sacroiliac joint pain.

Follow-up was excellent with 96% of non-surgical subjects having 6-month follow-up and 87% of sacroiliac joint fusion patients having 24-month follow-up.

All subjects assigned to sacroiliac joint fusion underwent the procedure. Of the subjects assigned to surgery, 76 had the iFuse procedure on one sacroiliac joint, while 26 underwent the procedure on both sacroiliac joints. Mean procedure time was 45 minutes (range 14 to 140 minutes). Mean estimated blood loss was 33 ml (range 0.5 to 250 ml). Three implants were used in 91.2% of cases and most implants were seven millimeters in diameter. The hospital length of stay ranged from zero to seven days, and 97.1% were discharged in two days or less.

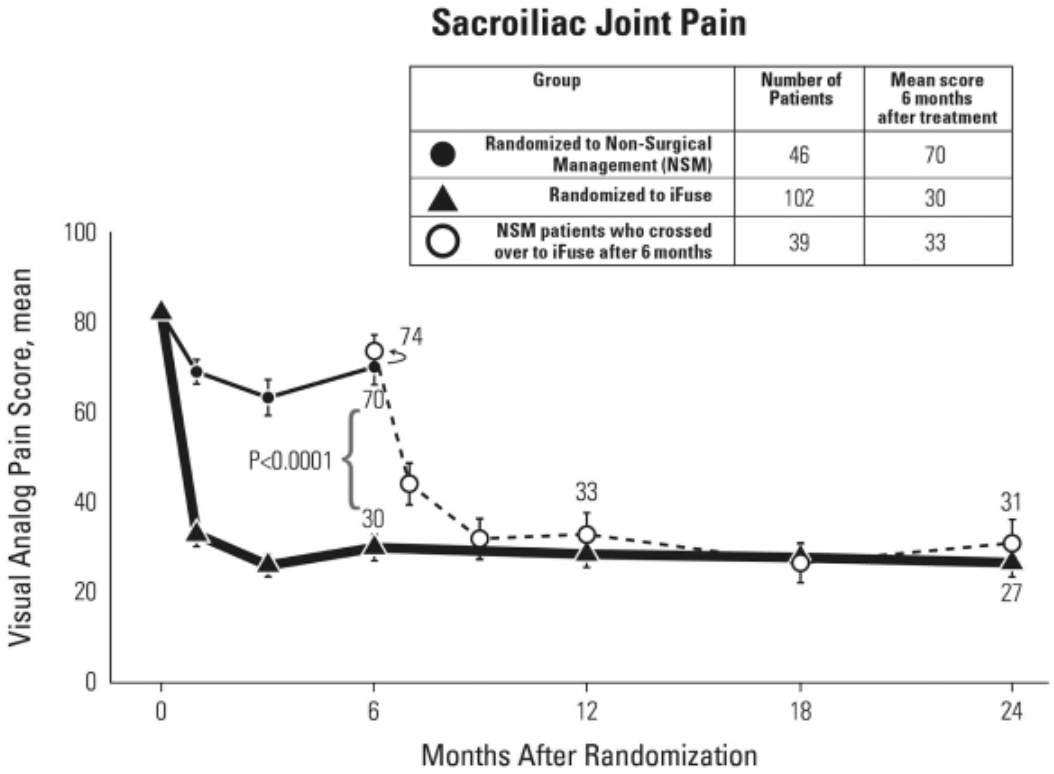
Of the 46 subjects assigned to non-surgical management:

- All but one received physical therapy during the six months after treatment assignment;
- 73.9% underwent at least one steroid injection;
- 45.7% underwent radiofrequency ablation of the sacroiliac joint; and
- 87.0% underwent at least two types of non-surgical management treatments in addition to pain medications.

The above data suggests that the intensity of non-surgical management interventions was high and representative of that provided in standard clinical practice.

INSITE clinical outcomes can be summarized as follows.

- **Reduction in Pain**. There was a statistically significant and clinically important reduction in pain among subjects treated with iFuse as compared to non-surgical management. As shown in the graph below, subjects surgically treated with iFuse had a mean 52-point VAS reduction in sacroiliac joint pain at six months. The reduction in pain was sustained with a mean 54- and 55-point reduction in sacroiliac joint pain observed at 12 and 24 months, respectively. By contrast, subjects in the non-surgical management group had only a mean 12-point reduction ($p<0.0001$) at six months. In addition, the non-surgical management group subjects who elected after six months to cross over to have the iFuse procedure had pain reduction similar to that seen in subjects originally assigned to sacroiliac joint fusion with iFuse. At 24 months, the proportion of subjects with a reduction in VAS sacroiliac joint pain of 20 or more points was 83% in the iFuse group and 10% in the non-surgical management group.

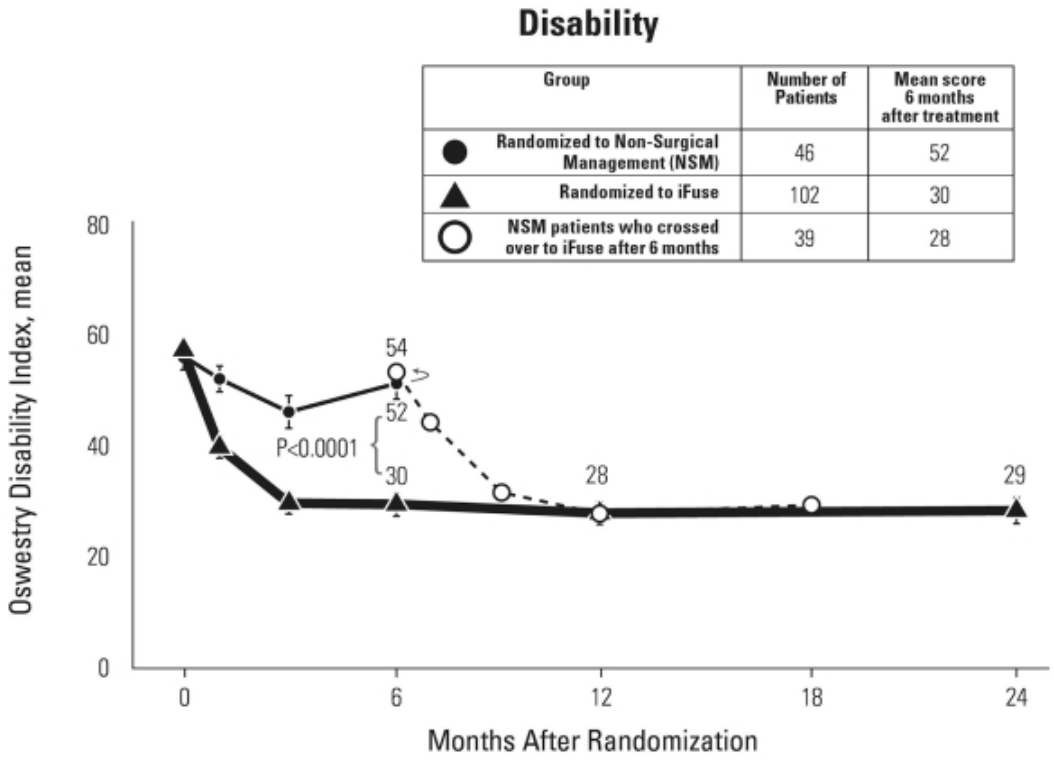


Subjects who elected not to cross over to surgery had reduced pain at six months, but their pain worsened somewhat over time. In contrast, the non-surgical management group subjects who elected to cross over to have the iFuse procedure had pain reduction similar to that seen in subjects originally assigned to sacroiliac joint fusion with iFuse. These clinically important differences show the effectiveness of sacroiliac joint fusion with iFuse.

- **Reduction in Disability**. There was a statistically significant reduction in disability with iFuse as compared to non-surgical management. As shown in the graph below, subjects surgically treated with iFuse had a mean 27-point ODI reduction in disability at six months, while subjects in the non-surgical management group had only a mean 4.6-point decrease ($p<0.0001$). At 12 and 24 months, the iFuse group had a mean 29- and 28-point reduction in disability, respectively. At six months, the proportion

of subjects with ODI improvements of at least 15 points was 72.5% and 13.0% in the iFuse and non-surgical management groups, respectively. At 24 months, the proportion of subjects with an improvement of at least 15 points due to the assigned treatment was 68.2% and 7.5% in the iFuse and non-surgical management groups, respectively ($p<0.0001$).

As shown in the figure below, the subjects who elected after six months to cross over to have the iFuse procedure had similar reduction in disability as the subjects originally assigned to sacroiliac joint fusion with iFuse. These clinically important differences show the effectiveness of sacroiliac joint fusion with iFuse.



Patient Satisfaction

Patient satisfaction was assessed by asking subjects whether they were very satisfied, somewhat satisfied, somewhat dissatisfied or very dissatisfied with the treatment received. At six months, 79.0% of subjects who had received the iFuse procedure were very satisfied, compared with 27.3% of subjects in the non-surgical management group. At six months, 81.0% of surgery subjects said they would definitely have the procedure again. At 24 months, satisfaction rates were high, with 73.3% reporting being very satisfied with surgical treatment of the sacroiliac joint, and 71.1% indicated they would have the procedure again. These results are consistent with the satisfaction results from other studies, covering approximately 500 subjects.

Adverse Events

During the first six months, the mean number of adverse events per subject was slightly but not statistically significantly higher in the surgery group (1.3 events) as compared to the non-surgical management group (1.1 events, $p=0.3063$). The most common adverse event related to our implant was leg pain resulting from misplacement of the implant, resulting in impingement of the implant on a lumbar spine nerve root. The most

common adverse event for our implant procedure has been minor wound infections. None of these adverse events required surgical treatment. The following table shows the number and percentages of subjects who had adverse events related to the iFuse device and the iFuse procedure.

	Non-Surgical Management (n=46) N (%*)	Sacroiliac Joint Fusion (n=102) N (%)
Category		
Related to iFuse implant		
Definitely related	—	2 (2.0%)
Probably related	—	1 (1.0%)
Total	—	3 (2.9%)
Related to non-surgical management or iFuse procedure**	3 (6.5%)	6 (5.9%)
Definitely related	1 (2.2%)	10 (9.8%)
Probably related	4 (8.7%)	16 (15.7%)
Total		

* Percent reported as number of events divided by number assigned to treatment.
** Events from first 180 days shown.

In summary, we believe the INSITE study, a prospective, randomized controlled multi-center clinical trial, provides substantial evidence of clinically important and statistically significant efficacy supporting the superiority of sacroiliac joint fusion using iFuse as compared to non-surgical management. Further, the fact that subjects who crossed over responded, as well as those who were originally assigned to the iFuse group, adds significantly to the trial's validity and importance.

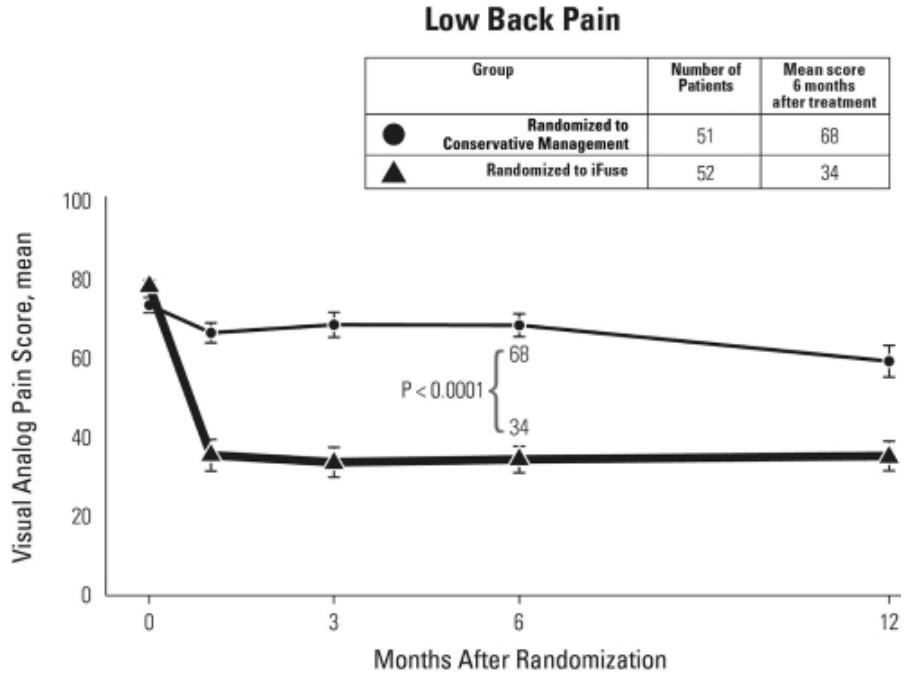
iMIA European Clinical Trial

iMIA is a second prospective, randomized clinical trial of sacroiliac joint fusion using iFuse compared to non-surgical management with a design very similar to that of INSITE. iMIA enrolled and treated 103 subjects at nine sites in four European countries. The trial's six-month results were published in European Spine Journal in May 2016 and 12-month results were published in August 2017 in *Pain Physician*.

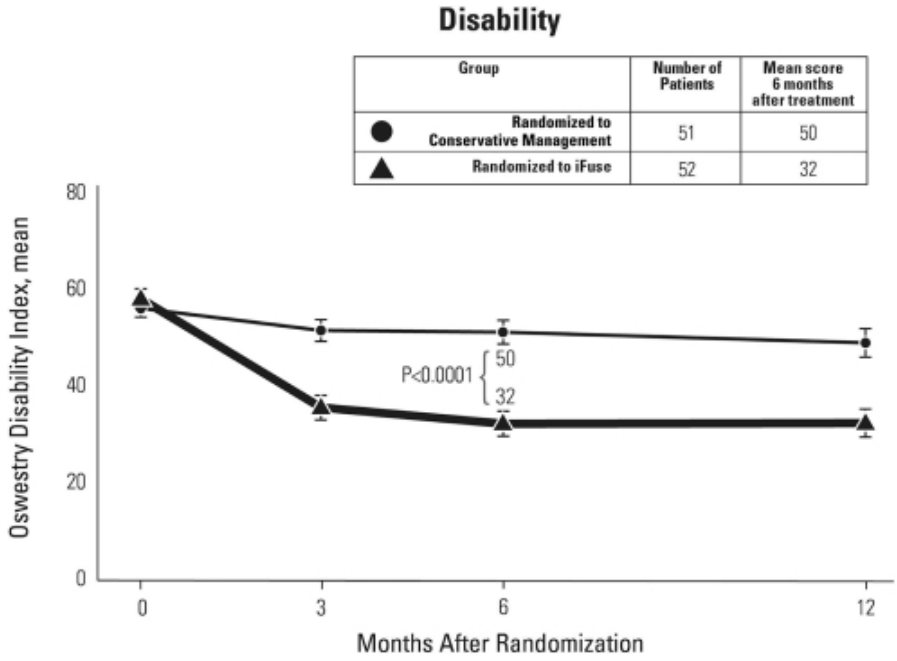
In iMIA, 103 adults with chronic sacroiliac joint pain at nine sites in four European countries were randomly assigned in a one-to-one ratio to either immediate sacroiliac joint fusion with iFuse or conservative management. Conservative management was performed according to the European guidelines for the diagnosis and management of pelvic girdle pain and consisted of optimization of medical therapy, individualized physical therapy and adequate information and reassurance as part of a multifactorial treatment.

At 12 months, low back pain in the surgically treated group improved by 42 points and ODI improved by 25 points ($p<.0001$ from baseline). Adverse events occurred at a low rate and the frequency of adverse events did not differ between groups. One case of postoperative nerve impingement occurred in the surgical group, which was resolved by repositioning the implant.

The figure below shows mean VAS pain scores at baseline and throughout follow-up. The results show clinically profound, rapid and sustained reduction in pain following treatment with iFuse, in contrast with conservative management.



The figure below shows mean ODI scores at baseline and throughout follow-up. The results show clinically profound, rapid and sustained reduction in disability following treatment with iFuse, in contrast with conservative management.



A manuscript describing 24-month results is currently under review at a medical journal. Study data show that improvements in pain, disability and quality of life were sustained at 24 months and satisfaction rates remained high.

SIFI Clinical Trial

Sacroiliac Joint Fusion with iFuse Implant System, or SIFI, is a prospective, multicenter single-arm clinical trial. Eligibility criteria and endpoints were identical to INSITE. A manuscript summarizing 24-month results was published in *International Journal of Spine Surgery* in April 2016.

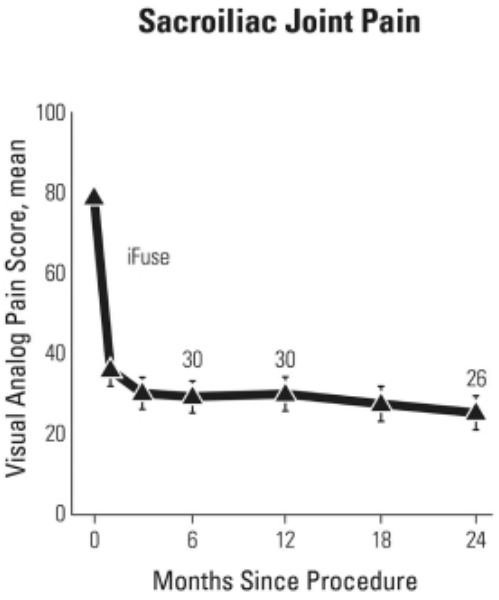
Each of the 172 enrolled subjects received the iFuse procedure at one of 26 participating sites between August 2012 and December 2013. Mean subject age was 51 years and 96.5% subjects were Caucasian and approximately 70% were female. Follow-up rates at month 6, 12, and 24 were 97%, 91%, and 87%, respectively.

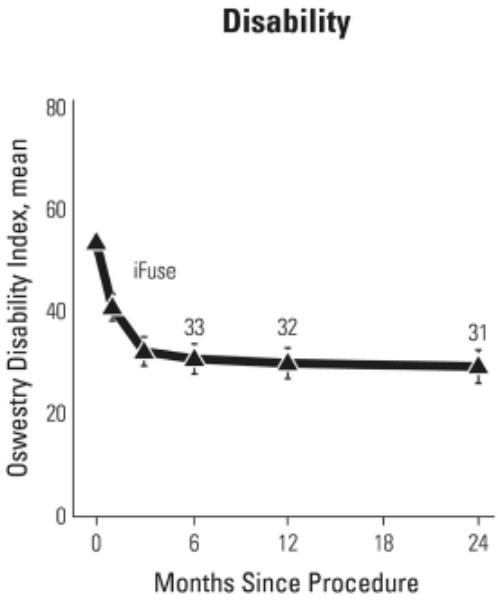
Baseline sacroiliac pain and disability scores were high. The mean baseline VAS score was 79.8, while the mean baseline ODI score was 55.2. The mean duration of pain prior to enrollment was five years (range 0.4 to 41 years), and 84.3% had had pain for more than one year and 64.5% had had pain for more than two years.

Seventy-six percent were taking opioid pain medications at baseline and all reported that multiple activities commonly caused their sacroiliac joint pain. Many subjects (44.2%) had a history of prior lumbar fusion, and concomitant spine disease was common. Sacroiliac joint pain persisted despite prior treatments with physical therapy (64.5% of subjects), sacroiliac joint steroid injections (94.2%), and prior radiofrequency ablation of the joint (15.7%).

Hospital length of stay ranged from zero to seven days, and 95.3% were discharged in two days or less. Prolonged hospital stays were related to subject comorbidities, not procedure-related adverse events.

The figure on the left below shows mean VAS pain scores at baseline and throughout follow-up. The figure on the right shows mean ODI scores at baseline and throughout follow-up. The results for both VAS pain and ODI scores each show clinically important and sustained reduction in disability across the subject population and follow-up period, consistent with the results observed in the surgical group in INSITE.



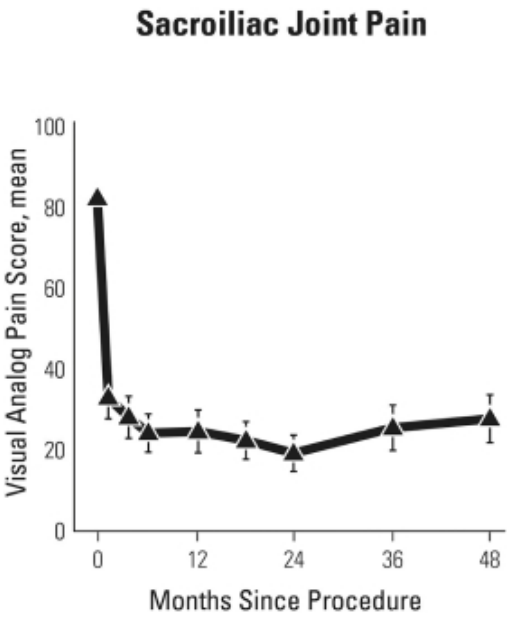


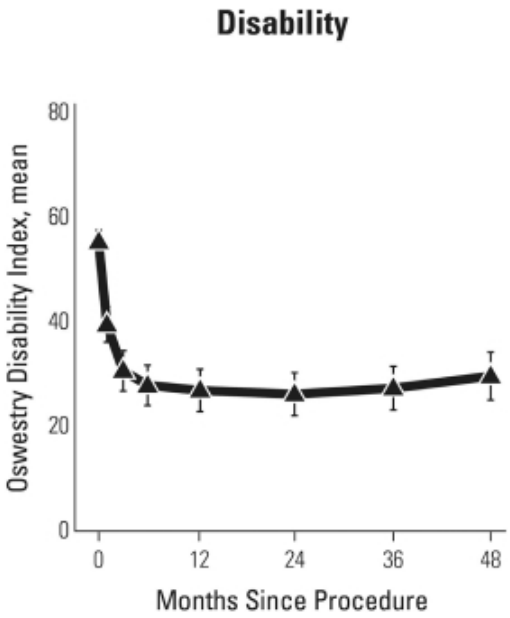
Satisfaction rates were high, with 78.1% reporting being very satisfied with sacroiliac joint treatment by month 24 and 93.8% being very or somewhat satisfied. 74.7% indicated they would definitely have the procedure again; 88.4% indicated they would probably or definitely have the procedure again.

Four adverse events (2.4% of all subjects) were rated by the investigator to be definitely device-related and three (1.8%) were probably device-related. Pain related to implant impingement on sacral nerve roots occurred in three cases (including one non-study-related side), all of which resolved with immediate repositioning of implants. In four cases, sacroiliac joint or hip pain was attributed to the presence of an implant or bone growth around the implant. Twenty-six events were rated as probably or definitely related to the placement procedure. The most common events were wound infection, irritation or drainage, sacroiliac joint pain related to implant malposition (described above), and recurrent sacroiliac joint pain related to inadequate device placement. One subject had a deep wound infection that required surgical debridement.

LOIS Clinical Trial

LOIS is a prospective follow-on study, enrolling subjects at a subset of INSITE and SIFI sites who underwent sacroiliac joint fusion. Enrolled subjects will be followed out to five years following surgery. Study outcomes at three years were published in April 2018 in *Medical Devices: Evidence and Research*. Among 103 enrolled subjects, mean sacroiliac joint pain at three years decreased from 81.5 preoperatively to 26.2 (a 56-point improvement from baseline, p<.0001), as shown in the graph below. A manuscript with results at four years of follow-up was recently accepted for publication. Study data show continued improvements in pain, disability and quality of life sustained at 48 months.





Subjects in the LOIS study experienced similar improvements in disability and quality of life. As shown in the graph below on the left, average disability prior to treatment as measured on the ODI scale was 56.3 and fell to an average of 28.2 by 36 months following treatment. As shown in the graph on the right, average quality of life as measured by the EuroQol-5D prior to treatment was 0.45 and had improved to 0.75 by 36 months following treatment with iFuse.

Additional Published Clinical Studies

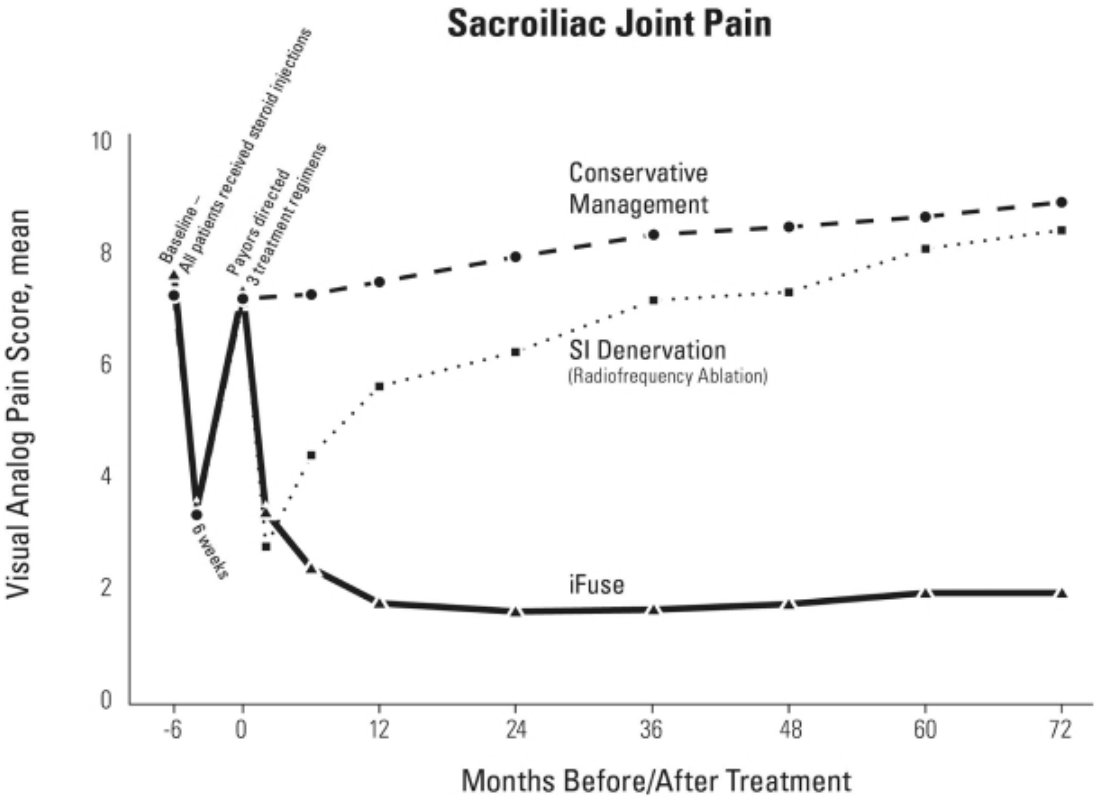
We have demonstrated the long-term durability of pain relief resulting from treatment with iFuse in several other published studies. A study published in the *Open Orthopedics Journal* in 2014, which we financially supported, showed that significant clinical pain relief observed at 12 months was maintained for five years. Similar results with four and one-half year follow-up were published in the *Journal of Spine* in 2014. A retrospective multicenter analysis of three-year outcomes after sacroiliac joint fusion with iFuse showed similar responses.

Of more than 500 patients treated with iFuse in 10 studies we have sponsored or followed in which satisfaction was measured, 91% were satisfied or very satisfied with the result. All of the iFuse studies published as of June 2018 report sacroiliac joint pain using the VAS pain scale are in the graph below. We financially supported nine of these thirteen clinical studies.

To date, several studies, some of which we did not sponsor, have been published on the safety and effectiveness of sacroiliac joint fusion using iFuse. These are prospective or retrospective, single site or multi- site, and U.S.- or Europe-based. These clinical studies demonstrate the iFuse procedure to be safe and effective. These studies demonstrate pain reduction and/or ODI improvement that is statistically significant and clinically important. The type and rate of reported adverse events were similar to those reported in INSITE, iMIA, and SIFI. These additional studies are consistent with the results of INSITE, iMIA, and SIFI.

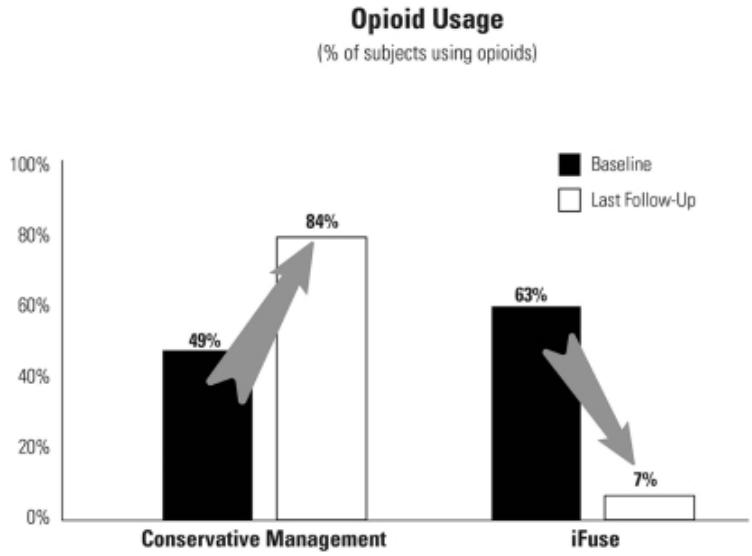
A study published in April 2017 in *Neurosurgery* shows the impact of non-coverage of sacroiliac joint fusion by the healthcare system. In this study, a Spanish neurosurgeon reports the clinical experience of 423 patients seen in his clinic for sacroiliac joint pain. While many patients' pain resolved without intervention, 152 of the patients (36%) had continued sacroiliac joint pain. Of these patients, 74 did not have access to the procedure due to their insurers' denial of coverage and instead were only able to pursue continued non-surgical treatment. Of the remaining 78 patients, 51 underwent radiofrequency ablation of lateral branches of sacral nerve roots and 27 underwent sacroiliac joint fusion with iFuse.

The group treated non-surgically had poor outcomes, including increased pain, disability, and opioid use, as well as worsened work status. By contrast, patients who were able to undergo the iFuse procedure had very large improvements in pain and disability, improved work status, and a decreased incidence of opioid use. The differences in all outcomes (pain, disability, work status, and opioid use) were both statistically significant and clinically profound. The graph below shows the pain scores of the three treatment cohorts followed in this study.



The graph below shows the changes in the percentage of subjects using opioids among the iFuse and conservative care groups in the study. Forty-nine percent of subjects who were not able to access treatment with iFuse were using opioids at the beginning of the study, whereas 80% of them were using opioids at the time of

their final follow-up. In contrast, 63% of the subjects who were able to obtain treatment with iFuse were using opioids prior to treatment, whereas only 7% were using opioids at their final follow-up visit.



There are several important aspects to this study:

- It can be considered a “pseudorandomized trial” in that insurance denials (which dictated which treatment the patient could receive) was not clearly related to any important predictor of clinical outcomes. This enhances the comparability of groups.
- It is the longest reported cohort of non-surgical treatment of sacroiliac joint pain published to date.
- Non-surgical treatment was clearly associated with poor outcomes, consistent with our experience in the US, in which patients receive repeated, and sometimes expensive, non-surgical treatments but do not derive significant benefit.

In addition to clinical evidence, a number of economic publications we financially supported, including those in *ClinicoEconomics and Outcomes Research*, demonstrate that the iFuse procedure provides a cost savings to the healthcare system when compared to non-surgical management over time. One of these studies used data from INSITE to calculate the incremental cost-effectiveness of the iFuse procedure and found it to be similar to that of hip and knee arthroplasty, commonly known as total joint replacement. The two latter procedures are generally accepted as being safe, effective, and highly cost-effective. The incremental cost effectiveness ratio, or ICER, of a procedure or therapy is a common way of quantifying its cost-effectiveness and represents the incremental cost to the healthcare system of providing one additional quality adjusted life-year, obtained by dividing the average cost of the therapy by the average increase in quality-adjusted life years that it achieves. Therapies with ICERs below $50,000 are considered cost-effective and generally gain acceptance. For example, studies have shown that the ICER of total joint replacement surgery for knees is approximately $12,000 and that for hip replacements is approximately $10,000. One study showed the ICER of the iFuse procedure to be $13,000, nearly as cost-effective as knee and hip surgeries, which are both common and well-accepted procedures.

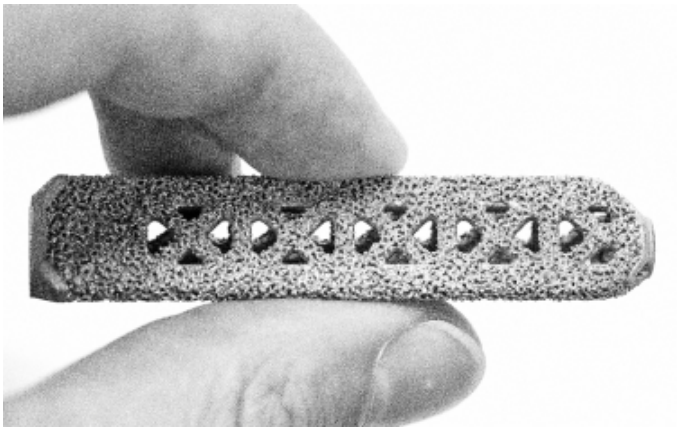
A second study detailed a health economics model examining the cost impact of failing to consider the sacroiliac joint in the diagnosis of patients with low back pain in patients seeking surgery. Taking into account both the prevalence of sacroiliac joint dysfunction and the costs of diagnostic workup and surgical treatment, if a

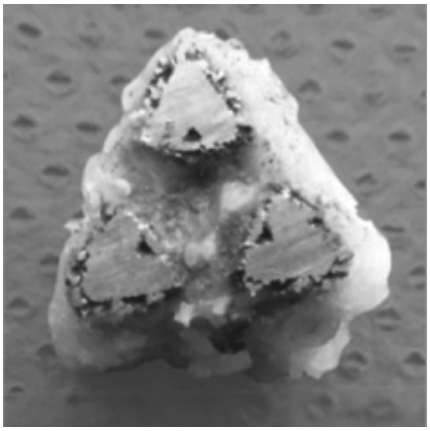
surgeon evaluating a patient with chronic low back pain fails to consider the sacroiliac joint, on average $3,100 more healthcare expenditures will ensue. The study concluded that taking the sacroiliac joint into account can save healthcare systems substantial amounts due primarily to reduction in misdiagnosis and its attendant costs. A third study used data from our two prospective trials conducted in the United States to examine the impact of sacroiliac joint fusion on worker productivity. Results suggest that sacroiliac joint fusion can increase the productivity of affected workers by an average of $6,900 compared to continued non-surgical care.

A third health economic study currently under review for publication examined healthcare costs for low back pain before and after sacroiliac joint fusion in patients in a commercial insurance database. Analysis showed reductions in median low back pain-related healthcare costs after sacroiliac joint fusion compared to before. A break-even analysis for health plan reimbursements for patients undergoing minimally invasive sacroiliac joint fusion on an outpatient basis showed similar cumulative claims for patients not undergoing the procedure within approximately 2.5 years. Following the procedure, per patient costs related to sacroiliac joint pain decrease to approximately $250 per quarter among the group who underwent sacroiliac joint fusion.

Our Second-Generation Implant

Our second-generation iFuse implant, iFuse-3D, shown on the left below, was cleared for marketing by the U.S. Food and Drug Administration in March 2017 and the European Union in May 2017. This patented titanium implant combines the triangular cross-section of the iFuse implant with a proprietary 3D-printed porous surface and fenestrated design. This design also allows the surgeon to fill the implant with ground-up bone before implanting it, which some surgeons believe accelerates bone through-growth. iFuse-3D implants have shown positive bony ingrowth in cell culture and animal studies, whether or not ground-up bone is used, as shown in two peer reviewed studies published in June 2017 in the *International Journal of Spine Surgery*. The image on the right below shows the cross section cut from an iFuse-3D implant removed from an animal as part of the study, and reveals robust growth of bone into the implants.





Coverage and Reimbursement

Coverage and reimbursement for iFuse products and related procedures vary by setting of care, payor type, and region. In the United States, healthcare providers that purchase iFuse products look to various third-party payors, such as Medicare, Medicaid, private commercial insurance companies, health maintenance organizations, accountable care organization, or ACOs, and other healthcare-related organizations, to cover and pay for all or part of the costs of these procedures. These providers bill patients for any applicable deductibles or co-payments. Sales volumes and prices of company products will continue to depend in large part on the availability of coverage and reimbursement from such third-party payors.

The Medicare program is commonly used as a model for how private payors and other governmental payors develop their coverage and reimbursement policies for healthcare items and services, including iFuse procedures. Unless a national coverage policy exists for a particular technology, each of the seven regional Medicare Administrative Contractors is permitted to make its own determination of whether that item or service is covered by Medicare.

Medicare's reimbursement rates for the iFuse procedure vary due to geographic location, the nature of facility in which the procedure is performed (i.e., hospital inpatient department, hospital outpatient department, or ambulatory surgical center) and other factors. Medicare reviews and updates its payment rates and methodologies for these settings of care annually, and rates can change from year to year. In addition, Congress can alter reimbursement rates at any time by mandating changes to Medicare's payment methodologies.

Similarly, private payor coverage policies and reimbursement rates tend to vary across payors and settings of care. Payors continually review the clinical evidence for new technologies and can change their coverage policies without notice or deny payment if the product was not used in accordance with the payor's coverage policy. Payors also review and challenge the prices charged for products and procedures.

In the United States, the American Medical Association, or AMA, generally creates specific billing codes for surgical procedures under a coding system known as Current Procedure Terminology, or CPT, which surgeons must use to bill and receive reimbursement for our iFuse procedure. Once the CPT code is established, the Centers for Medicare & Medicaid Services, or CMS, establishes payment levels and coverage rules under Medicare while private payors establish rates and coverage rules independently.

Prior to our launch of iFuse, Medicare and most private insurance companies reimbursed surgeons for sacroiliac joint fusions using either an established Category I CPT code or an unlisted code. A Category I CPT code is typically assigned to procedures that are consistent with contemporary medical practice and are widely performed. Procedures with a longstanding Category I CPT code are usually reimbursed.

However, effective July 1, 2013, the AMA's CPT Editorial Panel created a new Category III CPT code for fusion of the sacroiliac joint using a minimally invasive or percutaneous approach. Category III CPT codes are used for new and emerging technologies and are reimbursed sporadically. This new code functionally redefined coding for sacroiliac joint fusions because it meant that minimally invasive or percutaneous fusion procedures should not be billed using the general Category I CPT code for sacroiliac fusion surgery. This coding change was accompanied by the establishment of a Medicare hospital outpatient prospective payment rate for the new code.

Following the creation of the new Category III CPT code, a number of papers demonstrating the clinical success of the iFuse procedure were published. As a result of these studies, along with the support of several professional medical specialty societies and leading academic surgeons, the AMA CPT Editorial Panel established a new Category I CPT code specifically for sacroiliac joint fusion surgery using a minimally invasive or percutaneous approach. This new Category I CPT code became effective on January 1, 2015. However, the new code did not immediately lead to positive coverage decisions by payors. In many cases, the payors wanted additional published evidence before deciding to cover the procedure. As a result, positive reimbursement decisions covering the procedure have occurred over the last few years, and some payors are still in the process of making decisions based on the most recent evidence.

In March 2015, our INSITE prospective, randomized controlled multi-center clinical trial was published. In June 2015, the largest spine society in the world, the North American Spine Society, or NASS, published a positive coverage recommendation, based on the clinical evidence, advocating to insurance companies and Medicare Administrative Contractors that sacroiliac joint fusion using a minimally invasive surgical approach should be routinely reimbursed. In March 2015, the International Society for Advancement of Spine Surgery, or ISASS, also published a similar, updated positive advocacy document intended to encourage insurance companies in the United States to reimburse for the procedure.

Coverage decisions for this code are made independently by each private insurance company and each of the seven regional Medicare Administrative Contractors that help manage Medicare. The process of obtaining coverage is laborious. As of June 30, 2016, because of the iFuse clinical evidence, all Medicare Administrative Contractors were covering the procedure. At the time, very few private payors were covering. However, by July 31, 2018, 39 of the largest 66 private payors that we track had positive coverage policies for the procedure, were consistently covering the procedure, or had announced coming future coverage.

Third-party payors, whether governmental or commercial, are also developing increasingly sophisticated methods of controlling healthcare costs. In addition, in the United States, no uniform policy of coverage and reimbursement for medical device products and services exists among third-party payors. Therefore, coverage and reimbursement for medical device products and services can differ significantly from payor to payor. In addition, payors continually review new technologies for possible coverage and can, without notice, deny coverage for these new products and procedures. As a result, the coverage determination process is often a time-consuming and costly process that requires us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be obtained, or maintained if obtained.

In addition to uncertainties surrounding coverage policies, there are periodic changes to reimbursement. Third-party payors regularly update reimbursement amounts and also from time to time revise the methodologies used to determine reimbursement amounts. This includes annual updates to payments to physicians, hospitals, and ambulatory surgical centers for procedures during which our products are used. An example of payment updates is the Medicare program’s updates to hospital and physician payments, which are done on an annual basis using a prescribed statutory formula.

Specialty benefit managers and companies which perform healthcare technology assessments have significant influence on coverage decisions. In May 2016, the ECRI Institute Health Technology Assessment Information Service published a positive review of the iFuse Implant System, citing our clinical evidence. In January 2018, the Blue Cross Blue Shield Association, the franchisor to all 36 Blue Cross and Blue Shield insurers across the United States, wrote a positive coverage recommendation for minimally invasive sacroiliac fusion, but only when performed with iFuse. In February 2018, Milliman Care Guidelines, a Hearst Company publication, also recommended coverage and in May 2018, AIM Specialty Health, owned by Anthem, established coverage for only iFuse and none of our competitors. In July 2018, eviCore published its draft guidelines to be published in final form in October 2018, recommending our iFuse system exclusively for sacroiliac joint fusion or stabilization.

Private Payors. Private payors also decide whether to cover and how much to pay on an individual basis. We target and track 66 of the largest private payors that cover over 200 million lives in the United States as of December 31, 2017. As of July 31, 2018, 39 of the largest 66 private payors were covering regularly, or had announced coverage for, the iFuse procedure, while the remaining private payors were reevaluating their coverage policies. Of these, 23 private payors have issued positive coverage policies exclusive to iFuse for sacroiliac joint fusion because of the clinical evidence. Seventeen of these exclusive coverage policies have published since January 1, 2018, which we believe has contributed to our accelerating sales growth in fiscal year 2018. The private payors covering iFuse exclusively are:

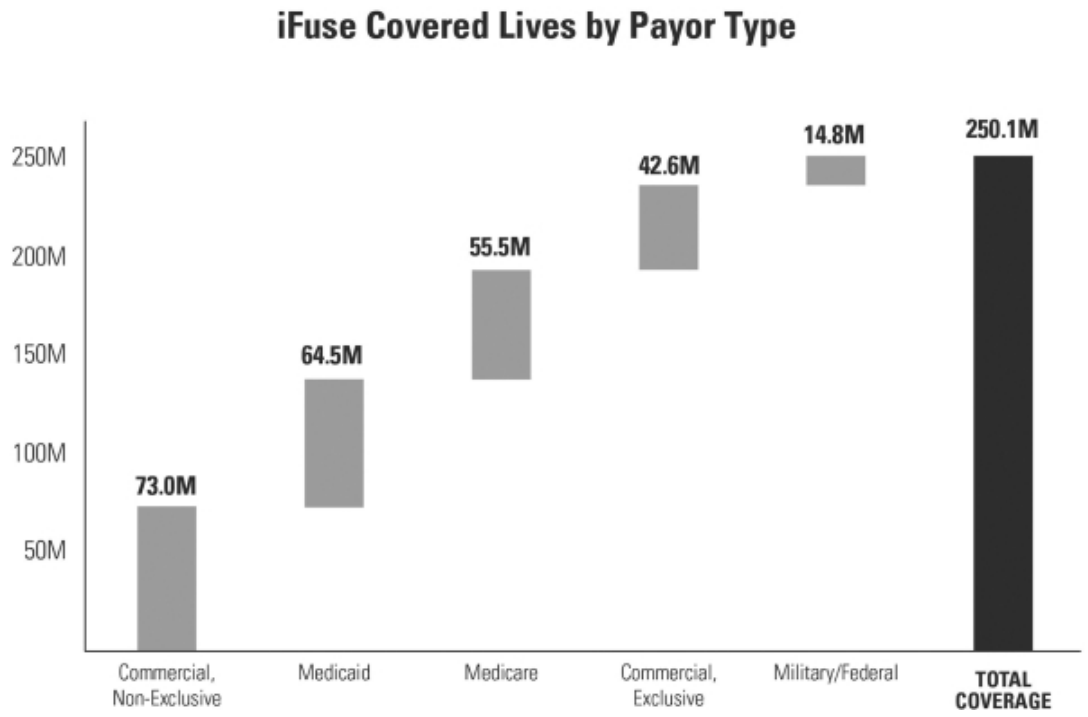
- BCBS Florida
- BCBS-Illinois (HCSC)
- BCBS-New Mexico (HCSC)
- BCBS-Oklahoma (HCSC)
- BCBS-Texas (HCSC)
- BCBS- Montana (HCSC)
- BCBS-Idaho
- BCBS-Kansas City
- BCBS-Kansas
- BCBS-Louisiana
- BCBS-Massachusetts
- BCBS-Minnesota
- BCBS-Mississippi
- BCBS-New Jersey (Horizon)
- BCBS-NY (HealthNow)
- BCBS-Pennsylvania

- BCBS-Independence
- BCBS-Regence
- BCBS-South Carolina
- BCBS-Tennessee
- BCBS-Wyoming
- BCBS-Capital Health
- Select Health

The private payors covering iFuse and other sacroiliac joint fusion products are:

- BCBS-Highmark
- BCBS-Michigan
- BCBS-Nebraska
- BCBS-Vermont
- Emblem Health
- Geisinger Health Plan
- Harvard Pilgrim
- Health New England
- Kaiser California
- Kaiser Northwest
- Kern Health Systems
- Minuteman Health
- Network Health
- Priority Health
- United Healthcare
- Utah Public Employee Health Plan

As of July 31, 2018, U.S. payors covering 250 million lives reimburse for iFuse, 115 million of which are covered by private payors. The chart below shows the overall coverage as of July 31, 2018:



Note that because many individuals are covered by more than one health insurance plan or may switch plans during the year, the total number of covered lives reported by the payors represented above may be larger than the number of individuals who have access to the iFuse procedure through their health insurance provider at any given time.

There are a number of large and small private payors, including Aetna, Cigna, Humana, and Anthem, that are not yet reimbursing for the procedure. Some of these non-covering payors are reevaluating coverage given the latest data, but there can be no assurance they will reach positive coverage decisions. In most cases, the

payors who are not covering are reevaluating coverage. Many payors will only review their coverage policies for a procedure on a scheduled basis, which can be every few months or as infrequently as once per year.

Prior to payor coverage, surgeons have been reluctant to get trained on a procedure for which they could not reliably be reimbursed. While we believe the increased coverage described above will have a positive effect on the number of iFuse procedures and our associated revenue in the future, the effect likely will happen with a lag time: after a positive coverage decision is made, a number of months may pass before it impacts the number of procedures and associated revenue, since the surgeons have to be made aware of the coverage decision, schedule re-examinations of patients who were candidates for surgery and subsequently schedule surgeries for the patients who are still candidates. We believe it takes between 6 and 24 months for surgeons to fully incorporate iFuse into their practices after payors initiate coverage. Further, the administrative burden on surgical practices can be substantial for patients where reimbursement coverage is new, and some surgeons do not believe that the current average surgeon reimbursement is yet adequate to compensate them. However, as reimbursement coverage has improved, surgeon interest in learning to diagnose the sacroiliac joint and perform iFuse procedures has been increasing.

Coverage Outside the United States

Outside the United States, reimbursement levels vary significantly by country, and by region within some countries. Reimbursement is obtained from a variety of sources, including government-sponsored and private health insurance plans, and combinations of both. Some countries will require us to gather additional clinical data before recognizing and granting broader coverage and reimbursement for our products.

In April 2017, the UK's National Institute for Health and Care Excellence, or NICE, published guidance on minimally invasive sacroiliac joint fusion, recommending that the procedure be available to properly diagnosed patients in the UK National Health System. NICE develops guidance and quality standards in health and social care and is a worldwide leader in technology evaluations. The recommendation states that the safety and efficacy of minimally invasive sacroiliac joint fusion surgery is adequate provided that standard arrangements are in place. Use with standard arrangements is the most positive recommendation that NICE can make for an interventional procedure such as MIS SI joint fusion. Additionally, in June 2018, the public hospital system in France announced it will initiate coverage for iFuse exclusively beginning September 1, 2018. Some countries will require us to gather additional clinical data before recognizing and granting broader coverage and reimbursement for our products. It is our intent to complete the requisite clinical studies and obtain coverage and reimbursement approval beyond what we have today in countries where it makes economic sense to do so.

Medical Affairs and Education

We have created a medical affairs team that focuses both internally and externally. Internally, specialized medical knowledge, and practical experience with iFuse are used to help train our sales, marketing, quality, reimbursement, clinical, regulatory, engineering, and product development teams. This same specialized medical knowledge and practical experience allow us to create and execute a wide variety of programs to train the relevant external medical community, to assist them in identifying and diagnosing patients with sacroiliac joint dysfunction and in performing the iFuse procedure. The medical affairs team is led by a board-certified fellowship trained orthopedic spine surgeon. As of June 30, 2018, our U.S. faculty consisted of 80 surgeons, 19 pain management physicians, 11 nurse practitioners/physician's assistants, and 83 physical therapists. These third-party consultants educate surgeons, physician's assistants, nurses, physical therapists, and other healthcare professionals regarding sacroiliac joint diagnosis and the iFuse procedure.

Our surgeon training programs are for orthopedic spine surgeons, neurosurgeons, general orthopedic surgeons, and orthopedic trauma surgeons. Since its introduction, approximately 1,600 surgeons have treated patients with iFuse. We also have a large number of educational programs for the broader medical community including primary care physicians and other healthcare practitioners that may manage a sacroiliac joint patient

non-surgically, such as physical therapists, pain management physicians, and chiropractors. As of June 30, 2018, our medical affairs team and physical therapist consultants have educated over 3,600 physical therapists on sacroiliac joint dysfunction, its diagnosis and iFuse as a potential treatment. We also work to educate case managers, facilities where the iFuse procedure is performed such as hospitals, as well as payors and health plans. For example, as of June 30, 2018, we have trained over 1,200 case managers across the United States. Case managers help patients navigate the healthcare system so that they receive the appropriate treatment. In addition to the continuing education program for case managers, we have created continuing education programs for physical therapists and chiropractors. As of June 30, 2018, our physical therapy continuing education programs were approved in 43 states. These programs include instruction on the diagnosis and non-surgical treatment of sacroiliac joint dysfunction due to degenerative sacroiliitis and sacroiliac joint disruptions. Our medical affairs programs focus on working with leading spine surgeons to educate other surgeons on the differential diagnosis of sacroiliac joint disorders and the use of iFuse. We also work closely with medical societies to raise the awareness of and the appropriate diagnosis of sacroiliac joint dysfunction and the associated treatment options.

Sales and Marketing

We market and sell iFuse primarily through a direct sales force and a small number of third-party distributors. Our target customer base includes approximately 7,500 surgeons who perform spine and/or pelvic surgery, including orthopedic spine surgeons, neurosurgeons, general orthopedic surgeons, and orthopedic trauma surgeons.

Our direct sales organization in the United States is comprised of seven sales regions. Each region is comprised of a number of territory sales managers who act as the primary customer contact. Our territory sales managers have extensive training and experience selling medical devices for spine problems and pain management, generally focusing on emerging technologies and markets. As of June 30, 2018, our territory sales managers were led by seven regional sales managers who reported to our Vice President of U.S. Sales. The Vice President of U.S. Sales reports to our Chief Commercial Officer. As of June 30, 2018, our U.S. sales force consisted of 45 sales representatives directly employed by us and 30 third-party distributors.

In addition to general sales and marketing training, we provide our sales organization with comprehensive, hands-on cadaveric and dry-lab training sessions focusing on the clinical benefits of our products and how to use them. We believe our robust training and professional development programs have been an important component of our success to date and will help support our anticipated future growth. We expect to continue to increase the size of our sales organization in order to increase sales and market penetration and to provide the significant, ongoing level of customer support required by our sales and marketing strategy.

As of June 30, 2018, we had 28 employees working in our European operations, and have established operations in Italy (2010), Germany (2014), and the United Kingdom (2015). As of June 30, 2018, our international sales force consisted of 18 sales representatives directly employed by us and 27 exclusive third-party distributors, which together had sales in 33 countries through June 30, 2018. We anticipate continuing to build our operations in the major European countries while establishing distributor arrangements in smaller ones. We intend to follow a similar model in Europe to the one established in the United States, working with internationally recognized healthcare professional experts as we expand our training and reimbursement activities. As of June 30, 2018, beyond Europe and the United States, surgeons had performed the first iFuse procedures in Australia, Cayman Islands, Hong Kong, Israel, Japan, Kuwait, New Zealand, Taiwan, Turkey, and Saudi Arabia.

Research and Development

Since our initial launch of the iFuse system, we have introduced a number of new instrument enhancements, product enhancements and procedure enhancements. An example is the iFuse-3D implant, which we developed over several years and launched in 2017. The most notable instrument enhancement was the release of the

revamped instruments set which included a number of radiolucent instruments. We also design and manufacture, Class I instruments for our surgeon customers based on special request under our “Non-Standard Product” program.

In 2017, we introduced an instrument set which is cleared for use with Medtronic’s surgical navigation system, allowing the surgeon to visualize the positioning of certain instruments intra-operatively. In March 2018, we introduced surgical pins cleared for use with the Mazor surgical robot, allowing the surgeon to robotically place the guide pin according to a computer-generated surgical plan. We expect to continue developing enhancements to iFuse to meet our customers’ changing needs and improve the surgery’s effectiveness. Our research and development expense for 2016 and 2017 and for the six months ended June 30, 2017 and June 30, 2018 was $6.4 million, $5.5 million, $2.8 million, and $2.5 million, respectively.

Competition

We believe we were the first company to develop, manufacture, and market a minimally invasive implant cleared by the FDA expressly for sacroiliac joint fusion other than a modified screw. Over the past several years, other companies have subsequently recognized the opportunity and have entered the minimally invasive sacroiliac joint fusion market. However, all of these products are either screw-based or allograft products. We expect more competitors to enter into the market and an increased number of new product introductions by existing competitors. Many of our competitors are large, publicly traded companies that can dedicate far greater resources to the minimally invasive sacroiliac joint market than we can. These companies often have wide product offerings for spine and orthopedic surgery, which allow them to bundle products in order to win large hospital group contracts and can increase the barrier to entry for us. For example, some of our competitors offer sacroiliac joint fusion products which integrate with their surgical navigation and robotics platforms, enabling navigation of their procedures or performance of aspects of these procedures by surgical robots. Many of these companies also have much larger sales forces than ours, which allow them to reach more surgeons. We also expect there to be a continued push for non-surgical alternatives.

In the United States, we believe that our primary competitors currently are Globus Medical, Inc., Medtronic plc, XTant Medical Holdings, Inc., and RTI Surgical, Inc. Our primary competitors in Europe are Globus Medical, SIGNUS Medizintechnik GmbH, and XTant Medical Holdings. However, they sell screw-based products, which we believe to be weaker and less able to resist rotation than our triangular iFuse implants. We also compete against non-hardware products, such as allograft bone implants. These allograft products are comprised of human cells or tissues and are regulated by the FDA differently from implantable medical devices made of metallic or other non-tissue based materials.

Based on our commercial experience and market research, we believe iFuse is currently used in the majority of minimally invasive surgical fusions of the sacroiliac joint in the United States. iFuse is the only minimally invasive product for sacroiliac joint fusion commercially available in the United States that, to our knowledge, is supported by published clinical evidence including randomized controlled studies that demonstrate the safety, clinical effectiveness, durability, and economic utility. These benefits are supported by more than 55 published papers.

The following are the primary competitive factors on which companies compete in our industry:

- product and clinical procedure effectiveness;
- ease of surgical technique and use of associated instruments;
- safety;
- published clinical outcomes and evidence;
- sales force knowledge;
- product support and service, and customer service;

- comprehensive training, including disease, anatomy, diagnosis and treatment;
- product innovation and the speed of innovation;
- intellectual property;
- accountability and responsiveness to customers' demands;
- pricing and reimbursement;
- scientific (biomechanics) data; and
- attracting and retaining key personnel.

Intellectual Property

We protect our intellectual property through our pending patent applications and issued patents. As of June 30, 2018, we had been issued 34 patents in the United States, five patents in Japan and one in China. Also, as of June 30, 2018, we have 11 pending patent applications in the United States and seven pending patent applications outside of United States. We have focused the majority of our foreign patent efforts in China, Europe, and Japan.

Generally, our current U.S. patents are expected to expire between August 2024 to March 2033, and our Japanese patents are expected to expire between August 2025 and October 2031.

We have 12 registered trademarks in the United States and have filed for one more. In other countries, we have focused on registering three primary trademarks: "iFuse Implant System," "SI-BONE," and the SI-BONE logo. As of June 30, 2018, we have sought protection for at least two of these trademarks in 60 countries including the 28 European member countries of the Madrid Protocol.

We also rely upon trade secrets, know-how and continuing technological innovation, and may rely upon licensing opportunities in the future, to develop and maintain our competitive position. We may seek to protect our proprietary rights through a variety of methods, including confidentiality agreements and proprietary information agreements with suppliers, employees, consultants and others who may have access to proprietary information, under which they are bound to assign to us inventions made during the term of their employment.

The term of individual patents depends on the legal term for patents in the countries in which they are granted. In most countries, including the United States, the patent term is generally 20 years from the earliest claimed filing date of a non-provisional patent application in the applicable country. There can be no assurance that patents will be issued from any of our pending applications or that, if patents are issued, they will be of sufficient scope or strength to provide meaningful protection for our technology. Notwithstanding the scope of the patent protection available to us, a competitor could develop treatment methods or devices that are not covered by our patents but which compete with our proprietary technology and products. Furthermore, numerous U.S. and foreign issued patents and patent applications owned by third parties exist in the fields in which we are developing products. Because patent applications can take many years to issue, there may be applications unknown to us, which applications may later result in issued patents that our existing or future products or proprietary technologies may be alleged and/or found to infringe.

There has been substantial litigation regarding patent and other intellectual property rights in the medical device industry. In the future, we may need to engage in litigation to enforce patents issued or licensed to us, to protect our trade secrets or know-how and brands, to defend against claims of infringement of the rights of others or to determine the scope and validity of the proprietary rights of others. Litigation could be costly and could divert our attention from other functions and responsibilities. Adverse determinations in litigation could reduce the barriers to entry that we have established for iFuse, or subject us to significant liabilities to third parties, require us to seek licenses from third parties or prevent us from manufacturing, selling or using iFuse, any of which could severely harm our business.

Regulation

Domestic Regulation of Our Products and Business

Our research, development and clinical programs, as well as our manufacturing and marketing operations, are subject to extensive regulation in the United States and other countries. Most notably, all of our products sold in the United States are subject to the FDCA as implemented and enforced by the FDA. The FDA governs the following activities that we perform or that are performed on our behalf, to ensure that medical products distributed domestically or exported internationally are safe and effective for their intended uses:

- product design, development, and manufacture;
- product safety, testing, labeling, and storage;
- record keeping procedures;
- product marketing, sales, distribution and export; and
- post-marketing surveillance, complaint handling, medical device reporting, reporting of deaths, serious injuries or device malfunctions, and repair or recall of products.

There are numerous FDA regulatory requirements governing the clearance or approval and marketing of our products. These include:

- product listing and establishment registration, which helps facilitate FDA inspections and other regulatory action;
- investigational device exemptions to conduct premarket clinical trials, which include extensive monitoring, recordkeeping, and reporting requirements;
- QSR, which requires manufacturers, including third-party manufacturers, to follow stringent design, testing, control, documentation and other quality assurance procedures during all aspects of the manufacturing process;
- labeling regulations and FDA prohibitions against the promotion of products for uncleared, unapproved or off-label use or indication;
- clearance of product modifications that could significantly affect safety or effectiveness or that would constitute a major change in intended use of one of our cleared devices;
- approval of product modifications that affect the safety or effectiveness of one of our approved devices;
- medical device reporting regulations, which require that manufacturers comply with FDA requirements to report if their device may have caused or contributed to a death or serious injury, or has malfunctioned in a way that would likely cause or contribute to a death or serious injury if the malfunction of the device or a similar device were to recur;
- post-approval restrictions or conditions, including post-approval study commitments;
- post-market surveillance regulations, which apply when necessary to protect the public health or to provide additional safety and effectiveness data for the device;
- the FDA's recall authority, whereby it can ask, or under certain conditions order, device manufacturers to recall from the market a product that is in violation of governing laws and regulations;
- regulations pertaining to voluntary recalls; and
- notices of corrections or removals.

We have registered our facility with the FDA as a medical device manufacturer. The FDA has broad post- market and regulatory enforcement powers. We and our third-party manufacturers are subject to announced and unannounced inspections by the FDA to determine our compliance with the QSR and other regulations and these inspections may include the manufacturing facilities of our suppliers.

FDA Premarket Clearance and Approval Requirements

Unless an exemption applies, each medical device we wish to commercially distribute in the United States will require either premarket notification, or 510(k), clearance or approval of a PMA from the FDA. The FDA classifies medical devices into one of three classes. Devices deemed to pose lower risks are placed in either Class I or II, which typically requires the manufacturer to submit to the FDA a premarket notification requesting permission to commercially distribute the device. This process is generally known as 510(k) clearance. Some low risk devices are exempted from this requirement. Devices deemed by the FDA to pose the greatest risks, such as life-sustaining, life-supporting or implantable devices, or devices deemed not substantially equivalent to a previously cleared 510(k) device, are placed in Class III, requiring a PMA. If the FDA agrees that the device is substantially equivalent to a predicate device currently on the market, it will grant 510(k) clearance to commercially market the device. If the FDA determines that the device is "not substantially equivalent" to a previously cleared device, the device is automatically designated as a Class III device. The device sponsor must then fulfill more rigorous PMA requirements, or can request a risk-based classification determination for the device in accordance with the "de novo" process, which is a route to market for novel medical devices that are low to moderate risk and are not substantially equivalent to a predicate device. All of our currently marketed products are Class II devices, subject to 510(k) clearance.

After a device receives 510(k) marketing clearance, any modification that could significantly affect its safety or effectiveness, or that would constitute a major change or modification in its intended use, will require a new 510(k) marketing clearance or, depending on the modification, PMA approval. The determination as to whether or not a modification could significantly affect the device's safety or effectiveness is initially left to the manufacturer using available FDA guidance. Many minor modifications today are accomplished by a "letter to file" in which the manufacture documents the rationale for the change and why a new 510(k) is not required. However, the FDA may review such letters to file to evaluate the regulatory status of the modified product at any time and may require the manufacturer to cease marketing and recall the modified device until 510(k) clearance or PMA approval is obtained. The manufacturer may also be subject to significant regulatory fines or penalties.

Clinical Trials

Clinical trials are generally required to support a PMA application and are sometimes required for 510(k) clearance. Such trials for implanted devices such as iFuse generally require an investigational device exemption application, or IDE, approved in advance by the FDA for a specified number of subjects and study sites, unless the product is deemed a nonsignificant risk device eligible for more abbreviated IDE requirements. Clinical trials are subject to extensive monitoring, recordkeeping and reporting requirements. Clinical trials must be conducted under the oversight of an institutional review board, or IRB, for the relevant clinical trial sites and must comply with FDA regulations, including but not limited to those relating to good clinical practices. To conduct a clinical trial, we also are required to obtain the subjects' informed consent in form and substance that complies with both FDA requirements and state and federal privacy and human subject protection regulations. We, the FDA, or the institutional review board, or IRB, could suspend a clinical trial at any time for various reasons, including a belief that the risks to study subjects outweigh the anticipated benefits. Even if a trial is completed, the results of clinical testing may not adequately demonstrate the safety and effectiveness of the device or may otherwise not be sufficient to obtain FDA clearance or approval to market the product in the United States. Similarly, in Europe the clinical study must be approved by a local ethics committee and in some cases, including studies with high- risk devices, by the ministry of health in the applicable country.

Pervasive and Continuing Regulation

After a device is placed on the market, numerous regulatory requirements continue to apply. These include:

- Product listing and establishment registration, which helps facilitate FDA inspections and other regulatory action;

- QSR, which requires manufacturers, including third-party manufacturers, to follow stringent design, testing, control, documentation, and other quality assurance procedures during all aspects of the manufacturing process;
- labeling regulations and FDA prohibitions against the promotion of products for uncleared, unapproved or off-label use or indication;
- clearance of product modifications that could significantly affect safety or effectiveness or that would constitute a major change in intended use of one of our cleared devices;
- approval of product modifications that affect the safety or effectiveness of one of our approved devices;
- medical device reporting regulations, which require that manufacturers comply with FDA requirements to report if their device may have caused or contributed to a death or serious injury, or has malfunctioned in a way that would likely cause or contribute to a death or serious injury if the malfunction of the device or a similar device were to recur;
- post-approval restrictions or conditions, including post-approval study commitments;
- post-market surveillance regulations, which apply when necessary to protect the public health or to provide additional safety and effectiveness data for the device;
- the FDA's recall authority, whereby it can ask, or under certain conditions order, device manufacturers to recall from the market a product that is in violation of governing laws and regulations;
- regulations pertaining to voluntary recalls; and
- notices of corrections or removals.

The FDA has broad post-market and regulatory enforcement powers. We are subject to unannounced inspections by the FDA to determine our compliance with the QSR and other regulations, and these inspections may include the manufacturing facilities of some of our subcontractors. Failure by us or by our suppliers to comply with applicable regulatory requirements can result in enforcement action by the FDA or other regulatory authorities, which may result in sanctions including, but not limited to:

- untitled letters, warning letters, fines, injunctions, consent decrees, and civil penalties;
- unanticipated expenditures to address or defend such actions
- customer notifications for repair, replacement, refunds;
- recall, detention or seizure of our products;
- operating restrictions or partial suspension or total shutdown of production;
- refusing or delaying our requests for 510(k) clearance or PMA approval of new products or modified products;
- operating restrictions;
- withdrawing 510(k) clearances or PMA approvals that have already been granted;
- refusal to grant export approval for our products; or
- criminal prosecution.

The FDA inspected our facilities in May 2014. As a result, we received a Form 483 with three observations that have been since been corrected following a corrective and preventative action plan. We responded to the Agency in writing and the matter was closed as of October 2014. To date, the FDA has not taken any further actions with respect to the May 2014 inspection or its findings. The FDA inspected our facilities again in December 2016. As a result, no findings were noted.

Promotional Materials—"Off-Label" Promotion

Advertising and promotion of medical devices, in addition to being regulated by the FDA, are also regulated by the Federal Trade Commission and by state regulatory and enforcement authorities. If the FDA determines that our promotional materials or training constitutes promotion of an unapproved use, it could request that we modify our training or promotional materials or subject us to regulatory or enforcement actions, including the issuance of an untitled letter, a warning letter, injunction, seizure, civil fine, or criminal penalties. It is also possible that other federal, state, or foreign enforcement authorities might take action if they consider our promotional or training materials to constitute promotion of an unapproved use, which could result in significant fines or penalties under other statutory authorities, such as laws prohibiting false claims for reimbursement. In that event, our reputation could be damaged and adoption of the products would be impaired.

In addition, under the federal Lanham Act and similar state laws, competitors, and others can initiate litigation relating to advertising claims.

International Regulation of Our Products

Our research, development and clinical programs, as well as our manufacturing and marketing operations, are subject to extensive regulation in other countries. For example, in the EEA our devices are required to comply with the Essential Requirements concerning medical devices. Compliance with these requirements entitles us to affix the CE mark to our medical devices, without which they cannot be commercialized in the EEA.

To demonstrate compliance with the Essential Requirements, we must undergo a conformity assessment procedure, which varies according to the type of medical device and its classification. Except for low risk medical devices (Class I with no measuring function and which are not sterile), where the manufacturer can issue an EC Declaration of Conformity based on a self-assessment of the conformity of its products with the Essential Requirements, a conformity assessment procedure requires the intervention of a Notified Body, which is an organization designated by the competent authorities of a EEA country to conduct conformity assessments. The Notified Body typically audits and examines products' Technical File and the quality system for the manufacture, design and final inspection of our devices before issuing a CE Certificate of Conformity demonstrating compliance with the relevant Essential Requirements. Following the issuance of this CE Certificate of Conformity, we can draw up an EC Declaration of Conformity and affix the CE mark to the products covered by this CE Certificate of Conformity and the EC Declaration of Conformity. We have successfully completed several Notified Body audits since our original certification in November 2010. Following these audits, our Notified Body issued International Standards Organization Certificates and CE Certificates of Conformity allowing us to draw up an EC Declaration of Conformity and affix the CE mark to certain of our devices.

After the product has been CE marked and placed on the market in the EEA, we must comply with a number of regulatory requirements relating to:

- registration of medical devices in individual EEA countries;
- pricing and reimbursement of medical devices;
- establishment of post-marketing surveillance and adverse event reporting procedures;
- Field Safety Corrective Actions, including product recalls and withdrawals; and
- interactions with physicians.

Failure to comply with these requirements may result in enforcement measures being taken against us by the competent authorities of the EEA countries. These can include fines, administrative penalties, compulsory product withdraws, injunctions, and criminal prosecution. Such enforcement measures would have an adverse effect on our capacity to market our products in the EEA and, consequently, on our business and financial position.

Further, the advertising and promotion of our products in the EEA is subject to the provisions of the Medical Devices Directive, Directive 2006/114/EC concerning misleading and comparative advertising, and Directive 2005/29/EC on unfair commercial practices, as well as other national legislation in the EEA countries governing the advertising and promotion of medical devices. These laws may limit or restrict the advertising and promotion of our products to the general public and may impose limitations on our promotional activities with healthcare professionals.

Regulatory Status

In November 2008, we received 510(k) clearance to market our first generation iFuse implant from the FDA. Since 2008, we have received additional FDA 510(k) clearances for new instruments, additional implant sizes and labeling changes. In the United States, the iFuse Implant System is intended for sacroiliac fusion for conditions, including sacroiliac joint dysfunction that is a direct result of sacroiliac joint disruptions and degenerative sacroiliitis. This includes conditions where symptoms began during pregnancy or in the peripartum period and have persisted postpartum for more than six months. Clinical Studies have demonstrated that treatment with the iFuse Implant System improved pain, patient function, and quality of life. In the future, we plan to pursue additional 510(k) clearances for new products and changes to the current indication for iFuse.

In November 2010, we obtained a CE Certificate of Conformity and affixed a CE mark to our iFuse Implant System to allow commercialization of iFuse in the EEA. In the EEA and Switzerland, iFuse is intended for sacroiliac joint fusion. Since 2010, we have added additional instruments, implant sizes and labeling updates and iFuse-3D, our second generation iFuse implant. to our product offerings in Europe. We plan to continue to work with our Notified Body to incorporate new products and labeling updates in our Technical Files for CE marking in European.

Since July 2013, we have obtained approval for iFuse in regions beyond the United States and the EEA, including Australia, Canada, Hong Kong, Israel, Malaysia, New Zealand, Singapore, and Saudi Arabia. Additional product applications are under review in Mexico, India, South Korea, and Taiwan. We are currently collecting information to determine our regulatory strategy in China and Japan.

Healthcare Fraud and Abuse

Federal and state governmental agencies and equivalent foreign authorities subject the healthcare industry to intense regulatory scrutiny, including heightened civil and criminal enforcement efforts. These laws constrain the sales, marketing and other promotional activities of medical device manufacturers by limiting the kinds of financial arrangements we may have with hospitals, physicians and other potential purchases of our products. Federal healthcare fraud and abuse laws apply to our business when a customer submits a claim for an item or service that is reimbursed under Medicare, Medicaid, or other federally funded healthcare programs. Descriptions of some of the laws and regulations that may affect our ability to operate follows.

The federal Anti-Kickback Statute prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, items or services for which payment may be made, in whole or in part, under federal healthcare programs. The term “remuneration” has been broadly interpreted to include anything of value, and the government can establish a violation of the Anti-Kickback Statute without proving that a person or entity had actual knowledge of, or a specific intent to violate, the law. The Anti-Kickback Statute is subject to evolving interpretations and has been applied by government enforcement officials to a number of common business arrangements in the medical device industry. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution; however, those exceptions and safe harbors are drawn narrowly, and there is no exception or safe harbor for many common business activities. Failure to meet all of the requirements of a particular statutory exception or regulatory safe harbor does not make the conduct per se illegal under the Anti-Kickback Statute, but

the legality of the arrangement will be evaluated on a case-by-case basis based on the totality of the facts and circumstances. A number of states also have anti-kickback laws that establish similar prohibitions that may apply to items or services reimbursed by government programs, as well as by any third-party payors, including commercial payors.

The civil False Claims Act prohibits, among other things, knowingly presenting or causing the presentation of a false or fraudulent claim for payment of federal funds, or knowingly making, or causing to be made, a false record or statement material to a false or fraudulent claim to avoid, decrease or conceal an obligation to pay money to the federal government. A claim including items or services resulting from a violation of the Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act. Actions under the False Claims Act may be brought by the government or as a *qui tam* action by a private individual in the name of the government. *Qui tam* actions are filed under seal and impose a mandatory duty on the U.S. Department of Justice to investigate such allegations. Most private citizen actions are declined by the Department of Justice or dismissed by federal courts. However, the investigation costs for a company can be significant and material even if the allegations are without merit. There are also criminal penalties, including imprisonment and criminal fines, for making or presenting a false or fictitious or fraudulent claim to the federal government.

False Claims Act liability is potentially significant in the healthcare industry because the statute provides for treble damages and mandatory penalties of $11,181 to $22,363 per claim (adjusted annually for inflation). Because of the potential for large monetary exposure, healthcare companies often resolve allegations without admissions of liability for significant and sometimes material amounts to avoid the uncertainty of treble damages and per claim penalties that may awarded in litigation proceedings. Moreover, to avoid the risk of exclusion from federal healthcare programs as a result of a False Claims Act settlement, companies may enter into corporate integrity agreements with the government, which may impose substantial costs on companies to ensure compliance.

In addition, HIPAA created federal criminal statutes that prohibit, among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services.

The federal Physician Payment Sunshine Act, implemented by CMS as the Open Payments program, requires manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid, or the Children’s Health Insurance Program to report annually to CMS information related to payments or other “transfers of value” made to physicians and teaching hospitals, and requires applicable manufacturers to report annually to CMS ownership and investment interests held by physicians and their immediate family members and payments or other “transfers of value” to such physician owners.

Certain states also mandate implementation of corporate compliance programs, impose restrictions on device manufacturer marketing practices, and/or require tracking and reporting of gifts, compensation, and other remuneration to healthcare professionals and entities.

The FCPA and similar anti-bribery laws in other countries, such as the UKBA, generally prohibit companies and their intermediaries from making improper payments to government officials and/or other persons for the purpose of obtaining or retaining business. Our policies mandate compliance with these anti-bribery laws.

Violations of these federal and state fraud abuse laws can subject us to administrative, civil and criminal penalties, including imprisonment, substantial fines, penalties, damages, and exclusion from participation in federal healthcare programs, including Medicare and Medicaid.

Data Privacy and Security Laws

We are also subject to various federal, state and foreign laws that protect the confidentiality of certain patient health information, including patient medical records, and restrict the use and disclosure of patient health information by healthcare providers, such as HIPAA, as amended by HITECH, in the United States.

HIPAA requires the notification of patients, and other compliance actions, in the event of a breach of unsecured PHI. If notification to patients of a breach is required, such notification must be provided without unreasonable delay and in no event later than 60 calendar days after discovery of the breach. In addition, if the PHI of 500 or more individuals is improperly used or disclosed, we could be required to report the improper use or disclosure to the U.S. Department of Health and Human Services, or HHS, which would post the violation on its website, and to the media. Failure to comply with the HIPAA privacy and security standards can result in civil monetary penalties up to $55,910 per violation, not to exceed $1.68 million per calendar year for non-compliance of an identical provision, and, in certain circumstances, criminal penalties with fines up to $250,000 per violation and/or imprisonment.

In addition, even when HIPAA does not apply, according to the FTC, failing to take appropriate steps to keep consumers' personal information secure constitutes unfair acts or practices in or affecting commerce in violation of Section 5(a) of the FTCA, 15 U.S.C § 45(a). The FTC expects a company's data security measures to be reasonable and appropriate in light of the sensitivity and volume of consumer information it holds, the size and complexity of its business, and the cost of available tools to improve security and reduce vulnerabilities. Medical data is considered sensitive data that merits stronger safeguards. The FTC's guidance for appropriately securing consumers' personal information is similar to what is required by the HIPAA Security Rule.

In the European Union, we may be subject to laws relating to our collection, control, processing and other use of personal data (i.e. data relating to an identifiable living individual). We process personal data in relation to our operations. We process data of our employees, consultants and certain individuals who may be affiliated with our customers, including physician users of our products. The personal data may include sensitive personal data including health information. The data privacy regime in the EU includes the EU General Data Protection Regulation, or the GDPR, effective on May 25, 2018 and the E-Privacy Directive 2002/58/EC and national laws implementing each of them. Each EU Member State may adopt additional legislation implementing these regulations into its own national data privacy regime and therefore the laws may differ by jurisdiction, sometimes significantly. We need to ensure compliance with the rules in each jurisdiction where we are established or are otherwise subject to local privacy laws.

The new EU-wide GDPR became applicable on May 25, 2018, replacing the data protection laws previously issued by each EU member state based on the Directive 95/46/EC. Unlike the Directive (which needed to be transposed at national level), the GDPR text is directly applicable in each EU Member State, resulting in a more uniform application of data privacy laws across the EU. The GDPR imposes onerous accountability obligations requiring data controllers and processors to maintain a record of their data processing and policies. It requires data controllers to be transparent and disclose to data subjects (in a concise, intelligible and easily accessible form) how their personal information is to be used, imposes limitations on retention of information, increases requirements pertaining to pseudonymized (i.e., key-coded) data, introduces mandatory data breach notification requirements and sets higher standards for data controllers to demonstrate that they have obtained valid consent for certain data processing activities. Fines for non-compliance with the GDPR will be significant—the greater of EUR 20 million or 4% of global turnover. The GDPR provides that EU member states may introduce further conditions, including limitations, to the processing of genetic, biometric, or health data, which could limit our ability to collect, use and share personal data, or could cause our compliance costs to increase, ultimately having an adverse impact on our business.

We are subject to the supervision of local data protection authorities in those jurisdictions where we are established or otherwise subject to applicable law. We depend on a number of third parties in relation to our

provision of our services, a number of which process personal data on our behalf. With each such provider we enter into contractual arrangements to ensure that they only process personal data according to our instructions, and that they have sufficient technical and organizational security measures in place. Where we transfer personal data outside the EEA, we do so in compliance with the relevant data export requirements. We take our data protection obligations seriously, as any improper disclosure, particularly with regard to our customers' sensitive personal data, could negatively impact our business and/or our reputation.

Manufacturing and Supply

We use third-party manufacturers to produce our instruments and implants. The majority of our instruments have secondary manufacturing suppliers and we continually work with additional manufacturers to establish secondary suppliers. Our iFuse implants are currently provided by a single source, Orchid Bio-Coat, a division of Orchid Orthopedic Solutions LLC. In April 2016, we entered into a Quality and Manufacturing Agreement with Orchid MPS Holdings, LLC, or Orchid, which agreement was amended in March 2017, pursuant to which Orchid manufactures certain of our implants in accordance with our specifications. We purchase product under the agreement pursuant to purchase orders we are required to deliver against a blanket purchase order we provide based on our product forecast. However, while we are required to purchase the amounts forecast in the blanket purchase order, we are not required to purchase product in excess of a specified amount of inventory based on our original forecast. During the first year of the agreement, the prices we pay for products are fixed under the agreement; provided that on an annual basis thereafter we will meet with Orchid to review changes in direct costs beyond certain thresholds and may negotiate changes to prices based on such changes in costs. In addition, the prices we pay for product may be increased with our consent to the extent such products are ordered with delivery timelines shorter than agreed upon order timelines. The initial term of the agreement is three years; provided, however, the agreement may be terminated immediately by (a)(i) either party as the result of the other party's bankruptcy or insolvency, (ii) in the case of Orchid, our failure to make payments for products purchased under the agreement if such failure continues for a specified period after notice from Orchid, or (iii) either party as the result of a material breach of the agreement and such breaching party fails to cure such breach within a specified period after notice from the non-breaching party, (b) us in the event Orchid fails to remedy any deficiencies we may identify pursuant to our right to inspect Orchid's facilities under the agreement, and (c) either party with prior written notice as provided under the agreement. To mitigate supply risk, we carry a minimum of two months of reserve stock based on current sales estimates and typically place implant orders with Orchid prior to estimated demand.

We have also added a second source supplier for machine parts. On February 1, 2017, we entered into a non-exclusive Manufacturing, Quality and Supply Agreement with rms Company, or RMS, pursuant to which RMS manufactures certain of our implants in accordance with our specifications, including both purchased and sterilized iFuse-3D implants, as well as uncoated machined implants which are subsequently coated to become our finished first generation iFuse implants. We amended this agreement on July 7, 2017 to provide for our purchase of product pursuant to purchase orders we must deliver against a blanket purchase order we provide based on our product forecast. While we are required to purchase the amounts forecast in the blanket purchase order, we are not required to purchase product in excess of a specified amount of inventory based on our original forecast. During the initial three-year term of the agreement, the prices we pay for products are fixed under the agreement provided that if order volumes deviate from forecasted amounts beyond certain thresholds we or RMS may request to negotiate further price changes. After the initial term, the agreement automatically renews for successive one-year periods; provided, however, the agreement may be terminated early by either party in the event of a material breach of the agreement by the other party or by the insolvency of the other party. We may terminate the agreement at any time in the event (i) RMS fails to ship conforming product and such failure results in delays as specified in the agreement, (ii) RMS changes its manufacturing site without our prior approval, (iii) of a change of control of RMS, or (iv) RMS breaches a non-solicit covenant with respect to our employees or consultants. With respect to our first generation iFuse implant, the parts manufactured by RMS need to be coated by Orchid to finish the goods. RMS is currently our only supplier of iFuse-3D implants.

Aside from quality agreements, we do not currently have manufacturing agreements with any of our other manufacturers and orders are controlled through purchase orders.

We believe that our manufacturing operations, and those of our suppliers, comply with regulations mandated by the FDA, as well as Medical Devices Directive regulations in the EEA. Manufacturing facilities that produce medical devices or component parts intended for distribution world-wide are subject to regulation and periodic planned and unannounced inspection by the FDA and other domestic and international regulatory agencies.

In the United States, products we sell are required to be manufactured in compliance with the FDA's QSR, which covers the methods used in, and the facilities used for, the design, testing, control, manufacturing, labeling, quality assurance, packaging, storage, and shipping. In international markets, we are required to obtain and maintain various quality assurance and quality management certifications. We have obtained the following international certifications: Quality Management System ISO13485, Full Quality Assurance Certification for the design and manufacture of iFuse, and a Design Examination certificate for iFuse.

We are required to demonstrate continuing compliance with applicable regulatory requirements to maintain these certifications and will continue to be periodically inspected by international regulatory authorities for certification purposes. Further, we and certain of our suppliers are required to comply with all applicable regulations and current good manufacturing practices. As set forth above, these FDA and international regulations cover, among other things, the methods and documentation of the design, testing, production, control, quality assurance, labeling, packaging, sterilization, storage, and shipping of our products. Compliance with applicable regulatory requirements is subject to continual review and is monitored rigorously through periodic inspections. If we or our manufacturers fail to adhere to current good manufacturing practice requirements, this could delay production of our products and lead to fines, difficulties in obtaining regulatory approvals, recalls, enforcement actions, including injunctive relief or consent decrees, or other consequences, which could, in turn, have a material adverse effect on our financial condition or results of operations.

Product Liability and Insurance

The manufacture and sale of our products subjects us to the risk of financial exposure to product liability claims. Our products are used in situations in which there is a risk of serious injury or death. We carry insurance policies which we believe to be customary for similar companies in our industry. We cannot assure you that these policies will be sufficient to cover all or substantially all losses that we experience.

We endeavor to maintain executive and organization liability insurance in a form and with aggregate coverage limits that we believe are adequate for our business purposes, but our coverage limits may prove not to be adequate in some circumstances.

Legal Proceedings

We are, and from time to time may be, party to litigation and subject to claims incident to the ordinary course of business. As our growth continues, we may become party to an increasing number of litigation matters and claims. The outcome of litigation and claims cannot be predicted with certainty, and the resolution of these matters could materially affect our future results of operations, cash flow or financial position. We are not presently party to any legal proceedings that in the opinion of management, if determined adversely to us, would individually or taken together have a material adverse effect on our business, operating results, financial condition, or cash flow.

Employees

As of June 30, 2018, we had 168 employees, including sales and marketing, product development, general administrative and accounting, both domestically and internationally. As of June 30, 2018, we had a direct field

sales organization of 72 in the United States and 28 in Europe. In the United States, we sell primarily through our direct field organization, and we have a small number of third-party distributors. None of our employees is subject to a collective bargaining agreement, and we consider our relationship with our employees to be good.

Company History

SI-BONE was founded in 2008 by the main inventor of iFuse and member of our board of directors, orthopedist Mark A. Reiley, M.D., our President, Chief Executive Officer and Chairman, Jeffrey W. Dunn, and orthopedic surgeon Leonard Rudolf, M.D. Dr. Reiley previously invented balloon kyphoplasty and founded Kyphon Inc., which was sold to Medtronic plc in 2007. He also invented the INBONE total ankle replacement system, which was sold to Wright Medical Technology, Inc. in 2008.

Facilities

Our leased headquarters in Santa Clara, California, is comprised of approximately 21,848 square feet. Our headquarters houses our research, product development, marketing, finance, education, and administration functions. We believe our facilities are adequate and suitable for our current needs but in the future we may need additional space.

MANAGEMENT

Executive Officers, Key Employees, and Directors

The following table sets forth information regarding our executive officers, key employees, and directors, as of July 31, 2018:

Name	Age	Position(s)
Executive Officers		
Jeffrey W. Dunn	64	President, Chief Executive Officer and Chairman
Laura A. Francis	51	Chief Financial Officer
Michael A. Pisetsky	40	General Counsel and Chief Compliance Officer
W. Carlton Reckling, M.D.	56	Chief Medical Officer and Vice President, Medical Affairs
Anthony J. Recupero	59	Chief Commercial Officer
Scott A. Yerby, Ph.D.	50	Chief Technology Officer
Key Employees		
Daniel J. Cher, M.D.	54	Vice President, Clinical Affairs
Roxanne J. Dubois	53	Vice President, Regulatory
Nikolas F. Kerr	47	Vice President, Product Marketing
Andrea Mercanti	54	Vice President, EMEA Operations
Joseph W. Powers	59	Vice President, Marketing
Non-Employee Directors		
David P. Bonita, M.D.(2)	43	Director
Timothy E. Davis, Jr.(1)(2)	48	Director
John G. Freund, M.D.(3)	64	Director
Gregory K. Hinckley(1)	71	Director
Karen A. Licitra(2)	59	Director
Timothy B. Petersen(1)	54	Director
Mark A. Reiley, M.D.	68	Director
Keith C. Valentine(3)	50	Director

(1) Member of the audit committee.
(2) Member of the compensation committee.
(3) Member of the nominating and corporate governance committee.

Executive Officers

Jeffrey W. Dunn has served as our President and Chief Executive Officer and as the Chairman of our board of directors since our inception in April 2008. Prior to joining us, Mr. Dunn served as Chief Executive Officer of INBONE Technologies, Inc., an ankle replacement and small bone fusion medical device company, from December 2006 to April 2008, until its sale to Wright Medical Technology, Inc. in April 2008. From August 2000 to June 2006, Mr. Dunn was the Chief Executive Officer of Active Decisions, Inc., a software as a service business, until its sale to Knova Software, Inc. From December 1999 to June 2000, Mr. Dunn was the Chief Executive Officer of Velogic, Inc., an internet performance testing software company, until its sale to Keynote Systems Inc. From June 1999 to December 1999, Mr. Dunn was the Chief Executive Officer of EnterpriseLink

Inc., a provider of enterprise Internet enablement software, until its sale to Merant, Inc. From November 1994 to June 1998, Mr. Dunn was Chief Executive Officer of AccelGraphics Inc., a 3D graphics system supplier, until its sale to Evans and Sutherland Computer Corporation. As well, during his career, Mr. Dunn held executive positions with Evans and Sutherland, Cygnet Systems, Inc., Avnet, Inc. and Xerox Corporation. Mr. Dunn received a B.A. from Colgate University and an M.B.A. from Babson College. We believe Mr. Dunn's experience in the industry, his role as our President and Chief Executive Officer, and his knowledge of our company enable him to make valuable contributions to our board of directors.

Laura A. Francis has served as our Chief Financial Officer since May 2015. Prior to joining us, Ms. Francis was the Chief Financial Officer for Auxogyn, Inc., a women's health company, from December 2012 to September 2014. From September 2004 to December 2012, Ms. Francis served as Vice President of Finance, Chief Financial Officer and Treasurer for Promega Corporation, a life science reagent company. From March 2002 to September 2004, Ms. Francis served as the Chief Financial Officer of Bruker BioSciences Corporation, a public life science instrumentation company. From May 2001 to March 2002, Ms. Francis served as Chief Operating Officer and Chief Financial Officer of Nutra-Park Inc., an agricultural biotechnology company. From April 1999 to May 2001, Ms. Francis was Chief Financial Officer of Hypercosm, Inc., a software company. From October 1995 to April 1999, Ms. Francis was an engagement manager with McKinsey & Company, a consulting firm. Early in her career, Ms. Francis was an audit manager with Coopers & Lybrand, an accounting firm. Ms. Francis received a B.B.A. from the University of Wisconsin and an M.B.A. from Stanford University. She is a Certified Public Accountant (inactive) in the State of California.

Michael A. Pisetsky has served as our General Counsel and Chief Compliance Officer since August 2016. Mr. Pisetsky joined us in March 2015 as our Director of Legal. From August 2011 to March 2015, Mr. Pisetsky practiced law privately, serving as General Counsel to New Wave Surgical Corp. and Mark Properties, Inc. a large operator of shopping centers in the Southeast, among a number of other companies in the medical technology and healthcare services space. From August 2008 to July 2011, Mr. Pisetsky was an Associate in the Business Department at Cooley LLP in Palo Alto, representing a portfolio of medical technology, biotech, healthcare services and general technology clients, from inception to public offering and eventual sale. Mr. Pisetsky received his B.A. with Honors from Harvard College. Mr. Pisetsky received his J.D. (magna cum laude) and M.B.A., including a certificate in Health Sector Management, concurrently from Duke University.

W. Carlton Reckling, M.D. has served as our Vice President, Medical Affairs since April 2012 and our Chief Medical Officer since February 2017. From July 1994 to April 2012, Dr. Reckling was a spine surgeon at the Spine Center in Loveland, Colorado, Rocky Mountain Orthopedic Specialists in Cheyenne, Wyoming, the Center for Spine & Orthopedic Surgery in Cheyenne, Wyoming, Associates in Orthopedic Surgery in Cheyenne, Wyoming, and Ramsey Hospital and Clinics in St. Paul, Minnesota. Dr. Reckling received a B.S. in Chemical Engineering from Northwestern University, an M.D. from Creighton University, and an M.B.A. from the University of Wyoming. He completed his internship and his residency in orthopedic surgery at the University of Minnesota. While in the Minnesota program, he spent time at the Twin Cities Scoliosis Center. He completed his fellowship in spine surgery at Queen's University Medical Centre in Nottingham, England. Dr. Reckling also underwent additional training in general surgery at the University of Minnesota Hospitals and Clinics in Minneapolis, Minnesota. Dr. Reckling is a board-certified orthopedic spine surgeon.

Anthony J. Recupero has served as our Chief Commercial Officer since July 2016. Prior to joining us, Mr. Recupero was the President of Catalyst Performance Advisors, LLC, where he advised leading medical device companies on commercial strategy from June 2013 to July 2016. In July 2008, Mr. Recupero joined Baxano, Inc., a medical device company with minimally invasive products to treat degenerative conditions of the spine affecting the lumbar region, initially as Vice President of Sales and Marketing and was promoted in February 2009 to President and Chief Executive Officer until its acquisition by TranS1 in June 2013. From January 2005 to July 2008, Mr. Recupero was President of Recupero Consulting Group, LLC, where he advised leading medical device companies on commercial strategy. From October 1999 to December 2004, Mr. Recupero was the Vice President of Sales for Kyphon. Early in his career, Mr. Recupero progressed to senior sales

management roles at United States Surgical Corporation and Sulzer Spine-Tech, Inc. Mr. Recupero received a B.A. in Communications from State University of New York at Albany.

Scott A. Yerby, Ph.D. has served as our Chief Technology Officer since January 2011. Prior to joining us, Dr. Yerby served as Vice President, Research and Development for ProMed, Inc., a medical supply company, from June 2009 to January 2011. From May 2007 to June 2009, Dr. Yerby sat on the board of several non-profit organizations. From June 2000 to May 2007, Dr. Yerby served as Vice President of Research and Development for St. Francis Medical Technologies, Inc., a spinal manufacturing company, until its acquisition by Kyphon, Inc. From June 1997 to June 2000, Dr. Yerby served as Director of Experimental Biomechanics at the Palo Alto VA Hospital. Early in his career, Dr. Yerby held appointments as Consulting Assistant Professor at Stanford University in the Department of Mechanical Engineering, Division of Biomechanical Engineering, and the Department of Functional Restoration, Division of Orthopedic Surgery. Dr. Yerby received B.S. and M.S. degrees in Mechanical Engineering and a Ph.D. in Biomedical Engineering, all from the University of California, Davis.

Key Employees

Daniel J. Cher, M.D. has served as our Vice President, Clinical Affairs since January 2012. From May 2008 to December 2011, Dr. Cher served as Vice President of Clinical and Regulatory Affairs at Chestnut Medical Technologies, Inc., a company developing new minimally invasive therapies for interventional neuroradiology. From March 2007 to January 2008, Dr. Cher served as Vice President of Clinical and Regulatory Affairs at Pulmonx Inc., a medical device company developing products for patients with emphysema. From October 2004 to March 2007, Dr. Cher was Medical Director and Vice President of Clinical Research at Kyphon. From October 2003 to September 2004, Dr. Cher was Medical Director for Cardima, Inc., a medical device company developing products for cardiac ablation. Prior to Cardima, Dr. Cher was a statistician at Conceptus Inc., a manufacturer and developer of medical devices aimed at permanent female sterilization. During the last 17 years, Dr. Cher has provided clinical and regulatory strategic consulting services to medical device companies in the San Francisco Bay Area and beyond. Dr. Cher received a B.S. in Biology from Stanford University and an M.D. from Yale University. Dr. Cher completed his residency in internal medicine at the University of Wisconsin, Madison, and at California Pacific Medical Center in San Francisco. He completed additional training in general internal medicine and research methods at Stanford University and the Palo Alto VA Hospital.

Roxanne J. Dubois has served as our Vice President, Regulatory since February 2014. Previously, Ms. Dubois served as our Senior Director, Regulatory from December 2012 to February 2014 and as a consultant for us from February 2012 to December 2012. From February 2009 to February 2014, Ms. Dubois was Vice President, Regulatory as an employee and consultant with Tenaxis Medical Inc., a medical device company. From January 2006 to December 2008, Ms. Dubois served as Vice President, Regulatory and Quality at Carbylan BioSurgery, Inc., a medical device company. From February 2005 to January 2006, Ms. Dubois served as Director, Regulatory at Kyphon. Previously, Ms. Dubois held various regulatory roles at Angiotech BioMaterials Corporation, ReGen Biologic, Inc., and Collagen Corporation. Ms. Dubois received a B.S. in Biochemistry from California Polytechnic State University, San Luis Obispo.

Nikolas F. Kerr has served as our Vice President, Product Marketing since August 2016. Prior to joining us, Mr. Kerr was President of Kerr Consulting Group where he advised leading medical device companies on product strategy. Previously, Mr. Kerr was Senior Director of Marketing for Benvenue Medical from December 2013 to June 2014. From August 2011 to December 2013, Mr. Kerr was Senior Director of Marketing for Baxano. From August 2006 to August 2011, Mr. Kerr served in various marketing roles at Medtronic’s Spinal & Biologics Group including the Director of Global Marketing for the Kyphon division. And from August 1998 to August 2006, Mr. Kerr served in various sales, marketing, and business development roles for Milliken & Company. Mr. Kerr started his career with Credit Suisse as an Analyst for Debt Capital Markets. Mr. Kerr received a B.S. in Finance and Economics and Master of International Business Economics from the Darla Moore School of Business, University of South Carolina.

Andrea Mercanti has served as our Vice President, EMEA Operations since May 2013, and he previously served as our Vice President, European Operations from September 2010 to April 2013. Prior to joining us, Mr. Mercanti was General Director for Italy of MBA Incorporado, an orthopedic, spine and biomaterials distributor, from April 2009 to August 2010. From January 2008 to March 2009, Mr. Mercanti was Vice President, Sales Europe for Europe for Orthofix International N.V., a spinal care solutions company. From December 2006 to December 2007, Mr. Mercanti was Business Unit Director for Italy, Regional Director South Europe, and Director of South Europe and German speaking countries at Kyphon. From December 2005 to November 2006, he served as Regional Director for South Europe for Kyphon. From January 1987 to December 2004, Mr. Mercanti held positions in strategic sales in different divisions of Medtronic, including 12 years in the Neurological Business Unit with spinal cord stimulation treatment for pain and, in the last four years, as Director of Spine Business. Mr. Mercanti received a degree in economics from the Technical and Economics School at the Instituto Milano in Milan, Italy.

Joseph W. Powers has served as our Vice President, Marketing since August 2012. Previously, Mr. Powers served as our Senior Director, Business Development from January 2012 to July 2012 and as our Western Area Sales Director from December 2009 to December 2011. Prior to joining us, Mr. Powers served as Vice President, Clinical/Marketing at Benvenue Medical, Inc., a medical device company that makes minimally invasive systems for spine repair, from March 2007 to April 2009. From January 2004 to March 2007, Mr. Powers served as a Spine Consultant at Kyphon, and from December 2002 to December 2004, Mr. Powers served as Director, Product Marketing at Kyphon. Previously, Mr. Powers held positions in marketing management and project management at Target Therapeutics Inc., a medical device company. Mr. Powers received a B.S. in Biology and Chemical Engineering from Arizona State University.

Non-Employee Directors

David P. Bonita, M.D. has served as a member of our board of directors since April 2014. Since June 2013, Dr. Bonita has also served as a Private Equity Partner at OrbiMed Advisors LLC, an investment company focused on the healthcare industry. From June 2004 to June 2013, Dr. Bonita held various positions at OrbiMed. Prior to OrbiMed, Dr. Bonita was a corporate finance analyst in the healthcare investment banking group of Morgan Stanley from February 1998 to July 1999. From August 1997 to February 1998, Dr. Bonita served as a corporate finance analyst in the healthcare investment banking group of UBS AG, a global financial service firm. Dr. Bonita has served and continues to serve on the board of directors of numerous private and public companies, including Clementia Pharmaceuticals, Inc., a drug developer focusing on bone disorders and other diseases, from June 2013 to present; Tricida, Inc., a drug developer focusing on kidney disease, from January 2014 to present; Loxo Oncology, Inc., a developer of oncological drugs, from October 2013 to December 2017; ViewRay Inc., a designer and manufacturer of radiation therapy and imaging technologies, from January 2008 to June 2018; and Ambit Biosciences Corporation, a drug developer focusing on oncology, autoimmune, and inflammatory diseases from October 2012 to November 2014. Dr. Bonita received a B.A. in Biological Sciences from Harvard University and a joint M.D./M.B.A. from Columbia University. We believe Dr. Bonita's extensive investment experience in the healthcare industry and his experience as a public company director enable him to make valuable contributions to our board of directors.

Timothy E. Davis, Jr. has served as a member of our board of directors since our inception in April 2008. Mr. Davis has served as President and Chief Executive Officer of Active Implants, LLC, a company that provides orthopedic implant solutions, since February 2017. From January 2014 through September 2015, Mr. Davis served as Chief Executive Officer of MicroPort Orthopedics, Inc., a multinational producer of orthopedic products, following the purchase of Wright Medical Group's OrthoRecon Business in January 2014. From December 2006 to January 2014, Mr. Davis served in a number of executive positions for Wright Medical Technology, Inc., a subsidiary of Wright Medical Group, Inc., including President of the OrthoRecon business. From 2004 to 2006, Mr. Davis was a Partner with MB Venture Partners, LLC, a medical technology and life sciences venture capital firm. From 1997 to 2004, Mr. Davis held various positions, ultimately serving as Vice President, with Vector Fund Management, a healthcare and life sciences focused venture capital fund. Early in

his career, Mr. Davis worked in the healthcare management consulting and pharmaceutical industries. Mr. Davis received a B.E. degree in Biomedical Engineering from Vanderbilt University and an M.B.A. from the J.L. Kellogg Graduate School of Management at Northwestern University. We believe Mr. Davis' experience in the industry and his knowledge of our company enable him to make valuable contributions to our board of directors.

John G. Freund, M.D. has served as a member of our board of directors since January 2013. Dr. Freund founded Skyline Ventures, a venture capital firm, in October 1997 and has served as a Managing Director of Skyline since then. Prior to joining Skyline, Dr. Freund served as Managing Director in the private equity group of Chancellor Capital Management, a private capital investment firm. In November 1995, Dr. Freund co-founded Intuitive Surgical, Inc., a medical device company, and served on its board of directors until March 2000. From 1988 to 1994, he held various positions at Acuson Corporation, a maker of ultrasound equipment that is now part of Siemens, most recently as Executive Vice President. Prior to joining Acuson, Dr. Freund was a general partner of Morgan Stanley Venture Partners from 1987 to 1988. From 1982 to 1988, Dr. Freund was at Morgan Stanley & Co., an investment banking company, where he co-founded the Healthcare Group in the Corporate Finance Department in 1983. Dr. Freund has served on the board of directors of Collegium Pharmaceuticals, Inc., a biotechnology company, since 2014, Tetraphase Pharmaceuticals, Inc. since 2012, and Proteon Therapeutics, Inc., a biotechnology company, since 2014. Dr. Freund also serves on the board of directors of six U.S. registered investment funds managed by affiliates of the Capital Group, Inc. He also previously served on the board of directors of four publicly traded companies, Map Pharmaceuticals, Inc., a biopharmaceutical company, MAKO Surgical Corp., a medical device company, Concert Pharmaceuticals, Inc., a biopharmaceutical company and was Chairman of XenoPort, Inc., a biopharmaceutical company. Dr. Freund is a member of the Advisory Board for the Harvard Business School of Healthcare Initiative. Dr. Freund received a B.A. in History from Harvard College, an M.D. from Harvard Medical School, and an M.B.A. from Harvard Business School, where he was a Baker Scholar. We believe Dr. Freund's experience with medical device companies, his role in the venture capital industry, and his knowledge of our company enable him to make valuable contributions to our board of directors.

Gregory K. Hinckley has served as a member of our board of directors since January 2011. Mr. Hinckley served as President of Mentor Graphics Corporation, an electronic design automation company, from January 1999 until his retirement in July 2017, and served on the board of directors from January 1999 to June 2016. From January 1997 to January 1999, he served as Executive Vice President. He has also served as the Chief Financial Officer of Mentor Graphics, first from January 1997 to July 2007 and again from December 2008 to July 2017. Previously, he served on the board of directors of Super Micro Computer, Inc., a manufacturer of servers, from January 2009 to February 2015 and Intermec, Inc., a developer of automated identification and data collection solutions, from July 2004 to September 2013. From August 1992 to January 1997, Mr. Hinckley served as Senior Vice President, Finance of VLSI Technology, Inc., a designer and manufacturer of custom and semi-custom integrated circuits. From January 1989 to November 1991, he served as Senior Vice President and Chief Financial Officer of Crowley Maritime Corporation, a marine solutions, transportation, and logistics company. From February 1983 to January 1989, Mr. Hinckley served as Vice President and Chief Financial Officer, and since April 2017, Mr. Hinckley has served on the board of directors of Bio-Rad Laboratories, a manufacturer and supplier of products and systems for the life science research and healthcare markets. Previously, Mr. Hinckley held a number of senior officer positions with Raychem Corporation, a developer of products and services for the aerospace, automotive and telecommunications industries. Hinckley received a B.A. in Physics from Claremont McKenna College and was a Fulbright Scholar in applied mathematics at Nottingham University. He received an M.S. in Applied Physics from the University of California, San Diego and an M.B.A. from Harvard Business School. We believe Mr. Hinckley's financial experience, his familiarity of serving on the boards of public companies, and his knowledge of our company enable him to make valuable contributions to our board of directors.

Karen A. Licitra has served as a member of our board of directors since August 2015. From January 2014 through August 2015, Ms. Licitra served as Corporate Vice President, Worldwide Government Affairs & Policy at Johnson & Johnson, a medical devices, pharmaceutical, and consumer packaged goods manufacturer. From

December 2011 to December 2013, Ms. Licitra served as the Worldwide Chairman, Global Medical Solutions at Johnson & Johnson. From July 2002 to November 2011, she served as the Company Group Chairman and Worldwide Franchise Chairman at Ethicon Endo-Surgery, Inc., a Johnson & Johnson medical device company. From January 2001 to June 2002, she served as the President of Ethicon Endo-Surgery. Ms. Licitra currently serves on the board of directors of Novadaq Technologies Inc., a provider of proven comprehensive fluorescence imaging solutions. Ms. Licitra received a B.S. in Commerce from Rider College. We believe Ms. Licitra's experience working for medical device companies and her knowledge of our company enable her to make valuable contributions to our board of directors.

Timothy B. Petersen has served as a member of our board of directors since June 2016. Since April 2002, Mr. Petersen has been employed by Arboretum Ventures, Inc. As a Managing Director of the firm, his investments primarily target capital-efficient medical device, health IT and services companies. Mr. Petersen has led investments and held board seats for Arboretum in more than fifteen companies, including HealthMedia (acquired by Johnson & Johnson), Accuri Cytometers Inc. (acquired by Becton Dickinson), IntelliCyt Corporation (acquired by Sartorius AG) and Inogen. Mr. Petersen currently serves on the boards of several private companies in addition to our Company. Mr. Petersen holds a B.A. in Economics from Williams College, an M.S. in Economics from the University of Wisconsin-Madison, and an M.B.A. from the Ross School of Business at the University of Michigan. We believe Mr. Petersen's extensive investment experience in the healthcare industry and his experience as a public company director enable him to make valuable contributions to our board of directors.

Mark A. Reiley, M.D. has served as a member of our board of directors since our inception in April 2008 and as our Chief Medical Officer from inception to September 2016. Dr. Reiley has also served as Chief Medical Officer of Reiley Pharmaceuticals, Inc., a pharmaceutical company, since April 2014. Previously, Dr. Reiley was Chief Medical officer of Fixes-4-Kids, Inc. from March 2009 to October 2010. Prior to joining us, Dr. Reiley was the Chief Medical Officer of INBONE Technologies from December 2004 to April 2008, until its sale to Wright Medical Technology, Inc. in April 2008. From October 1990 to May 2007, Dr. Reiley was Chief Medical Officer of Kyphon Inc., a medical device company focused on the treatment of vertebral compression fractures of the spine, until its sale to Medtronic, Inc. (now Medtronic plc). During that period, from October 2001 to March 2005, Dr. Reiley was Chief Medical officer of Archus Orthopedics Inc., a total facet replacement medical device company. Dr. Reiley was also a founding member of Berkeley Orthopedics Surgical group, where he practiced for over 25 years and trained the students and faculty at the University of California at Berkeley. He has founded and served on the boards of various private companies. Dr. Reiley received a B.A. from Claremont Men's College and an M.D. from George Washington University School of Medicine, and he completed both his orthopedic residency and fellowship at the University of California at San Francisco. We believe Dr. Reiley's experience in the industry, his role as our former Chief Medical Officer, and his knowledge of our company enable him to make valuable contributions to our board of directors.

Keith C. Valentine has served as a member of our board of directors since August 2015. Since June 2015, Mr. Valentine has also served as President, Chief Executive Officer and a member of the board of directors of SeaSpine Holdings Corporation. From January 2007 to January 2015, he served as President and Chief Operating Officer of NuVasive, Inc., a medical device company. From December 2004 to January 2007, he served as President of NuVasive. From January 2001 to December 2004, he held various senior executive roles in marketing, development and operations at NuVasive. Previously, Mr. Valentine served as Vice President of Marketing at ORATEC Interventions, Inc., a medical device company acquired by Smith & Nephew PLC, and spent eight years in various roles with Medtronic including Vice President of Marketing for the Thoracolumbar Division and Group Director for the BMP Biologics program, Interbody Sales Development, and International Sales and Marketing. Mr. Valentine received a B.B.A. in Management and Biomedical Sciences from Western Michigan University. We believe Mr. Valentine's experience working for medical device companies and his knowledge of our company enable him to make valuable contributions to our board of directors.

Family Relationships

There are no family relationships among any of our directors or executive officers.

Director Independence

We intend to apply to have our common stock listed on the Nasdaq Global Market. The listing rules of this stock exchange generally require that a majority of the members of a listed company's board of directors be independent within 12 months following the closing of an initial public offering. Our board of directors has determined that none of our non-employee directors has a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the rules of the Nasdaq Global Market. The independent members of our board of directors will hold separate regularly scheduled executive session meetings at which only independent directors are present.

Audit committee members must also satisfy the independence rules in Securities and Exchange Commission, or SEC, Rule 10A-3 adopted under the Securities Exchange Act of 1934, as amended. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a public company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee: accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries; or be an affiliated person of the listed company or any of its subsidiaries. Each of Messrs. Davis, Hinckley and Petersen qualify as an independent director pursuant to Rule 10A-3. We also intend to satisfy the audit committee independence requirement of the Nasdaq Global Market.

Board Composition

Our board of directors currently consists of nine members, who were elected pursuant to the provision of a voting agreement and the related provisions of our amended and restated certificate of incorporation. Under the terms of this voting agreement, the stockholders who are party to the voting agreement have agreed to vote their respective shares to elect: (1) two directors designated by the holders of a majority of the then outstanding shares of Series 2 common, one of which will be our chief executive officer, currently Mr. Dunn and Dr. Reiley; (2) one director designated by Skyline Venture Partners Qualified Purchaser Fund V, L.P., currently Dr. Freund; (3) one director designated by Montreux Equity Partners IV, LP which is currently vacant; (4) four directors approved by a majority of the members of our board of directors and at least one of whom has relevant industry experience relating to our business, currently Mr. Hinckley, Mr. Davis, Ms. Licitra and Mr. Valentine; (5) one director designated by OrbiMed Advisors LLC or OrbiMed Private Investments V, LP, currently Dr. Bonita; and (6) one director designated by Arboretum IV, LP, currently Mr. Petersen.

The provisions of this voting agreement will terminate upon the closing of this offering, after which there will be no further contractual obligations regarding the election of our directors. Our directors hold office until their successors have been elected and qualified or appointed, or the earlier of their death, resignation, or removal.

Immediately after this offering, our board of directors will be divided into three classes with staggered three-year terms. At each annual meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. Our directors will be divided among the three classes as follows:

- the Class I directors will be Mr. Davis, Dr. Freund, and Dr. Reiley their term will expire at the annual meeting of stockholders to be held in 2019;
- the Class II directors will be Dr. Bonita, Mr. Dunn, and Mr. Hinckley their terms will expire at the annual meeting of stockholders to be held in 2020; and

- the Class III directors will be Mr. Petersen, Ms. Licitra, and Mr. Valentine their terms will expire at the annual meeting of stockholders to be held in 2021.

Directors in a particular class will be elected for three-year terms at the annual meeting of stockholders in the year in which their terms expire. As a result, only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Each director's term continues until the election and qualification of his or her successor, or the earlier of his or her death, resignation, or removal.

Our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect upon the closing of this offering provide that only our board of directors can fill vacant directorships, including newly-created seats. Any additional directorships resulting from an increase in the authorized number of directors would be distributed among the three classes so that, as nearly as possible, each class would consist of one-third of the authorized number of directors.

The classification of our board of directors may have the effect of delaying or preventing changes in our control or management. See "Description of Capital Stock—Anti-Takeover Provisions—Certificate of Incorporation and Bylaws Provisions."

Board Oversight of Risk

One of the key functions of our board of directors is informed oversight of our risk management process. In particular, our board of directors is responsible for monitoring and assessing strategic risk exposure. Our executive officers are responsible for the day-to-day management of the material risks we face. Our board of directors administers its oversight function directly as a whole, as well as through various standing committees of our board of directors that address risks inherent in their respective areas of oversight. For example, our audit committee is responsible for overseeing the management of risks associated with our financial reporting, accounting and auditing matters; our compensation committee oversees the management of risks associated with our compensation policies and programs; and our nominating and corporate governance committee oversees the management of risks associated with director independence, conflicts of interest, composition and organization of our board of directors, director succession planning, and oversight of healthcare, regulatory, and fraud and abuse compliance.

Board Committees

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee. Our board of directors may establish other committees to facilitate the management of our business. Our board of directors and its committees set schedules for meeting throughout the year and can also hold special meetings and act by written consent from time to time, as appropriate. Our board of directors has delegated various responsibilities and authority to its committees as generally described below. The committees will regularly report on their activities and actions to the full board of directors. Each member of each committee of our board of directors qualifies as an independent director in accordance with the listing standards of the Nasdaq Global Market. Each committee of our board of directors has a written charter approved by our board of directors. Upon the closing of this offering, copies of each charter will be posted on our website at www.si-bone.com under the Investor Relations section. The inclusion of our website address in this prospectus does not include or incorporate by reference the information on our website into this prospectus. Members serve on these committees until their resignation or until otherwise determined by our board of directors.

Audit Committee

Our audit committee consists of Messrs. Davis, Hinckley, and Petersen, each of whom satisfies the independence requirements under the Nasdaq Global Market listing standards and Rule 10A-3(b)(1) of the

Exchange Act. The chairman of our audit committee is Mr. Hinckley. Our board of directors has determined that each of Messrs. Davis, Hinckley, and Petersen is an "audit committee financial expert" within the meaning of SEC regulations. Our board of directors has also determined that each member of our audit committee has the requisite financial expertise required under the applicable requirements of the Nasdaq Global Market. In arriving at this determination, the board of directors has examined each audit committee member's scope of experience and the nature of their employment in the corporate finance sector.

The primary purpose of the audit committee is to discharge the responsibilities of our board of directors with respect to our accounting, financial, and other reporting and internal control practices and to oversee our independent registered public accounting firm. Specific responsibilities of our audit committee include:

- selecting a qualified firm to serve as the independent registered public accounting firm to audit our financial statements;
- helping to ensure the independence and performance of the independent registered public accounting firm;
- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and the independent accountants, our interim and year-end operating results;
- developing procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- reviewing our policies on risk assessment and risk management;
- reviewing related party transactions;
- obtaining and reviewing a report by the independent registered public accounting firm at least annually, that describes our internal quality-control procedures, any material issues with such procedures, and any steps taken to deal with such issues when required by applicable law; and
- approving (or, as permitted, pre-approving) all audit and all permissible non-audit service to be performed by the independent registered public accounting firm.

Compensation Committee

Our compensation committee consists of Dr. Bonita, Mr. Davis, and Ms. Licitra, each of whom our board of directors has determined to be independent under the Nasdaq Global Market listing standards and the rules and regulations of the SEC, a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act. The chairman of our compensation committee is Mr. Davis.

The primary purpose of our compensation committee is to discharge the responsibilities of our board of directors to oversee our compensation policies, plans, and programs and to review and determine the compensation to be paid to our executive officers, directors, and other senior management, as appropriate. Specific responsibilities of our compensation committee include:

- reviewing and approving, or recommending that our board of directors approve, the compensation of our executive officers;
- reviewing and recommending to our board of directors the compensation of our directors;
- reviewing and approving, or recommending that our board of directors approve, the terms of compensatory arrangements with our executive officers;
- administering our stock and equity incentive plans;
- selecting independent compensation consultants and assessing whether there are any conflicts of interest with any of the committee's compensation advisors;

- reviewing and approving, or recommending that our board of directors approve, incentive compensation and equity plans, severance agreements, change-of-control protections, and any other compensatory arrangements for our executive officers and other senior management, as appropriate;
- reviewing and establishing general policies relating to compensation and benefits of our employees; and
- reviewing our overall compensation philosophy.

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee consists of Dr. Freund and Mr. Valentine, each of whom our board of directors has determined to be independent under the Nasdaq Global Market listing standards. The chairman of our nominating and corporate governance committee is Mr. Valentine.

Specific responsibilities of our nominating and corporate governance committee include:

- identifying, evaluating, and selecting, or recommending that our board of directors approve, nominees for election to our board of directors;
- evaluating the performance of our board of directors and of individual directors;
- reviewing developments in corporate governance practices;
- evaluating the adequacy of our corporate governance practices and reporting;
- reviewing management succession plans;
- developing and making recommendations to our board of directors regarding corporate governance guidelines and matters, and
- overseeing administration of our healthcare compliance program.

Code of Conduct

Our board of directors has adopted a code of conduct. The code of conduct applies to all of our employees, officers, directors, contractors, consultants, suppliers, and agents. Upon the closing of this offering, the full text of our code of conduct will be posted on our website at www.si-bone.com under the Investor Relations section. We intend to disclose future amendments to, or waivers of, our code of conduct, as and to the extent required by SEC regulations, at the same location on our website identified above and in public filings. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website to be part of this prospectus or in deciding whether to purchase shares of our common stock.

Compensation Committee Interlocks and Insider Participation

As noted above, the compensation committee of our board of directors consists of Dr. Bonita, Mr. Davis, and Ms. Licitra. During 2017, our compensation committee consisted of Dr. Bonita, Mr. Davis, and Ms. Licitra. None of the members of the compensation committee is currently, or has been at any time, one of our officers or employees. None of our executive officers serves, or served during 2017 as a member of the board of directors or compensation committee of any other entity that has or has had one or more executive officers serving as a member of our board of directors or our compensation committee.

Non-Employee Director Compensation

Currently, we pay our non-employee directors who are not representatives of our stockholders a fee of $2,000 per month as compensation for their service on our board of directors. We also have a policy of

reimbursing all of our non-employee directors for their reasonable out-of-pocket expenses in connection with attending board of directors and committee meetings. From time to time we have granted stock options to certain of our non-employee directors.

2017 Non-Employee Director Compensation Table

The following table sets forth information regarding the compensation paid to our non-employee directors during 2017.

Name	Fees Earned or Paid in Cash	Option Awards(1)(2)	Total
David P. Bonita, M.D.	$ —	$ —	$ —
Timothy E. Davis, Jr.	24,000	—	24,000
John G. Freund, M.D.	—	—	—
Gregory K. Hinckley	24,000	—	24,000
Karen A. Licitra	24,000	—	24,000
Timothy B. Petersen	—	—	—
Mark A. Reiley, M.D.	—	—	—
Keith C. Valentine	24,000	—	24,000

(1) In March 2017, we granted options to purchase 400,000 shares to each of our non-employee directors, excluding Dr. Reiley, with an exercise price of $0.33 per share, vesting in equal monthly installments over three years commencing upon the closing of an initial public offering, subject to the non-employee director's continued service with us through each relevant vesting date, and are early exercisable upon the closing of an initial public offering. The shares subject to the options will fully vest immediately prior to the effective time of a change in control, subject to the non-employee director's continued service with us on the effective date of such change in control.

(2) In accordance with SEC rules, this column does not include the value of option awards granted to the directors in March 2017, as more fully described in footnote (1) above. These option awards are subject to certain liquidity events and time-based vesting components. As of the grant date and June 30, 2018, the liquidity events were considered not "probable" of occurring. As a result, the grant date fair value of each of these option awards, for purposes of this table, is $0. Assuming that all of the vesting conditions to the option awards were met, the estimated value of each of these option awards as of the grant date would be $69,154. The table below lists the aggregate number of shares subject to outstanding stock options held by each of our non-employee directors as of December 31, 2017.

Name	Number of Shares Subject to Outstanding Options as of December 31, 2017
David P. Bonita, M.D.	400,000
Timothy E. Davis, Jr.	997,163
John G. Freund, M.D.	400,000
Gregory K. Hinckley	400,000
Karen A. Licitra	785,349
Timothy B. Petersen	400,000
Mark A. Reiley, M.D.	2,665,104
Keith C. Valentine	785,349

EXECUTIVE COMPENSATION

Summary Compensation Table

The following table sets forth information regarding the compensation of our chief executive officer and our two other most highly compensated executive officers during the year ended December 31, 2017. We refer to these individuals as our "named executive officers."

Name and Principal Position	Year	Salary	Bonus(1)	Option Awards(2)	All Other Compensation(3)	Total
Jeffrey W. Dunn *President and Chief Executive Officer*	2017	$437,750	$249,518	$ 251,618	$ 239,889(4)	$1,178,775
Laura A. Francis *Chief Financial Officer*	2017	302,315	120,624	77,073	18,458	518,470
Anthony J. Recupero *Chief Commercial Officer*	2017	315,000	142,924	107,503	18,468	583,895

(1) Represents payments upon the achievement of 2017 corporate goals as well as individual objectives, which were paid in January 2018. Our corporate goals included revenue growth, cash flow, expense, profitability management, reimbursement progress and clinical milestones.

(2) Represents the aggregate grant date fair value of option awards granted to the officer in 2017 and the incremental fair value of stock options repriced in December 2017, computed in accordance with FASB ASC Topic 718. For a discussion of the assumptions made in determining the grant date fair value of our equity awards, see Note 10 to our audited consolidated financial statements included elsewhere in this prospectus.

(3) Amounts reported include medical and life insurance premiums paid by us on behalf of our named executive officers.

(4) Amount includes $231,914 of principal and interest forgiven by us in March 2017, in connection with a loan we made to Mr. Dunn in February 2014. The remaining balance of the loan was forgiven by us in January 2018. For a more detailed description of this loan, see "Certain Relationships and Related Party Transactions—Loans."

Emerging Growth Company Status

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or JOBS Act. As an emerging growth company we will be exempt from certain requirements related to executive compensation, including, but not limited to, the requirements to hold a nonbinding advisory vote on executive compensation and to provide information relating to the ratio of total compensation of our Chief Executive Officer to the median of the annual total compensation of all of our employees, each as required by the Investor Protection and Securities Reform Act of 2010, which is part of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010.

Outstanding Equity Awards as of December 31, 2017

The following table sets forth information regarding each unexercised stock option and all unvested stock held by each of our named executive officers as of December 31, 2017. Unless otherwise indicated below, all of these awards were made pursuant to our 2008 Stock Plan.

All of the options granted to our named executive officers are immediately exercisable with respect to all of the option shares, subject to our repurchase right in the event the officer's service terminates prior to vesting in

the shares. We refer to option shares that are subject to our right of repurchase as "unvested shares" and those that are no longer subject to our right of repurchase as "vested" shares.

	Option Awards					
Name	Grant Date	Vesting Commencement Date	Number of Securities Underlying Unexercised Options Vested (#)	Number of Securities Underlying Unexercised Options Unvested (#)(1)(2)	Option Exercise Price ($)	Option Expiration Date
Jeffrey W. Dunn	07/21/14	07/21/14	4,193,586	715,978	0.19	07/20/24
	05/26/15	04/15/15	1,217,287	608,643	0.24(3)	05/25/25
	07/26/16	06/02/16	775,588	1,292,648	0.24	07/25/26
	03/01/17	09/06/17	142,044	2,130,656	0.26(4)	03/01/27
Laura A. Francis	05/26/15	05/26/15	204,513	—	0.24(3)	05/25/25
	05/26/15	05/26/15	2,009,863	1,214,335	0.24(3)	05/25/25
	07/26/16	06/02/16	147,715	246,192	0.24	07/25/26
	03/01/17	09/06/17	43,509	652,641	0.26(4)	03/01/27
Anthony J. Recupero.	07/26/16	07/05/16	800,639	1,459,989	0.24	07/25/26
	03/01/17	09/06/17	60,688	910,312	0.26(4)	03/01/27

(1) Shares subject to the option vests in equal monthly installments over four years commencing on the vesting commencement date specified above, subject to the continued service with us through each relevant vesting date.
(2) The unvested shares subject to these options are subject to accelerated vesting as described in "Equity Acceleration" below.
(3) This stock option was repriced in July 2016.
(4) This stock option was repriced in December 2017.

Pension Benefits

Our named executive officers did not participate in, or otherwise, receive any benefits under, any pension or retirement plan sponsored by us in 2017.

Nonqualified Deferred Compensation

Our named executive officers did not participate in, or earn any benefits under, a non-qualified deferred compensation plan sponsored by us in 2017.

Employment Arrangements

We have entered into employment agreements with each of our named executive officers setting forth the initial terms of the officer's employment with us and providing that the officer's employment will be "at will" and may be terminated at any time. The severance benefits for our named executive officers are described in "Severance and Change in Control Agreement" below.

Employment Agreements

Jeffrey W. Dunn

In December 2009, we entered into an offer letter with Jeffrey W. Dunn, our President and Chief Executive Officer. Mr. Dunn's annual base salary as of January 1, 2017 was $437,750 and Mr. Dunn was eligible for annual variable compensation up to 50% of his base salary. As of April 1, 2018, Mr. Dunn's annual base salary was increased to $451,320. Upon the closing of this offering, Mr. Dunn's annual base salary will be increased to $540,000 and Mr. Dunn will be eligible for annual variable compensation up to 75% of his base salary.

Under the terms of Mr. Dunn's offer letter, if he is subject to an "involuntary termination," then we will continue to pay his base salary and reimburse his COBRA premiums for up to 12 months. An involuntary termination occurs if Mr. Dunn's employment is terminated by us without "cause" at any time or if he resigns for "good reason" within 12 months after a "change in control" (as such terms are defined in the offer letter). These severance benefits are contingent on Mr. Dunn's return of all of our property, execution of a release of claims, and resignation from our board of directors, if applicable.

In March 2017, Mr. Dunn was granted an option to purchase 2,272,700 shares of common stock with an exercise price of $0.33 per share vesting in equal monthly installments over four years commencing upon the closing of an initial public offering, subject to Mr. Dunn's continued service with us through each relevant vesting date. In the event a change in control occurs prior to the closing of an initial public offering, this option will terminate immediately prior to the effective time of the change in control. In December 2017, this option was repriced with an exercise price of $0.26 per share and the vesting commencement date was set at September 6, 2017.

Laura A. Francis

In April 2015, we entered into an offer letter with Laura A. Francis, our Chief Financial Officer. Ms. Francis' annual base salary as of January 1, 2017 was $302,315 and Ms. Francis was eligible for annual variable compensation up to 35% of her base salary. As of April 1, 2018, Ms. Francis' annual base salary was increased to $314,106. Upon the closing of this offering, Ms. Francis's annual base salary will be increased to $350,000 and Ms. Francis will be eligible for annual variable compensation up to 45% of her base salary.

Under the terms of her offer letter, Ms. Francis was granted an option to purchase a number of shares of common stock equal to 1.25% of the fully-diluted capitalization as of her first day of employment, or 3,328,711 shares, with an exercise price of $0.44 per share. The shares subject to this option vest as to 25% on the 12-month anniversary of May 26, 2015 and 1/36th of the balance of the shares vest each month thereafter, subject to Ms. Francis' continued service with us through each relevant vesting date. Ms. Francis' offer letter provides that she will vest in 50% of the unvested option shares if (a) we are subject to a change in control (as defined in the offer letter) before her service with us terminates and (b) she is subject to an involuntary termination (as defined in the offer letter) within 12 months after the change in control. In addition, in the event of Ms. Francis' termination for any reason other than for cause (as defined in the offer letter) we will make a lump sum payment to her equal to three months of her then-current base salary. These severance benefits are contingent on Ms. Francis' return of all of our property and execution of a release of claims.

In March 2017, we entered into an amended and restated letter agreement with Ms. Francis that provides that she will be eligible to receive a bonus of $200,000 if we complete a qualified IPO (as defined in the letter agreement) and she remains an employee in good standing through the date that is 30 trading days after such qualified IPO, which will be paid 60 days thereafter.

In March 2017, Ms. Francis was granted an option to purchase 696,150 shares of common stock with an exercise price of $0.33 per share vesting in equal monthly installments over four years commencing upon the closing of an initial public offering, subject to Ms. Francis' continued service with us through each relevant vesting date. In the event a change in control occurs prior to the closing of an initial public offering, this option will terminate immediately prior to the effective time of the change in control. In December 2017, this option was repriced with an exercise price of $0.26 per share and the vesting commencement date was set at September 6, 2017.

Anthony J. Recupero

In June 2016, we entered into an offer letter with Anthony J. Recupero, our Chief Commercial Officer. Mr. Recupero's annual base salary as of January 1, 2017 was $315,000 and Mr. Recupero was eligible for annual

variable compensation up to 40% of his base salary. Upon the closing of this offering, Mr. Recupero's annual base salary will be increased to $330,000 and Mr. Recupero will be eligible for annual variable compensation up to 45% of his base salary.

As of April 1, 2018, Mr. Recupero's annual base salary was increased to $325,710. Under the terms of his offer letter, Mr. Recupero was granted an option to purchase a number of shares of common stock equal to 0.7% of the fully-diluted capitalization as of his first day of employment, or 2,260,628 shares, with an exercise price of $0.24 per share. The shares subject to this option vest as to 25% on the 12-month anniversary of July 5, 2016 and 1/36th of the balance of the shares vest each month thereafter, subject to Mr. Recupero's continued service with us through each relevant vesting date. Mr. Recupero's offer letter provides that in the event we terminate him for any reason other than for cause (as defined in the letter agreement), we will provide him with the following benefits within 60 calendar days of his termination date:

- A lump sum payment equal to three months of his then-current base salary; and
- A lump sum payment in the amount of $4,000.

Mr. Recupero's offer letter further provides that in the event we terminate him for any reason other than for cause or if he resigns for good reason (as defined in the letter agreement) either three months prior to or 12 months following the consummation of a change in control (as defined in the letter agreement), we will provide him with the following benefits within 60 calendar days of his termination date:

- A lump sum payment equal to six months of his then-current base salary;
- A lump sum payment in the amount of $8,000;
- Accelerated vesting of any unvested option shares such that 100% of the unvested option shares shall vest as of his termination date; and
- A lump sum equal to his target annual bonus, prorated for partial months of service prior to his termination date.

These severance benefits are contingent on Mr. Recupero returning all of our property, continued adherence to the terms and condition of the proprietary information and inventions agreement between us and Mr. Recupero, resignation from our board of directors, if applicable, and execution and non-revocation of a release of claims.

In March 2017, Mr. Recupero was granted an option to purchase for 971,000 shares of common stock with an exercise price of $0.33 per share vesting in equal monthly installments over four years commencing upon the closing of an initial public offering, subject to Mr. Recupero's continued service with us through each relevant vesting date. In the event a change in control occurs prior to the closing of an initial public offering, this option will terminate immediately prior to the effective time of the change in control. In December 2017, this option was repriced with an exercise price of $0.26 per share and the vesting commencement date was set at September 6, 2017.

Severance and Change in Control Agreement

In March 2016, we entered into a severance letter agreement with Ms. Francis. This agreement provides that in the event we terminate her for any reason other than for cause (as defined in the letter agreement), we will provide her the following benefits within 60 calendar days of her termination date:

- A lump sum payment equal to three months of her then-current base salary; and
- A lump sum payment in the amount of $5,700.

This agreement further provides that in the event we terminate Ms. Francis for any reason other than for cause or if she resigns for good reason (as defined in the letter agreement) either three months prior to or 12

months following the consummation of a change in control (as defined in the letter agreement), we will provide her the following benefits within 60 calendar days of her termination date:

- A lump sum payment equal to six months of her then-current base salary;
- A lump sum payment in the amount of $11,300;
- Accelerated vesting of any unvested option shares such that 100% of the unvested option shares shall vest as of her termination date; and
- A lump sum equal to her target annual bonus, prorated for partial months of service prior to her termination date.

These severance benefits are contingent on Ms. Francis returning all of our property, continued adherence to the terms and condition of the proprietary information and inventions agreement between us and Ms. Francis, resigning from our board of directors, if applicable, and executing and not revoking a release of claims. The severance letter agreement for Ms. Francis supersede the acceleration provisions set forth in her offer letter.

Equity Acceleration

Mr. Dunn's options to purchase 2,068,236 shares granted in July 2016 and 2,272,700 shares granted in March 2017 will fully vest if we are subject to a change in control before Mr. Dunn's service terminates, provided he agrees to provide services to the acquiring company for a period not to exceed six months. Mr. Dunn's option for 1,825,930 shares granted in May 2015, will vest as to 50% of the option shares if we are subject to a change in control.

In the case of all the options granted to Ms. Francis and Mr. Recupero, the accelerated vesting of any unvested option shares will occur as set forth above in "Employment Agreements" and "Severance and Change in Control Agreement."

Equity Plans

The principal features of our equity plans are summarized below. These summaries are qualified in their entirety by reference to the actual verbiage of the plans, which are filed as exhibits to the registration statement of which this prospectus is a part.

2018 Equity Incentive Plan

Our board of directors adopted our 2018 Equity Incentive Plan, or the 2018 Plan, in July 2018, and our stockholders subsequently approved the 2018 Plan in 2018. The 2018 Plan will become effective immediately upon the execution of the underwriting agreement related to this offering. Once the 2018 Plan becomes effective, no further grants will be made under our 2008 Stock Plan, which is described below.

Our 2018 Plan provides for the grant of incentive stock options, or ISOs, within the meaning of Section 422 of the Internal Revenue Code of 1986, or the Code, to our employees and our parent and subsidiary corporations' employees, and for the grant of nonstatutory stock options, or NSOs, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance-based stock awards, and other forms of equity compensation to our employees, directors, and consultants. Addition, our 2018 Plan provides for the grant of performance cash awards to our employees, directors and consultants.

Share Reserve. The maximum number of shares of our common stock that may be issued under our 2018 Plan is 46,377,691. The number of shares of our common stock reserved for issuance under our 2018 Plan will automatically increase on January 1 of each year, beginning on January 1, 2019, and continuing through and

including January 1, 2028, by 5% of the total number of shares of our capital stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares determined by our board of directors. The maximum number of shares that may be issued upon the exercise of ISOs under our 2018 Plan is three times the share reserve.

Shares issued under our 2018 Plan will be authorized but unissued or reacquired shares of our common stock. Shares subject to stock awards granted under our 2018 Plan that expire or terminate without being exercised in full, or that are paid out in cash rather than in shares, will not reduce the number of shares available for issuance under our 2018 Plan. Additionally, shares issued pursuant to stock awards under our 2018 Plan that we repurchase or that are forfeited, as well as shares used to pay the exercise price of a stock award or to satisfy the tax withholding obligations related to a stock award, will become available for future grant under our 2018 Plan.

Plan Administration. Our board of directors, or a duly authorized committee of our board of directors, will administer our 2018 Plan. Our board of directors may also delegate to one or more of our officers the authority to (1) designate employees (other than officers) to receive specified stock awards, and (2) determine the number of shares subject to such stock awards. Subject to the terms of our 2018 Plan, the board of directors has the authority to determine the terms of awards, including recipients, the exercise, purchase or strike price of stock awards, if any, the number of shares subject to each stock award, the fair market value of a share of our common stock, the vesting schedule applicable to the awards, together with any vesting acceleration, and the form of consideration, if any, payable upon exercise or settlement of the award and the terms of the award agreements for use under our 2018 Plan.

Our board of directors has the power to modify outstanding awards under our 2018 Plan. Our board of directors has the authority to reprice any outstanding option or stock appreciation right, cancel any outstanding stock award in exchange for new stock awards, cash or other consideration, or take any other action that is treated as a repricing under generally accepted accounting principles, with the consent of any adversely affected participant.

Stock Options. Incentive stock options and nonstatutory stock options are granted pursuant to stock option agreements adopted by the plan administrator. The plan administrator determines the exercise price for stock options, within the terms and conditions of the 2018 Plan, provided that the exercise price of a stock option generally cannot be less than 100% of the fair market value of our common stock on the date of grant. Options granted under the 2018 Plan vest at the rate specified in the stock option agreement as determined by the plan administrator.

Restricted Stock Unit Awards. Restricted stock unit awards are granted pursuant to restricted stock unit award agreements adopted by the plan administrator. Restricted stock unit awards may be granted in consideration for any form of legal consideration that may be acceptable to our board of directors and permissible under applicable law. A restricted stock unit award may be settled by cash, delivery of stock, a combination of cash and stock as deemed appropriate by the plan administrator, or in any other form of consideration set forth in the restricted stock unit award agreement. Additionally, dividend equivalents may be credited in respect of shares covered by a restricted stock unit award. Except as otherwise provided in the applicable award agreement, restricted stock units that have not vested will be forfeited upon the participant's cessation of continuous service for any reason.

Restricted Stock Awards. Restricted stock awards are granted pursuant to restricted stock award agreements adopted by the plan administrator. A restricted stock award may be awarded in consideration for cash, check, bank draft, or money order, past services to us or any other form of legal consideration (including future services) that may be acceptable to our board of directors and permissible under applicable law. The plan administrator determines the terms and conditions of restricted stock awards, including vesting and forfeiture terms. If a participant's service relationship with us ceases for any reason, we may receive through a forfeiture condition or

a repurchase right any or all of the shares of common stock held by the participant that have not vested as of the date the participant terminates service with us.

Stock Appreciation Rights. Stock appreciation rights are granted pursuant to stock appreciation grant agreements adopted by the plan administrator. The plan administrator determines the purchase price or strike price for a stock appreciation right, which generally cannot be less than 100% of the fair market value of our common stock on the date of grant. A stock appreciation right granted under the 2018 Plan vests at the rate specified in the stock appreciation right agreement as determined by the plan administrator.

Performance Awards. Our 2018 Plan permits the grant of performance-based stock and cash awards. Our compensation committee can structure such awards so that the stock or cash will be issued or paid pursuant to such award only following the achievement of certain pre-established performance goals during a designated performance period.

Our compensation committee may establish performance goals by selecting from one or more of the following performance criteria: (1) earnings (including earnings per share and net earnings); (2) earnings before interest, taxes and depreciation; (3) earnings before interest, taxes, depreciation and amortization; (4) total stockholder return; (5) return on equity or average stockholder's equity; (6) return on assets, investment, or capital employed; (7) stock price; (8) margin (including gross margin); (9) income (before or after taxes); (10) operating income; (11) operating income after taxes; (12) pre-tax profit; (13) operating cash flow; (14) sales or revenue targets; (15) increases in revenue or product revenue; (16) expenses and cost reduction goals; (17) improvement in or attainment of working capital levels; (18) economic value added (or an equivalent metric); (19) market share; (20) cash flow; (21) cash flow per share; (22) share price performance; (23) debt reduction; (24) customer satisfaction; (25) stockholders' equity; (26) capital expenditures; (27) debt levels; (28) operating profit or net operating profit; (29) workforce diversity; (30) growth of net income or operating income; (31) billings; (32) pre-clinical development related compound goals; (33) financing; (34) regulatory milestones, including approval of a compound; (35) stockholder liquidity; (36) corporate governance and compliance; (37) product commercialization; (38) intellectual property; (39) personnel matters; (40) progress of internal research or clinical programs; (41) progress of partnered programs; (42) partner satisfaction; (43) budget management; (44) clinical achievements; (45) completing phases of a clinical study (including the treatment phase); (46) announcing or presenting preliminary or final data from clinical studies; in each case, whether on particular timelines or generally; (47) timely completion of clinical trials; (48) submission of INDs and NDAs and other regulatory achievements; (49) partner or collaborator achievements; (50) internal controls, including those related to the Sarbanes-Oxley Act of 2002; (51) research progress, including the development of programs; (52) investor relations, analysts and communication; (53) manufacturing achievements (including obtaining particular yields from manufacturing runs and other measurable objectives related to process development activities); (54) strategic partnerships or transactions (including in-licensing and out-licensing of intellectual property; (55) establishing relationships with commercial entities with respect to the marketing, distribution, and sale of the Company's products (including with group purchasing organizations, distributors, and other vendors); (56) supply chain achievements (including establishing relationships with manufacturers or suppliers of active pharmaceutical ingredients and other component materials and manufacturers of the Company's products); (57) co-development, co-marketing, profit sharing, joint venture or other similar arrangements; and (58) other measures of performance selected by our board.

Our compensation committee may establish performance goals on a company-wide basis, with respect to one or more business units, divisions, affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless specified otherwise (1) in the award agreement at the time the award is granted or (2) in such other document setting forth the performance goals at the time the goals are established, our compensation committee will appropriately make adjustments in the method of calculating the attainment of the performance goals as follows: (a) to exclude restructuring and/or other nonrecurring charges; (b) to exclude exchange rate effects; (c) to exclude the effects of changes to generally accepted accounting principles; (d) to exclude the effects of any

statutory adjustments to corporate tax rates; and (e) to exclude the effects of any items that are "unusual" in nature or occur "infrequently" as determined under generally accepted accounting principles; (f) to exclude the dilutive effects of acquisitions or joint ventures; (g) to assume that any business divested by us achieved performance objectives at targeted levels during the balance of a Performance Period following such divestiture; (h) to exclude the effect of any change in the outstanding shares of our common stock by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination, or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (i) to exclude the effects of stock based compensation and the award of bonuses under our bonus plans; (j) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to be expensed under generally accepted accounting principles; (k) to exclude the goodwill and intangible asset impairment charges that are required to be recorded under generally accepted accounting principles; and (l) to exclude the effect of any other unusual, non-recurring item of gain or loss.

Other Stock Awards. The plan administrator may grant other awards based in whole or in part by reference to our common stock. The plan administrator will set the number of shares under the stock award and all other terms and conditions of such awards.

Changes to Capital Structure. In the event there is a specified type of change in our capital structure, such as a stock split, reverse stock split or recapitalization, appropriate adjustments will be made to (1) the class and maximum number of shares reserved for issuance under the 2018 Plan, (2) the class and maximum number of shares by which the share reserve may increase automatically each year, (3) the class and maximum number of shares that may be issued upon the exercise of incentive stock options, and (4) the class and number of shares and exercise price, strike price or purchase price, if applicable, of all outstanding stock awards.

Corporate Transactions. Our 2018 Plan provides that in the event of certain specified significant corporate transactions including: (1) a sale of all or substantially all of our assets, (2) the sale or disposition of more than 50% of our outstanding securities, (3) the consummation of a merger or consolidation where we do not survive the transaction and (4) the consummation of a merger or consolidation where we do survive the transaction but the shares of our common stock outstanding prior to such transaction are converted or exchanged into other property by virtue of the transaction, each outstanding award will be treated as the plan administrator determines unless otherwise provided in an award agreement or other written agreement between us and the award holder. The administrator will take one of the following actions with respect to such awards (1) arrange for the assumption, continuation or substitution of a stock award by a successor corporation; (2) arrange for the assignment of any reacquisition or repurchase rights held by us to a successor corporation; (3) accelerate the vesting, in whole or in part, of the stock award and provide for its termination prior to the transaction; (4) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by us; or (6) cancel or arrange for the cancellation of the stock award in exchange for a payment, in the form determined by the board, equal to the excess, if any, of the per share amount (or value of property per share) payable to holders of our common stock in connection with the transaction over any exercise price payable by the participant in connection with the exercise, multiplied by the number of shares subject to the stock award. Such payment may be subject to vesting based on the participant's continuing service, provided that the vesting schedule shall be no less favorable to the holder than the schedule under which the stock award would have become vested and/or exercisable. Any escrow, holdback, earnout, or similar provisions in the definitive agreement for the transaction may apply to such payment to the holder of a stock award to the same extent and in the same manner as such provisions apply to holders of our common stock. The plan administrator is not obligated to treat all stock awards or portions of stock awards, even those that are of the same type, in the same manner.

In the event of a change in control, awards granted under the 2018 Plan will not receive automatic acceleration of vesting and/or exercisability, although this treatment may be provided for in an award agreement. Under the 2018 Plan, a change in control generally will be deemed to occur in the event: (i) a person, entity, or group acquires, directly or indirectly, our securities representing more than 50% of the combined voting power of our then outstanding securities, other than by virtue of a merger, consolidation, or similar transaction; (ii) there is

consummated a merger, consolidation, or similar transaction and, immediately after the consummation of such transaction, our stockholders immediately prior thereto do not own, directly or indirectly, more than 50% of the combined outstanding voting power of the surviving entity or the parent of the surviving entity in substantially the same proportions as their ownership of our outstanding voting securities immediately prior to such transaction; (iii) there is consummated a sale or other disposition of all or substantially all of our consolidated assets, other than a sale or other disposition to an entity in which more than 50% of the entity's combined voting power is owned by our stockholders in substantially the same proportions as their ownership of our outstanding voting securities immediately prior to such sale or other disposition; or (iv) a majority of our Board becomes comprised of individuals whose nomination, appointment, or election was not approved by a majority of the Board members or their approved successors.

Transferability. A participant may not transfer stock awards under our 2018 Plan other than by will, the laws of descent and distribution or as otherwise provided under our 2018 Plan.

Plan Amendment or Termination. Our board of directors has the authority to amend, suspend, or terminate our 2018 Plan, provided that such action does not materially impair the existing rights of any participant without such participant's written consent. Certain material amendments also require the approval of our stockholders. No ISOs may be granted after the tenth anniversary of the date our board of directors adopted our 2018 Plan. No stock awards may be granted under our 2018 Plan while it is suspended or after it is terminated.

2018 Employee Stock Purchase Plan

Our board of directors adopted our 2018 Employee Stock Purchase Plan, or the ESPP, in July 2018, and our stockholders subsequently approved the ESPP in 2018. The ESPP will become effective immediately upon the execution of the underwriting agreement related to this offering. The purpose of the ESPP is to secure the services of new employees, to retain the services of existing employees and to provide incentives for such individuals to exert maximum efforts toward our success and that of our affiliates. The ESPP is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Code.

Share Reserve. The maximum aggregate number of shares of our common stock that may be issued pursuant to the exercise of purchase rights under our ESPP that are granted to our employees or to employees of any of our designated affiliates is 9,275,538 shares. Additionally, the number of shares of our common stock reserved for issuance under our ESPP will increase automatically each year, beginning on January 1, 2019, and continuing through and including January 1, 2028, by the lesser of (1) 1% of the total number of shares of our common stock outstanding on December 31 of the preceding calendar year, (2) 10,000,000 shares or (3) a lesser number of shares as determined by our board of directors. Shares subject to purchase rights granted under our ESPP that terminate without having been exercised in full will not reduce the number of shares available for issuance under our ESPP.

Administration. Our board of directors, or a duly authorized committee thereof, will administer our ESPP. Our board of directors has delegated concurrent authority to administer our ESPP to our compensation committee under the terms of the compensation committee's charter. The ESPP is implemented through a series of offerings under which eligible employees are granted purchase rights to purchase shares of our common stock on specified dates during such offerings. Under the ESPP, we may specify offerings with durations of not more than 27 months, and may specify shorter purchase periods within each offering. Each offering will have one or more purchase dates on which shares of our common stock will be purchased for employees participating in the offering. An offering under the ESPP may be terminated under certain circumstances.

Payroll Deductions. Generally, all regular employees, including executive officers, employed by us or by any of our designated affiliates, may participate in the ESPP and may contribute, normally through payroll deductions, up to 15% of their earnings (as defined in the ESPP) for the purchase of our common stock under the ESPP. Unless otherwise determined by our board of directors, common stock will be purchased for the accounts

of employees participating in the ESPP at a price per share equal to the lower of (a) 85% of the fair market value of a share of our common stock on the first date of an offering or (b) 85% of the fair market value of a share of our common stock on the date of purchase. For the initial offering, which will commence upon the execution and delivery of the underwriting agreement relating to this offering, the fair market value on the first day of the initial offering will be the price at which shares are first sold to the public.

Limitations. Our employees, including executive officers, or any of our designated affiliates may have to satisfy one or more of the following service requirements before participating in our ESPP, as determined by the administrator: (1) customary employment with us or one of our affiliates for more than 20 hours per week and more than five months per calendar year, or (2) continuous employment with us or one of our affiliates for a minimum period of time, not to exceed two years, prior to the first date of an offering. An employee may not be granted rights to purchase stock under our ESPP if such employee (1) immediately after the grant would own stock possessing 5% or more of the total combined voting power or value of our common stock, or (2) holds rights to purchase stock under our ESPP that would accrue at a rate that exceeds $25,000 worth of our common stock based on the fair market value per share of our common stock at the beginning of an offering for each calendar year that the purchase rights remain outstanding.

Changes to Capital Structure. In the event that there occurs a change in our capital structure through such actions as a stock split, merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or similar transaction, the board of directors will make appropriate adjustments to (1) the number of shares reserved under the ESPP, (2) the maximum number of shares by which the share reserve may increase automatically each year, (3) the number of shares and purchase price of all outstanding purchase rights, and (4) the number of shares that are subject to purchase limits under an offering.

Corporate Transactions. In the event of certain significant corporate transactions including: (1) a sale of all or substantially all of our assets, (2) the sale or disposition of more than 50% of our outstanding securities, (3) the consummation of a merger or consolidation where we do not survive the transaction and (4) the consummation of a merger or consolidation where we do survive the transaction but the shares of our common stock outstanding immediately prior to such transaction are converted or exchanged into other property by virtue of the transaction, any then-outstanding rights to purchase our stock under the ESPP may be assumed, continued or substituted for by any surviving or acquiring entity (or its parent company). If the surviving or acquiring entity (or its parent company) elects not to assume, continue, or substitute for such purchase rights, then the participants' accumulated payroll contributions will be used to purchase shares of our common stock within 10 business days prior to such corporate transaction, and such purchase rights will terminate immediately after such purchase.

ESPP Amendments, Termination. Our board of directors has the authority to amend or terminate our ESPP, provided that except in certain circumstances such amendment or termination may not materially impair any outstanding purchase rights without the holder's consent. We will obtain stockholder approval of any amendment to our ESPP as required by applicable law or listing requirements.

2008 Stock Plan

General. Our board of directors adopted the 2008 Stock Plan in April 2008, and it was approved by our stockholders in February 2009. We have subsequently amended the 2008 Stock Plan, with the most recent amendment occurring in March 2017, the purpose of which was to increase the number of shares available for issuance under the 2008 Stock Plan. No further awards will be made under the 2008 Stock Plan following this offering; however, awards outstanding under the 2008 Stock Plan will continue in full effect in accordance with their existing terms.

Share Reserve. As of June 30, 2018, we have reserved 96,701,158 shares of our common stock for issuance under the 2008 Stock Plan. As of June 30, 2018, options to purchase 52,224,031 shares of common stock, at

exercise prices ranging from $0.015 to $0.54 per share, or a weighted-average exercise price of $0.23 per share, were outstanding under the 2008 Stock Plan, and 867,474 shares of common stock remained available for future issuance under the 2008 Stock Plan. Unissued shares subject to awards that expire or are cancelled, award shares reacquired by us and shares withheld in payment of the purchase price or exercise price of an award or in satisfaction of withholding taxes will again become available for issuance under the 2008 Stock Plan until the expiration date of the 2008 Stock Plan, as described above.

Administration. Our board of directors has administered the 2008 Stock Plan since its adoption, however, following this offering, the compensation committee of our board of directors will generally administer the 2008 Stock Plan. The administrator has complete discretion to make all decisions relating to the 2008 Stock Plan and the outstanding awards, including the authority to accept the cancellation of outstanding options (whether granted by us or another issuer) in return for the grant of new options for the same or a different number of shares and at the same or a different exercise price

Types of Awards. The 2008 Stock Plan provides for both the direct grant or sale of shares of our common stock and for the grant of options to purchase shares of our common stock. The 2008 Stock Plan allows for the grant of both incentive and nonstatutory stock options.

Eligibility. Employees, non-employee members of our board of directors and consultants are eligible to participate in the 2008 Stock Plan. However, only employees are eligible to receive incentive stock options.

Options. The exercise price of options granted under the 2008 Stock Plan may not be less than 100% of the fair market value of our common stock on the grant date. Options expire at the time determined by the administrator, but in no event more than 10 years after they are granted, and generally expire earlier if the optionee's service terminates.

Corporate Transactions. In the event that we are a party to a merger or consolidation, shares acquired under the 2008 Stock Plan will be subject to the agreement of merger or consolidation, which agreement need not treat all options in an identical manner. Such agreement will provide for one or more of the following with respect to outstanding options:

- The continuation, assumption, or substitution of the option by the surviving entity or its parent;
- Full vesting and exercisability of the option, followed by cancellation of the option if not exercised prior to the transaction; or
- Cancellation of the option in exchange for a payment equal to the excess, if any, of the fair market value of the shares subject to the option over the exercise price per share of the option. Such payment may be subject to vesting based on the optionee's continuing service, generally in accordance with the original vesting schedule applicable to the option.

Changes in Capitalization. In the event of certain specified changes in the capital structure of our common stock, such as a stock split, reverse stock split, stock dividend, reclassification, or any other increase or decrease in the number of issued shares of stock effective without receipt of consideration by us, proportionate adjustments will automatically be made in each of (i) the number of shares available for future grants under the 2008 Stock Plan, (ii) the number of shares covered by each outstanding option, and (iii) the exercise price per share subject to each outstanding option. In the event of an extraordinary cash dividend that has a material effect on the fair market value of our common stock, a recapitalization, spin-off, or other similar occurrence, the administrator at its sole discretion may make appropriate adjustments to one or more of the foregoing.

Amendments or Termination. The administrator may at any time amend, suspend or terminate the 2008 Stock Plan, subject to stockholder approval in the case of certain amendments. The 2008 Stock Plan will terminate upon the closing of this offering.

401(k) Plan

We maintain a 401(k) plan for employees. The 401(k) is intended to be qualified under Section 401(k) of the Code (as defined below), with the related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan by eligible U.S. employees or by us, and the investment earnings thereon, are not taxable to the employees until withdrawn, and so that contributions by us, if any, will be deductible by us when made. Employees may elect to reduce their current compensation by up to the statutorily prescribed annual limits and to have the amount of such reduction contributed to the 401(k) plan. The 401(k) plan permits us to make contributions up to the limits allowed by law on behalf of all eligible employees. We have not made any company contributions to the 401(k) plan to date.

Health and Welfare Benefits

All our named executive officers are eligible to participate in our employee benefit plans, including our medical, dental and vision insurance plan, in each case on the same basis as all of our other employees.

Limitation on Liability and Indemnification of Directors and Officers

Upon the closing of this offering, our amended and restated certificate of incorporation will contain provisions that limit the liability of our current and former executive officers and directors for monetary damages to the fullest extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for any breach of fiduciary duties as directors, except liability:

- for any transaction from which the director derives an improper personal benefit;
- for any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- under Section 174 of the Delaware General Corporation Law (unlawful payment of dividends or redemption of shares); or
- for any breach of a director's duty of loyalty to the corporation or its stockholders.

Such limitation of liability does not apply to liabilities arising under federal securities laws and does not affect the availability of equitable remedies, such as injunctive relief or rescission.

Our amended and restated certificate of incorporation and our amended and restated bylaws will provide that we are required to indemnify our executive officers and directors to the fullest extent permitted by Delaware law. Our amended and restated bylaws will also provide that, upon satisfaction of certain conditions, we shall advance expenses incurred by an executive officer and director in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee, or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under the provisions of Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws will also provide our board of directors with discretion to indemnify our other officers, employees and other agents when determined appropriate by the board. We have entered and expect to continue to enter into agreements to indemnify our directors and executive officers. With certain exceptions, these agreements provide for indemnification for related expenses including, among other things, attorneys' fees, judgments, fines, and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers. We also maintain customary directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and bylaws may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Furthermore, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions. At present, there is no pending litigation or proceeding involving any of our directors, officers, or employees for which indemnification is sought and we are not aware of any threatened litigation that may result in claims for indemnification.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a description of transactions since January 1, 2015 to which we have been a party in which the amount involved exceeded $120,000 and in which any of our executive officers, directors, promoters, or beneficial holders of more than 5% of our capital stock had or will have a direct or indirect material interest, other than compensation arrangements which are described in "Management—Non-Employee Director Compensation" and "Executive Compensation."

Sale of Series 6 Preferred Stock

In April and June 2015, we issued and sold an aggregate of 23,685,652 shares of Series 6 preferred stock at a purchase price of $0.92 per share for an aggregate purchase price of $21,674,741.

The following table summarizes purchases of shares of Series 6 preferred stock by our executive officers, directors and holders of more than 5% of our capital stock.

Purchaser	Number of Shares	Aggregate Consideration
Redline Capital Management S.A.	14,206,097	$ 12,999,999
Skyline Venture Partners V, L.P.(1)	1,907,262	1,745,335
Montreux IV Associates, L.L.C.	104,021	95,190
OrbiMed Private Investments V, LP(2)	466,882	427,244
Gregory K. Hinckley(3)	218,555	200,000
Total	16,902,817	$ 15,467,768

(1) John G. Freund, M.D., a member of our board of directors, is a Managing Director at Skyline Venture Partners.
(2) David P. Bonita, M.D., a member of our board of directors, is a Private Equity Partner at OrbiMed Advisors LLC.
(3) Mr. Hinckley is a member of our board of directors.

Sale of Series 7 Preferred Stock

In June and July 2016, we issued and sold an aggregate of 36,711,701 shares of Series 7 preferred stock at a purchase price of $0.56 per share for an aggregate purchase price of $20,463,102. In February and March 2017, we issued and sold an aggregate of 9,735,767 shares of Series 7 preferred stock at a purchase price of $0.56 per share for an aggregate purchase price of $5,426,717.

The following table summarizes purchases of shares of Series 7 preferred stock by our executive officers, directors, and holders of more than 5% of our capital stock.

	Shares of Series 7 Preferred Stock	
Purchaser	Number of Shares	Aggregate Gross Consideration
Arboretum Ventures IV, LP(1)	26,910,656	$ 15,000,000
Skyline Venture Partners V, L.P.(2)	7,176,175	4,000,000
Entities affiliated with Montreux Equity Partners(3)	3,588,087	2,000,000
OrbiMed Private Investments V, LP(4)	3,229,278	1,800,000
Redline Capital Management S.A.	1,973,448	1,100,000
Gregory K. Hinckley(5)	807,319	450,000
Keith C. Valentine(6)	179,404	100,000
Total	43,864,367	$ 24,450,000

(1) Timothy B. Petersen, a member of our board of directors, is a Managing Director at Arboretum Ventures, Inc.
(2) John G. Freund, M.D., a member of our board of directors, is a Managing Director at Skyline Venture Partners.
(3) Includes (a) 493,362 shares of Series 7 preferred stock held by Montreux Equity Partners IV, L.P. and (b) 3,094,725 shares of Series 7 preferred stock held by Montreux IV Associates IV, L.L.C.
(4) David P. Bonita, M.D., a member of our board of directors, is a Private Equity Partner at OrbiMed Advisors LLC.
(5) Represents shares held by Gregory K. Hinckley and Mary C. Hinckley As Community Property with the Right of Survivorship. Mr. Hinckley is a member of our board of directors.
(6) Mr. Valentine is a member of our board of directors.

Loans

In March 2013, we loaned Daniel P. Murray, our then current Chief Financial Officer, $200,000 in connection with the exercise of options to purchase 2,737,921 shares of our common stock, or the Murray Purchased Shares. The loan was evidenced by a full recourse promissory note, accrued interest on the outstanding principal amount at the rate of 1.09% per annum and was secured by a pledge of the Murray Purchased Shares and Mr. Murray's personal assets. In November 2016, the loan amount was partially repaid in the amount of $116,000 (including principal of $113,000 and interest of $3,000). The remainder of the principal balance of this loan, together with all interest accrued, was fully paid in December 2017.

In February 2014, we loaned Jeffrey W. Dunn, $437,000 in connection with the exercise of options to purchase 3,133,983 shares of our common stock, or the 2014 Exercised Options, and Mr. Dunn's personal assets. The loan was evidenced by a full recourse promissory note, accrued interest on the outstanding principal amount at the rate of 1.97% per annum and was secured by a pledge of the 2014 Exercised Options. On March 1, 2017, we forgave $231,914 (including principal of $218,500 and interest of $13,414) of this loan. As of December 31, 2017, the outstanding balance of this loan was $231,914, including principal of $219,500, which was forgiven on January 1, 2018.

Amended and Restated Investors' Rights Agreement

We are party to an investor rights agreement that provides holders of our preferred stock, including certain holders of 5% of our capital stock and entities affiliated with certain of our directors, with certain registration rights, including the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we are otherwise filing. The investor rights agreement also provides for a right of first refusal in favor of certain holders of our stock with regard to certain issuances of our capital stock. The rights of first refusal will not apply to, and will terminate upon, closing of this offering. For a more detailed description of these registration rights, see "Description of Capital Stock—Registration Rights."

Employment Arrangements

We have entered into offer letters and severance and change in control agreements with our executive officers. For more information regarding these arranges, see "Executive Compensation—Employment Arrangements."

Equity Grants

We have granted stock options to our executive officers and members of our board of directors. For a description of these stock options, see "Executive Compensation" and "Management—Non-Employee Director Compensation."

Indemnification Agreements

Our amended and restated certificate of incorporation, which will be effective upon the closing of this offering, will contain provisions limiting the liability of directors, and our amended and restated bylaws, which will be effective upon the closing of this offering, will provide that we will indemnify each of our directors to the fullest extent permitted under Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws will also provide our board of directors with discretion to indemnify our officers and employees when determined appropriate by our board of directors.

We intend to enter into indemnification agreements with each of our directors and executive officers and certain other key employees. The indemnification agreements will provide that we will indemnify each of our directors, executive officers, and such other key employees against any and all expenses incurred by that director, executive officer, or other key employee because of his or her status as one of our directors, executive officers, or other key employees, to the fullest extent permitted by Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws. In addition, the indemnification agreements will provide that, to the fullest extent permitted by Delaware law, we will advance all expenses incurred by our directors, executive officers, and other key employees in connection with a legal proceeding involving his or her status as a director, executive officer, or employee.

Policies and Procedures for Related Party Transactions

Our audit committee has the primary responsibility for the review, approval, and oversight of any “related party transaction,” which is any transaction, arrangement, or relationship (or series of similar transactions, arrangements, or relationships) in which we are, were, or will be a participant and the amount involved exceeds $120,000, and in which the related person has, had, or will have a direct or indirect material interest. We intend to adopt a written related party transaction policy to be effective upon the closing of this offering. Under our related party transaction policy, our management will be required to submit any related person transaction not previously approved or ratified by our audit committee to our audit committee. In approving or rejecting the proposed transactions, our audit committee will take into account all of the relevant facts and circumstances available. Our audit committee will approve only those transactions that, as determined by our audit committee, are in, or are not inconsistent with, our best interests and the best interests of our stockholders.

Although we have not had a written policy prior to this offering for the review and approval of transactions with related persons, our board of directors has historically reviewed and approved any transaction where a director or officer had a financial interest, including the transactions described above. Prior to approving such a transaction, the material facts as to a director’s or officer’s relationship or interest as to the agreement or transaction were disclosed to our board of directors. Our board of directors would take this information into account when evaluating the transaction and in determining whether such transaction was fair to us and in the best interests of all of our stockholders.

PRINCIPAL STOCKHOLDERS

The following table sets forth certain information with respect to the beneficial ownership of our common stock as of June 30, 2018, and as adjusted to reflect the sale of common stock offered by us in this offering, for:

- each of our named executive officers;
- each of our directors;
- all of our executive officers and directors as a group; and
- each stockholder known by us to be the beneficial owner of more than 5% of our outstanding shares of common stock.

We have determined beneficial ownership in accordance with the rules of the Securities and Exchange Commission. Except as indicated in the footnotes below, we believe, based on the information furnished to us, that the persons and entities named in the table below have sole voting and investment power with respect to all shares of common stock that they beneficially own, subject to applicable community property laws.

Applicable percentage ownership is based on 283,935,693 shares of common stock outstanding at June 30, 2018, after giving effect to the conversion of all outstanding shares of preferred stock as of that date into an aggregate of 217,201,525 shares of our common stock and the reclassification of all outstanding shares of series 1 common stock and series 2 common stock into an aggregate of 66,734,168 shares of our common stock, which will occur immediately prior to the closing of this offering. For purposes of computing percentage ownership after this offering, we have assumed that (i) shares of common stock will be issued by us in this offering; (ii) shares of common stock will be issued upon the automatic net exercise of outstanding warrants, with an exercise price of $0.51 per share, immediately prior to the closing of this offering, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus; and (iii) that the underwriters will not exercise their right to purchase additional shares. In computing the number of shares of common stock beneficially owned by a person and the percentage ownership of that person, we deemed to be outstanding all shares of common stock subject to stock options and warrants held by that person or entity that are currently exercisable or that will become exercisable within 60 days of June 30, 2018. We did not deem these shares outstanding; however, for the purpose of computing the percentage ownership of any other person or entity. Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o SI-BONE, Inc., 471 El Camino Real, Suite 101, Santa Clara, California 95050.

Name of Beneficial Owner	Shares Beneficially Owned Prior to this Offering		Shares Beneficially Owned Following this Offering	
	Shares	%	Shares	%
Named Executive Officers and Directors:				
David P. Bonita, M.D.(1)	14,136,651	5.0		
Timothy E. Davis, Jr.(2)	712,862	*		
Jeffrey W. Dunn(3)	20,962,164	7.1		
Laura A. Francis(4)	4,518,768	1.6		
John G. Freund, M.D.(5)	74,140,054	26.0		
Gregory K. Hinckley(6)	2,095,146	*		
Karen A. Licitra(7)	385,349	*		
Timothy B. Petersen(8)	26,910,656	9.5		
Anthony J. Recupero(9)	3,231,628	1.1		
Mark A. Reiley, M.D.(10)	9,767,280	3.4		
Keith C. Valentine(11)	564,753	*		
All executive officers and directors as a group (14 persons)(12)	165,197,039	53.0		
5% Stockholders:				
Skyline Venture Partners V, L.P.(13)	74,140,054	26.0		
Entities affiliated with Montreux Equity Partners(14)	36,704,062	12.9		
Arboretum Ventures IV, LP(15)	26,910,656	9.5		
Redline Capital Management S.A.(16)	17,014,520	6.0		
OrbiMed Private Investments V, LP(17)	14,136,651	5.0		

* Less than 1 percent.

(1) Consists of shares of common stock held by OrbiMed Private Investments V, LP. (“OPI V”). OrbiMed Capital GP V LLC (“GP V”) is the general partner of OPI V and OrbiMed Advisors LLC (“OrbiMed Advisors”) is the managing member of GP V. OrbiMed Advisors exercises investment and voting power over the securities held by OPI V through a management committee comprised of Carl L. Gordon, Sven H. Borho, and Jonathan T. Silverstein. Dr. Bonita, a member of our board of directors, is an employee of OrbiMed Advisors. Each of GP V, OrbiMed Advisors, Mr. Gordon, Mr. Borho, Mr. Silverstein, and Dr. Bonita disclaims beneficial ownership of such shares, except to the extent of its or his pecuniary interest therein, if any.

(2) Includes 597,163 shares of common stock issuable to Mr. Davis pursuant to options exercisable within 60 days of June 30, 2018, of which 99,533 of the shares would be unvested as of such date.

(3) Consists of (i) 9,885,734 shares of common stock held by Jeffrey W. Dunn as Trustee of the Jeffrey W. Dunn Living Trust Dated May 17, 2012 and (ii) 11,076,430 shares of common stock issuable to Mr. Dunn pursuant to options exercisable within 60 days of June 30, 2018, of which 3,004,137 of the shares would be unvested as of such date.

(4) Consists of 4,518,768 shares of common stock issuable to Ms. Francis pursuant to options exercisable within 60 days of June 30, 2018, of which 1,360,040 of the shares would be unvested as of such date.

(5) Consists of (i) 73,430,465 shares of common stock held by Skyline Venture Partners V, L.P. (“SVP V”) and (ii) 709,589 shares of common stock issuable to SVP V upon the deemed conversion of shares of our preferred stock, which are issuable upon the exercise of warrants, as reflected in footnote 13 below. Skyline Venture Management V, LLC (“LLC”) is the general partners of SVP V and as such may be deemed to have voting and investment power with respect to the securities of SVP V. Dr. Freund, a member of our board of directors, is the Managing Director of LLC and may be deemed to have voting and investment power with respect to the securities held by SVP V. Dr. Freund disclaims beneficial ownership of such securities, except to the extent of his pecuniary interest therein.

(6) Consists of (i) 734,277 shares of common stock held by Mr. Hinckley and (ii) 1,360,869 shares of common stock held by Gregory K. Hinckley and Mary C. Hinckley as Community Property with the Right of Survivorship.

(7) Consists of 385,349 shares of common stock issuable to Ms. Licitra pursuant to options exercisable within 60 days of June 30, 2018, of which 134,952 of the shares would be unvested as of such date.

(8) Consists of shares of common stock held by Arboretum Ventures IV, LP ("AV IV"). Arboretum Investment Manager IV, LLC ("AIM IV") serves as the general partner of AV IV. Jan Garfinkle, Timothy B. Petersen, a member of our board of directors, and Paul McCreadie are managing directors of AIM IV and share voting and dispositive power with regard to these shares and therefore each of the foregoing managing members may be deemed to have the same powers with respect to such shares. Mr. Petersen disclaims beneficial ownership of such shares except to the extent of his proportionate pecuniary interest, if any.

(9) Consists of 3,231,628 shares of common stock issuable to Mr. Recupero pursuant to options exercisable within 60 days of June 30, 2018, of which 1,831,697 of the shares would be unvested as of such date.

(10) Consists of (i) 6,752,176 shares of common stock held by Dr. Reiley, (ii) 350,000 shares of common stock held by The Mark and Muriel Reiley Charitable Remainder Unitrust and (iii) 2,665,104 shares of common stock issuable to Dr. Reiley pursuant to options exercisable within 60 days of June 30, 2018, of which 420,523 of the shares would be unvested as of such date.

(11) Includes of 385,349 shares of common stock issuable to Mr. Valentine pursuant to options exercisable within 60 days of June 30, 2018, of which 134,952 of the shares would be unvested as of such date.

(12) Includes (i) 133,855,931 shares of common stock beneficially owned by the directors and named executive officers, (ii) 3,716,606 shares of common stock beneficially owned by other executive officers, (iii) 26,914,913 shares issuable pursuant to options exercisable within 60 days of June 30, 2018, of which 8,213,697 of the shares would be unvested as of such date and (iv) 709,589 shares of common stock issuable upon the deemed conversion of shares of our preferred stock, which are issuable upon the exercise of warrants.

(13) Consists of (i) 73,430,465 shares of common stock held by Skyline Venture Partners V, L.P. ("SVP V") and (ii) 709,589 shares of common stock issuable to SVP V upon the deemed conversion of shares of our preferred stock, which are issuable upon the exercise of warrants. Skyline Venture Management V, LLC ("LLC") is the general partners of SVP V and as such may be deemed to have voting and investment power with respect to the securities of SVP V. Dr. Freund, a member of our board of directors, is the Managing Director of LLC and may be deemed to have voting and investment power with respect to the securities held by SVP V. Dr. Freund disclaims beneficial ownership of such securities, except to the extent of his pecuniary interest therein. The address of each of the entities and individual listed above is 525 University Avenue, Suite 1350, Palo Alto, California 94301.

(14) Consists of (i) 30,983,354 shares of common stock held by Montreux Equity Partners IV, L.P. ("MEP IV"), (ii) 278,933 shares of common stock issuable to MEP IV upon the deemed conversion of shares of our preferred stock, which are issuable upon the exercise of warrants, (iii) 3,094,725 shares of common stock held by Montreux IV Associates IV, L.L.C. ("Associates IV"), and (iv) 2,347,050 shares of common stock held by Montreux IV Associates, L.L.C. ("Associates"). Daniel K. Turner III is the Managing Director of Montreux Equity Management IV, L.L.C., the general partner of each of MEP IV, Associates IV and Associates, and may be deemed to have voting and investment power over the shares held by each of these entities. Mr. Turner disclaims beneficial ownership of such shares, except to the extent of his proportionate pecuniary interest, if any. The address of the principal place of business of each of the entities and individuals listed above is One Ferry Building, Suite 255, San Francisco, California 94111.

(15) Arboretum Investment Manager IV, LLC ("AIM IV") serves as the general partner of Arboretum Ventures IV, LP ("AV IV"). Jan Garfinkle, Timothy B. Petersen, a member of our board of directors, and Paul McCreadie are managing directors of AIM IV and share the power to vote or dispose of these shares and therefore each of the foregoing managing members may be deemed to have voting and investment power with respect to such shares. Each of these individuals disclaims beneficial ownership of such shares except to the extent of their respective proportionate pecuniary interest therein. The address of the principal place of business of each of the entities and individuals listed above is 303 Detroit Street, Suite 301, Ann Arbor, Michigan 48104.

(16) Shares held by Redline Capital Management S.A. (“Redline”), acting for the account of Redline Capital Fund – Universal Investments, a sub-fund of Redline Capital Fund FCP-FIS. Tatiana Evtushenkova and Sabine Teske are managing directors of Redline. Ms. Evtushenkova, Robert Kocharyan, Robert Kenedi and Stefan Justinger are members of the Board of Directors of Redline and may be deemed to have voting and investment power over the shares held by Redline. Ms. Evtushenkova, Ms. Teske, Mr. Kocharyan, Mr. Kenedy and Mr. Justinger disclaim beneficial ownership of these shares except to the extent of their respective proportionate pecuniary interest therein, if any. The address of the principal place of business of each of Redline and individuals listed above is 26 Avenue Monterey, L-2163 Luxemborg, G.D. Luxemborg.

(17) OrbiMed Capital GP V LLC (“GP V”) is the general partner of OPI V and OrbiMed Advisors LLC (“OrbiMed Advisors”) is the managing member of GP V. OrbiMed Advisors exercises investment and voting power over the securities held by OPI V through a management committee comprised of Carl L. Gordon, Sven H. Borho, and Jonathan T. Silverstein. Dr. Bonita, a member of our board of directors, is an employee of OrbiMed Advisors. Each of GP V, OrbiMed Advisors, Mr. Gordon, Mr. Borho, Mr. Silverstein, and Dr. Bonita disclaims beneficial ownership of such shares, except to the extent of its or his pecuniary interest therein, if any. The address of the principal place of business of each of the entities and individuals listed above is 601 Lexington Avenue, 54th Floor, New York, New York 10022.

DESCRIPTION OF CAPITAL STOCK

A description of our capital stock and the material terms and provisions of our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect upon the closing of this offering and affecting the rights of holders of our capital stock is set forth below. The forms of our amended and restated certificate of incorporation and our amended and restated bylaws to be adopted in connection with this offering will be filed as exhibits to the registration statement relating to this prospectus.

Upon the closing of this offering, our amended and restated certificate of incorporation will authorize shares of undesignated preferred stock, the rights, preferences, and privileges of which may be designated from time to time by our board of directors.

Upon the closing of this offering, our authorized capital stock will consist of 105,000,000 shares, all with a par value of $0.0001 per share, of which:

- 100,000,000 shares are designated common stock; and
- 5,000,000 shares are designated preferred stock.

As of June 30, 2018, and after giving effect to the conversion of all of our outstanding preferred stock into 217,201,525 shares of common stock immediately prior to the closing of this offering, there were outstanding:

- 283,935,693 shares of common stock held of record by 422 stockholders;
- 52,224,031 shares of common stock issuable upon exercise of outstanding stock options; and
- 5,129,891 shares of common stock, as converted, issuable upon exercise of outstanding warrants.

Common Stock

Dividend Rights

Subject to preferences that may apply to shares of preferred stock outstanding at the time, the holders of outstanding shares of our common stock are entitled to receive dividends out of funds legally available if our board of directors, in its discretion, determines to issue dividends and only then at the times and in the amounts that our board of directors may determine. See “Dividend Policy” for more information.

Voting Rights

The holders of our common stock are entitled to one vote per share. Stockholders do not have the ability to cumulate votes for the election of directors. Our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect upon the closing of this offering will provide for a classified board of directors consisting of three classes of approximately equal size, each serving staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms.

No Preemptive or Similar Rights

Our common stock is not entitled to preemptive rights and is not subject to conversion, redemption, or sinking fund provisions.

Right to Receive Liquidation Distributions

Upon our dissolution, liquidation or winding-up, the assets legally available for distribution to our stockholders are distributable ratably among the holders of our common stock, subject to prior satisfaction of all outstanding debt and liabilities and the preferential rights and payment of liquidation preferences, if any, on any outstanding shares of preferred stock.

Reclassification of Common Stock

Prior to this offering, we had two classes of common stock outstanding: Series 1 common stock and Series 2 common stock. The holders of our Series 2 common stock are entitled to one vote per share and the holders of our Series 1 common stock do not have voting rights, except as required by applicable law. Immediately prior to the closing of this offering, we will reclassify all outstanding shares of our Series 1 common stock and Series 2 common stock into a single class of common stock named "common stock," which shall have the same voting powers, preferences, rights and qualifications, limitations, and restrictions as the current Series 2 common stock.

Preferred Stock

Upon the closing of this offering, no shares of preferred stock will be outstanding, but we will be authorized, subject to limitations prescribed by Delaware law, to issue preferred stock in one or more series, to establish from time to time the number of shares to be included in each series and to fix the designation, powers, preferences, and rights of the shares of each series and any of its qualifications, limitations, or restrictions. Our board of directors also can increase or decrease the number of shares of any series, but not below the number of shares of that series then outstanding, without any further vote or action by our stockholders. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring, or preventing a change in control of our company and may adversely affect the market price of our common stock and the voting and other rights of the holders of common stock. We have no current plan to issue any shares of preferred stock.

Options

As of June 30, 2018, we had options to purchase 52,224,031 shares of common stock outstanding, with a weighted-average exercise price of $0.23 per share, under the 2008 Stock Plan.

For additional information regarding the terms of the 2008 Stock Plan, see "Executive Compensation—Equity Plans."

Warrants

As of June 30, 2018, we had outstanding warrants to purchase up to an aggregate of 5,055,906 shares of common stock and preferred stock with a weighted-average exercise price of $0.48 per share. Immediately prior to the closing of this offering, warrants to purchase up to an aggregate of 988,522 shares will be deemed to be net exercised. Upon the closing of this offering, the balance of the warrants will become exercisable for up to an aggregate of 4,141,369 shares of our common stock with a weighted-average exercise price of $0.48 per share.

Common Stock Warrants

As of June 30, 2018, we had outstanding warrants to purchase up to an aggregate of 2,237,918 shares of our common stock with a weighted-average exercise price of $0.22. Unless earlier exercised, these warrants will expire between July 2023 and March 2027.

Preferred Stock Warrants

As of June 30, 2018, we had outstanding warrants to purchase up to an aggregate of 1,384,326 shares of our Series 5 preferred stock with an exercise price of $0.51. Immediately prior to the closing of this offering, outstanding warrants to purchase 988,522 shares will be deemed to be net exercised. Upon the closing of this offering, the remaining warrant will become exercisable for 395,804 shares of our common stock with an exercise price of $0.51 per share and, unless exercised earlier, will expire in July 2023.

As of June 30, 2018, we had outstanding warrants to purchase up to an aggregate of 1,258,818 shares of our Series 6 preferred stock with an exercise price of $0.92 per share. Upon the closing of this offering, these warrants will become exercisable for up to an aggregate of 1,332,803 shares of our common stock with an exercise price of $0.92 per share. Unless earlier exercised, these warrants will expire between November 2024 and November 2025.

As of June 30, 2018, we had outstanding warrants to purchase up to an aggregate of 174,844 shares of our Series 7 preferred stock with an exercise price of $0.56 per share. Upon the closing of this offering, these warrants will become exercisable for up to an aggregate of 174,844 shares of our common stock with an exercise price of $0.56 per share. Unless earlier exercised, these warrants will expire in November 2026.

The warrants contain provisions for the adjustment of the exercise price and the number of shares issuable upon the exercise of the applicable warrant in the event of certain stock dividends, stock splits, reorganizations, reclassifications, and consolidations.

Registration Rights

After this offering, the holders of 217,201,525 shares of common stock issued upon the conversion of our preferred stock will be entitled to contractual rights to require us to register those shares under the Securities Act. These rights are provided under the terms of our amended and restated investors' rights agreement. If we propose to register any of our securities under the Securities Act for our own account, holders of shares having registration rights are entitled to include their shares in our registration statement, provided, among other conditions, that the underwriters of any such offering have the right to limit the number of shares included in the registration.

We will pay all expenses relating to any demand, piggyback or Form S-3 registration described below, other than underwriting discounts and commissions. The registration rights terminate upon the earliest to occur of: (i) the fourth anniversary of the closing of this offering; (ii) a liquidation event; or (iii) with respect to the registration rights of an individual holder, the earlier of the date that all shares held by the holder can be sold in compliance with Rule 144 or if the holder holds one percent or less or our outstanding common stock and all such shares can be sold in any three-month period in compliance with Rule 144.

Demand Registration Rights

The holders of the registrable securities will be entitled to certain demand registration rights. At any time beginning on the earlier of June 2021 or 180 days following the effectiveness of this offering, the holders of 40% or more of the registrable securities then outstanding, may make a written request that we register at least 20% of the registrable securities, subject to certain specified conditions and exceptions. Such request for registration must cover securities the aggregate offering price of at least $10,000,000, net of underwriting discounts and commissions if the proposed number of securities to be registered is less than 20% of the total number of registrable securities. We not obligated to effect more than two of these registrations.

Piggyback Registration Rights

If we propose to register any of our securities under the Securities Act either for our own account or for the account of other stockholders, the holders of shares having registration rights will, subject to certain exceptions, be entitled to include their shares in our registration statement. These registration rights are subject to specified conditions and limitations, including but not limited to the right of the underwriters to limit the number of shares included in any such offering under certain circumstances, but not below 15% of the total amount of securities included in such offering.

Form S-3 Registration Rights

At any time after we are qualified to file a registration statement on Form S-3, and subject to limitations and conditions specified in the amended and restated investors' rights agreement, the holders of at least 5,000,000 of the registrable securities may make a written request that we prepare and file a registration statement on Form S-3 under the Securities Act covering their shares, so long as the aggregate price to the public, net of any underwriters' discounts and commissions, is at least $3,000,000. We are not obligated to effect more than one of these Form S-3 registrations in any 12-month period.

Anti-Takeover Provisions

Delaware Law

Upon the closing of this offering, we will be governed by the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. This section prevents some Delaware corporations from engaging, under some circumstances, in a business combination, which includes a merger or sale of at least 10% of the corporation's assets with any interested stockholder, meaning a stockholder who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of the corporation's outstanding voting stock, unless:

- the transaction is approved by the board of directors prior to the time that the interested stockholder became an interested stockholder; or
- subsequent to such time that the stockholder became an interested stockholder the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders by at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

A Delaware corporation may "opt out" of these provisions with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or amended and restated bylaws resulting from a stockholders' amendment approved by at least a majority of the outstanding voting shares. We have not opted out of these provisions. As a result, mergers, or other takeover or change in control attempts of us may be discouraged or prevented.

Certificate of Incorporation and Bylaws Provisions

Upon the closing of this offering, our amended and restated certificate of incorporation and our amended and restated bylaws will include a number of provisions that may have the effect of deterring hostile takeovers or delaying or preventing changes in control of our management team, including the following:

- *Board of Directors Vacancies*. Our amended and restated certificate of incorporation and amended and restated bylaws will authorize our board of directors to fill vacant directorships, including newly-created seats. In addition, the number of directors constituting our board of directors will be set only by resolution adopted by a majority vote of our entire board of directors. These provisions will prevent a stockholder from increasing the size of our board of directors and gaining control of our board of directors by filling the resulting vacancies with its own nominees.
- *Classified Board*. Our amended and restated certificate of incorporation and amended and restated bylaws will provide that our board of directors will be classified into three classes of directors, each of whom will hold office for a three-year term. In addition, directors may only be removed from the board of directors for cause and only by the approval of % of our then-outstanding shares of our common stock. The existence of a classified board could delay a successful tender offeror from obtaining majority control of our board of directors, and the prospect of that delay might deter a potential offeror.
- *Stockholder Action; Special Meeting of Stockholders*. Our amended and restated certificate of incorporation will provide that stockholders will not be able to take action by written consent, and will

only be able to take action at annual or special meetings of our stockholders. Stockholders will not be permitted to cumulate their votes for the election of directors. Our amended and restated bylaws will further provide that special meetings of our stockholders may be called only by a majority vote of our entire board of directors, the chairman of our board of directors, or our chief executive officer.

- *Advance Notice Requirements for Stockholder Proposals and Director Nominations*. Our amended and restated bylaws will provide advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders, or to nominate candidates for election as directors at any meeting of stockholders. Our amended and restated bylaws will also specify certain requirements regarding the form and content of a stockholder's notice. These provisions may preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our meetings of stockholders.
- *Issuance of Undesignated Preferred Stock*. Our board of directors will have the authority, without further action by the holders of common stock, to issue up to shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by the board of directors. The existence of authorized but unissued shares of preferred stock will enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest, or otherwise.

Choice of Forum

Upon the closing of this offering, our amended and restated certificate of incorporation will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty by any director, officer, or other employee to us or our stockholders; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws, or any action asserting a claim against us or any director or officer or other employee that is governed by the internal affairs doctrine. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable. Our amended and restated certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

Transfer Agent and Registrar

Upon the closing of this offering the transfer agent and registrar for our common stock will be American Stock Transfer & Trust Company, LLC. The transfer agent's address is 6201 15th Avenue, Brooklyn, New York 11219, and the telephone number is (800) 937-5449.

Listing

We intend to apply to list our common stock on the Nasdaq Global Market under the symbol "SIBN."

SHARES ELIGIBLE FOR FUTURE SALE

Before this offering, there has not been a public market for shares of common stock. Future sales of substantial amounts of shares of our common stock, including shares issuable upon the exercise of outstanding options and warrants, in the public market following this offering or the possibility of these sales occurring, could cause the prevailing market price for our common stock to fall or impair our ability to raise equity capital in the future.

Following this offering, we will have outstanding shares of our common stock, based on the number of shares outstanding as of June 30, 2018. This includes shares of common stock that we are selling in this offering, which shares may be resold in the public market immediately unless purchased by our affiliates, and assumes no additional exercise of outstanding options or warrants, other than as described elsewhere in this prospectus.

The remaining shares of common stock that are not sold in this offering will be "restricted securities," as that term is defined in Rule 144 under the Securities Act of 1933. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rule 144 or Rule 701 under the Securities Act, which are summarized below.

In addition, we, our executive officers and directors, and substantially all of our security holders have entered into market standoff agreements with us or lock-up agreements with the underwriters under which they have agreed, subject to specific exceptions, not to sell any of our capital stock until at least 181 days after the date of this prospectus, as described below. As a result of these agreements and the provisions of our investors' rights agreement disclosed in "Description of Capital Stock—Registration Rights," subject to the provisions of Rule 144 or Rule 701, the shares will generally become available for sale in the public market as follows:

- beginning on the date of this prospectus, the shares sold in this offering will be immediately available for sale in the public market, unless purchased by our affiliates; and
- beginning 181 days after the date of this prospectus, additional shares will become eligible for sale in the public market.

Rule 144

In general, under Rule 144 as currently in effect, a person who has beneficially owned shares of our restricted common stock for at least six months would be entitled to sell their securities provided that such person is not deemed to have been one of our affiliates at the time of, or at any time during the 90 days preceding, a sale, and we are subject to the periodic reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, for at least 90 days before the sale. In addition, under Rule 144, any person who is not an affiliate of ours and has held their shares for at least one year, including the holding period of any prior owner other than one of our affiliates, would be entitled to sell an unlimited number of shares immediately upon the closing of this offering without regard to whether current public information about us is available. Persons who have beneficially owned shares of our restricted common stock for at least six months but who are our affiliates at the time of, or any time during the 90 days preceding, a sale, would be subject to additional restrictions, by which such person would be entitled to sell within any three-month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of common shares then outstanding, which will equal approximately shares immediately after this offering assuming no exercise of the underwriters' option to purchase additional shares, based on the number of common shares outstanding as of June 30, 2018; or
- the average weekly trading volume of our common shares during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale;

provided, in each case, that we have been subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Such sales both by affiliates and by non-affiliates must also comply with the manner of sale, current public information and notice provisions of Rule 144.

Rule 701

Any of our service providers who purchased shares under a written compensatory plan or contract prior to this offering may be entitled to rely on the resale provisions of Rule 701. Rule 701, as currently in effect, permits resales of shares, including by affiliates, in reliance upon Rule 144 but without compliance with certain restrictions, including the holding period requirement, of Rule 144. Rule 701 further provides that non-affiliates may sell such shares in reliance on Rule 144 without having to comply with the public information, volume limitation or notice provisions of Rule 144. All holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling such shares if such resale is pursuant to Rule 701. All Rule 701 shares are, however, subject to lock-up agreements and will only become eligible for sale upon the expiration of these lock-up agreements.

Lock-Up Agreements

In connection with this offering, we and all directors and officers and the holders of substantially all of our outstanding capital stock, warrants and stock options have agreed with the underwriters, subject to certain exceptions, not to offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, shares of our common stock or any securities convertible into or exchangeable for shares of our common stock or enter into any swap or other arrangement that transfers to another any of the economic consequences of ownership of our common stock during the period from the date of this prospectus continuing through the date 180 days after the date of this prospectus, except with the prior written consent of Morgan Stanley & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated. These agreements are subject to certain exceptions, as set forth in “Underwriting.”

Certain of our employees, including our executive officers, and directors may enter into written trading plans that are intended to comply with Rule 10b5-1 under the Securities Exchange Act of 1934. Sales under these trading plans would not be permitted until the expiration of the lock-up agreements relating to our initial public offering described above.

Registration Rights

Upon the closing of this offering, the holders of 217,201,525 shares of common stock will be entitled to rights with respect to the registration of the sale of such shares of common stock under the Securities Act. See “Description of Capital Stock—Registration Rights.” All such shares are covered by lock-up agreements. Following the expiration of the lock-up period, registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration.

Equity Plans

We intend to file a registration statement on Form S-8 under the Securities Act covering all of the shares of our common stock subject to options outstanding or reserved for issuance under our equity plans. We expect to file this registration statement as soon as practicable after the closing of this offering. This registration statement will become effective immediately upon filing, and shares covered by this registration statement will thereupon be eligible for sale in the public markets, subject to vesting restrictions, the lock-up agreements described above and Rule 144 limitations applicable to affiliates. For a more complete discussion of our stock plans, see “Executive Compensation—Equity Plans.”

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS OF OUR COMMON STOCK

The following is a summary of the material U.S. federal income tax consequences to non-U.S. holders (as defined below) of the acquisition, ownership, and disposition of our common stock issued pursuant to this offering. This discussion is not a complete analysis of all potential U.S. federal income tax consequences relating thereto, does not address the potential application of the Medicare contribution tax on net investment income, and does not address any estate or gift tax consequences or any tax consequences arising under any state, local, or foreign tax laws, or any other U.S. federal tax laws. This discussion is based on the Code and applicable Treasury Regulations promulgated thereunder, judicial decisions and published rulings and administrative pronouncements of the Internal Revenue Service, or IRS, all as in effect as of the date hereof. These authorities are subject to differing interpretations and may change, possibly retroactively, resulting in U.S. federal income tax consequences different from those discussed below. We have not requested a ruling from the IRS with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions.

This discussion is limited to non-U.S. holders who purchase our common stock pursuant to this offering and who hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all of the U.S. federal income tax consequences that may be relevant to a particular holder in light of such holder's particular circumstances. This discussion also does not consider any specific facts or circumstances that may be relevant to holders subject to special rules under the U.S. federal income tax laws, including:

- certain former citizens or long-term residents of the United States;
- partnerships or other pass-through entities (and investors therein);
- "controlled foreign corporations;"
- "passive foreign investment companies;"
- corporations that accumulate earnings to avoid U.S. federal income tax;
- banks, financial institutions, investment funds, insurance companies, brokers, dealers, or traders in securities;
- tax-exempt organizations and governmental organizations;
- tax-qualified retirement plans;
- persons subject to the alternative minimum tax;
- persons that own, or have owned, actually or constructively, more than 5% of our common stock;
- accrual-method taxpayers subject to special tax accounting rules under Section 451(b) of the Code;
- persons who have elected to mark securities to market; and
- persons holding our common stock as part of a hedging or conversion transaction or straddle, or a constructive sale, or other risk reduction strategy or integrated investment.

If an entity or arrangement that is classified as a partnership for U.S. federal income tax purposes holds our common stock, the U.S. federal income tax treatment of a partner in the partnership will generally depend on the status of the partner and the activities of the partnership. Partnerships holding our common stock and the partners in such partnerships are urged to consult their tax advisors about the particular U.S. federal income tax consequences to them of holding and disposing of our common stock.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. PROSPECTIVE INVESTORS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE

PARTICULAR U.S. FEDERAL INCOME TAX CONSEQUENCES TO THEM OF ACQUIRING, OWNING AND DISPOSING OF OUR COMMON STOCK, AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL OR FOREIGN TAX LAWS AND ANY OTHER U.S. FEDERAL TAX LAWS. IN ADDITION, SIGNIFICANT CHANGES IN U.S. FEDERAL INCOME TAX LAWS WERE RECENTLY ENACTED. YOU SHOULD ALSO CONSULT WITH YOUR TAX ADVISOR WITH RESPECT TO SUCH CHANGES IN U.S. TAX LAW AS WELL AS POTENTIAL CONFORMING CHANGES IN STATE TAX LAWS.

Definition of Non-U.S. Holder

For purposes of this discussion, a non-U.S. holder is any beneficial owner of our common stock that is not a "U.S. person" or a partnership (including any entity or arrangement treated as a partnership) for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation (or entity treated as a corporation for U.S. federal income tax purposes) created or organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust (1) whose administration is subject to the primary supervision of a U.S. court and which has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (2) that has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

Distributions on Our Common Stock

As described under the section titled "Dividend Policy," we have not paid and do not anticipate paying dividends. However, if we make cash or other property distributions on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and will first be applied against and reduce a holder's tax basis in our common stock, but not below zero. Any excess will be treated as gain realized on the sale or other disposition of our common stock and will be treated as described under the section titled "—Gain on Disposition of Our Common Stock" below.

Subject to the discussions below regarding effectively connected income, backup withholding and Sections 1471 through 1474 of the Code (commonly referred to as FATCA), dividends paid to a non-U.S. holder of our common stock generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends or such lower rate specified by an applicable income tax treaty. To receive the benefit of a reduced treaty rate, a non-U.S. holder must furnish us or our paying agent with a valid IRS Form W-8BEN or IRS Form W-8BEN-E (or applicable successor form) including a U.S. taxpayer identification number and certifying such holder's qualification for the reduced rate. This certification must be provided to us or our paying agent before the payment of dividends and must be updated periodically. If the non-U.S. holder holds the stock through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, which then will be required to provide certification to us or our paying agent, either directly or through other intermediaries.

Non-U.S. holders that do not provide the required certification on a timely basis, but that qualify for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

If a non-U.S. holder holds our common stock in connection with the conduct of a trade or business in the United States, and dividends paid on our common stock are effectively connected with such holder's U.S. trade

or business (and are attributable to such holder's permanent establishment in the United States if required by an applicable tax treaty), the non-U.S. holder will be exempt from U.S. federal withholding tax. To claim the exemption, the non-U.S. holder must generally furnish a valid IRS Form W-8ECI (or applicable successor form) to the applicable withholding agent.

However, any such effectively connected dividends paid on our common stock generally will be subject to U.S. federal income tax on a net income basis at the regular graduated U.S. federal income tax rates in the same manner as if such holder were a resident of the United States. A non-U.S. holder that is a foreign corporation also may be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items. Non-U.S. holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Gain on Disposition of Our Common Stock

Subject to the discussions below regarding backup withholding and FATCA, a non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized on the sale or other disposition of our common stock, unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business in the United States, and if required by an applicable income tax treaty, is attributable to a permanent establishment maintained by the non-U.S. holder in the United States;
- the non-U.S. holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition, and certain other requirements are met; or
- our common stock constitutes a "United States real property interest" by reason of our status as a United States real property holding corporation, or USRPHC, for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding the disposition or the non-U.S. holder's holding period for our common stock, and our common stock is not regularly traded on an established securities market during the calendar year in which the sale or other disposition occurs.

Determining whether we are a USRPHC depends on the fair market value of our U.S. real property interests relative to the fair market value of our other trade or business assets and our foreign real property interests. We believe that we are not currently and do not anticipate becoming a USRPHC for U.S. federal income tax purposes, although there can be no assurance we will not in the future become a USRPHC.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular graduated U.S. federal income tax rates in the same manner as if such holder were a resident of the United States. A non-U.S. holder that is a foreign corporation also may be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items. Gain described in the second bullet point above will be subject to U.S. federal income tax at a flat 30% rate (or such lower rate specified by an applicable income tax treaty), but may be offset by certain U.S.-source capital losses (even though the individual is not considered a resident of the United States), provided that the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses. Non-U.S. holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Annual reports are required to be filed with the IRS and provided to each non-U.S. holder indicating the amount of dividends on our common stock paid to such holder and the amount of any tax withheld with respect to those dividends. These information reporting requirements apply even if no withholding was required because

the dividends were effectively connected with the holder's conduct of a U.S. trade or business, or withholding was reduced or eliminated by an applicable income tax treaty. This information also may be made available under a specific treaty or agreement with the tax authorities in the country in which the non-U.S. holder resides or is established. Backup withholding, currently at a 24% rate, generally will not apply to payments to a non-U.S. holder of dividends on or the gross proceeds of a disposition of our common stock provided the non-U.S. holder furnishes the required certification for its non-U.S. status, such as by providing a valid IRS Form W-8BEN, IRS Form W-8BEN-E, or IRS Form W-8ECI, or certain other requirements are met. Backup withholding may apply if the payor has actual knowledge, or reason to know, that the holder is a U.S. person who is not an exempt recipient.

Backup withholding is not an additional tax. If any amount is withheld under the backup withholding rules, the non-U.S. holder should consult with a U.S. tax advisor regarding the possibility of and procedure for obtaining a refund or a credit against the non-U.S. holder's U.S. federal income tax liability, if any.

Withholding on Foreign Entities

FATCA imposes a U.S. federal withholding tax of 30% on certain payments made to a "foreign financial institution" (as specially defined under these rules) unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding certain U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners) or an exemption applies. FATCA also generally will impose a U.S. federal withholding tax of 30% on certain payments made to a non-financial foreign entity unless such entity provides the withholding agent a certification identifying certain direct and indirect U.S. owners of the entity or an exemption applies. An intergovernmental agreement between the United States and an applicable foreign country may modify these requirements. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. FATCA currently applies to dividends paid on our common stock. FATCA will also apply to gross proceeds from sales or other dispositions of our common stock after December 31, 2018.

Prospective investors are encouraged to consult with their own tax advisors regarding the possible implications of this legislation on their investment in our common stock.

UNDERWRITING

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus, the underwriters named below, for whom Morgan Stanley & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them the number of shares indicated below:

Name	Number of Shares
Morgan Stanley & Co. LLC	
Merrill Lynch, Pierce, Fenner & Smith Incorporated	
Canaccord Genuity LLC	
JMP Securities LLC	
Total:	

The underwriters and the representatives are collectively referred to as the "underwriters" and the "representatives," respectively. The underwriters are offering the shares of common stock subject to their acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the shares of common stock offered by this prospectus if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters' over-allotment option to purchase additional shares described below.

The underwriters initially propose to offer part of the shares of common stock directly to the public at the offering price listed on the cover page of this prospectus and part to certain dealers at a price that represents a concession not in excess of $ a share under the public offering price. After the initial public offering of the shares of common stock, the offering price and other selling terms may from time to time be varied by the representatives.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to additional shares of common stock at the public offering price listed on the cover page of this prospectus, less underwriting discounts and commissions. The underwriters may exercise this option solely for the purpose of covering over-allotments, if any, made in connection with the offering of the shares of common stock offered by this prospectus. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of common stock as the number listed next to the underwriter's name in the preceding table bears to the total number of shares of common stock listed next to the names of all underwriters in the preceding table.

The following table shows the per share and total public offering price, underwriting discounts and commissions, and proceeds before expenses to us. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase up to an additional shares of common stock.

	Per Share	Total	
		No Exercise	Full Exercise
Public offering price	$	$	$
Underwriting discounts and commissions to be paid by us.	$	$	$
Proceeds, before expenses	$	$	$

The estimated offering expenses payable by us, exclusive of the underwriting discounts and commissions, are approximately $ million. We have agreed to reimburse the underwriters for expense relating to clearance of this offering with the Financial Industry Regulatory Authority up to $.

The underwriters have informed us that they do not intend sales to discretionary accounts to exceed 5% of the total number of shares of common stock offered by them.

We intend to apply to list our common stock on the Nasdaq Global Market under the symbol “SIBN.”

We and all directors and officers and the holders of all of our outstanding capital stock, warrants and stock options have agreed that, without the prior written consent of Morgan Stanley & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated on behalf of the underwriters, we and they will not, during the period ending 180 days after the date of this prospectus (the “restricted period”):

- offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of common stock or any securities convertible into or exercisable or exchangeable for shares of common stock;
- file any registration statement with the Securities and Exchange Commission relating to the offering of any shares of common stock or any securities convertible into or exercisable or exchangeable for common stock; or
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the common stock;

whether any such transaction described above is to be settled by delivery of common stock or such other securities, in cash or otherwise. In addition, we and each such person agrees that, without the prior written consent of Morgan Stanley & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated on behalf of the underwriters, we or such other person will not, during the restricted period, make any demand for, or exercise any right with respect to, the registration of any shares of common stock or any security convertible into or exercisable or exchangeable for common stock.

The restrictions described in the immediately preceding paragraph to do not apply to:

- transactions by a securityholder relating to shares of common stock or other securities acquired (i) in open market transactions after the closing of this offering or (ii) except in the case where the securityholder is an officer or director of ours, in this offering; provided that, in each case (i) and (ii), no filing under Section 16(a) of the Exchange Act is required or voluntarily made during the restricted period in connection with subsequent sales of common stock or other securities acquired in such open market transactions or in this offering;
- transfers of shares of common stock or any security convertible into or exercisable or exchangeable for common stock (i) as a bona fide gift, (ii) to an immediate family member or a trust for the direct or indirect benefit of the transferor or such immediate family member of the transferor, (iii) to any corporation, partnership, limited liability company, investment fund, or other entity controlled or managed, or under common control or management by the transferor or the immediate family of the transferor, or (iv) by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary, or a member of the immediate family of the transferor, provided in each case that (a) each distributee or transferee signs and delivers a lock-up letter and (b) no filing under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares shall be required or voluntarily made during the restricted period (other than a filing on a Form 5);
- distributions or transfers of shares of common stock or any security convertible into or exercisable or exchangeable for common stock to general or limited partners, members, or stockholders of the transferor, provided that (i) each distributee or transferee shall sign and deliver a lock-up letter and (ii) no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of common stock, shall be required or shall be voluntarily made during the restricted period (other than a filing on a Form 5);

- the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of common stock, provided that (i) such plan does not provide for the transfer of common stock during the restricted period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by or on behalf of the person or us regarding the establishment of such plan, such announcement or filing shall include a statement to the effect that no transfer of common stock may be made under such plan during the restricted period;
- the exercise of options to purchase shares of common stock granted under any stock incentive plan or stock purchase plan described in this prospectus, provided that (i) the underlying shares shall continue to be subject to the restrictions on transfer set forth in the lock-up agreement and (ii) any filing under Section 16 of the Exchange Act made during the restricted period shall clearly indicate that (A) the filing relates to the circumstances described above and (B) no securities were sold by the person, and (iii) the person does not otherwise voluntarily effect any other public filing or report regarding such transfers during the restricted period;
- the receipt from us of shares of common stock upon (A) the exercise or settlement of options or restricted stock units granted under a stock incentive plan or other equity award plan, which plan is described in this prospectus or (B) the exercise of warrants outstanding and which are described in the this prospectus, or (ii) the transfer of shares of common stock or any securities convertible into common stock to us upon a vesting or settlement event of our securities or upon the exercise of options or warrants to purchase our securities on a “cashless” or “net exercise” basis to the extent permitted by the instruments representing such options or warrants (and any transfer to us necessary to generate such amount of cash needed for the payment of taxes, including estimated taxes, due as a result of such vesting or exercise whether by means of a “net settlement” or otherwise) so long as such “cashless exercise” or “net exercise” is effected solely by the surrender of outstanding options or warrants (or the common stock issuable upon the exercise thereof) to us and our cancellation of all or a portion thereof to pay the exercise price and/or withholding tax and remittance obligations, provided that (1) in the case of (i), the shares received upon exercise or settlement of the option, restricted stock unit, or warrant are subject to the terms of the lock-up agreement and (2) to the extent a filing under Section 16 of the Exchange Act is required to made during the restricted period as a result of transfers, it shall clearly indicate that (A) the filing relates to the circumstances described above and (B) no securities were sold by the transferor in the open market, and (3) the transferor does not otherwise voluntarily effect any other public filing or report regarding such transfers during the restricted period;
- the transfer of shares of common stock or any security convertible into or exercisable or exchangeable for common stock to us pursuant to agreements under which we have the option to repurchase such shares or a right of first refusal with respect to transfers of such shares, provided that (1) to the extent a filing under Section 16 of the Exchange Act is required to made during the restricted period as a result of such transfers, it shall clearly indicate that (A) the filing relates to the circumstances described above and (B) no securities were sold by the transferor in the open market, and (2) the transferor does not otherwise voluntarily effect any other public filing or report regarding such transfers during the restricted period;
- the transfer of shares of common stock or any security convertible into or exercisable or exchangeable for common stock that occurs pursuant to a qualified domestic order or in connection with a divorce settlement, provided that (i) each transferee shall sign and deliver a lock-up agreement, (ii) any filing under Section 16 of the Exchange Act made during the restricted period shall clearly indicate in the footnotes thereto that (A) the filing relates to the circumstances described above and (B) no securities were sold by the transferor, and (iii) the transferor does not otherwise voluntarily effect any other public filing or report regarding such transfers during the restricted period;
- the conversion of the outstanding preferred stock into shares of our common stock, provided that such shares of common stock remain subject to the terms of the lock-up agreement; or
- the sale of shares of common stock to the underwriters pursuant to the underwriting agreement.

Morgan Stanley & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated, in their sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time.

In order to facilitate the offering of the common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. Specifically, the underwriters may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under the over-allotment option. The underwriters can close out a covered short sale by exercising the over-allotment option or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under the over-allotment option. The underwriters may also sell shares in excess of the over-allotment option, creating a naked short position. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in this offering. As an additional means of facilitating this offering, the underwriters may bid for, and purchase, shares of common stock in the open market to stabilize the price of the common stock. These activities may raise or maintain the market price of the common stock above independent market levels or prevent or retard a decline in the market price of the common stock. The underwriters are not required to engage in these activities and may end any of these activities at any time.

We and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

A prospectus in electronic format may be made available on websites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The representatives may agree to allocate a number of shares of common stock to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters that may make Internet distributions on the same basis as other allocations.

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing, and brokerage activities. Certain of the underwriters and their respective affiliates have performed and may in the future perform various financial advisory and investment banking services for us, for which they will receive customary fees and expenses.

In addition, in the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments. The underwriters and their respective affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

Pricing of the Offering

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined by negotiations between us and the representatives. Among the factors to be considered in determining the initial public offering price are our future prospects and those of our industry in general, our

results from operations and certain other financial and operating information in recent periods, and the price-earnings ratios, price-sales ratios, market prices of securities, and certain financial and operating information of companies engaged in activities similar to ours.

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area, an offer to the public of any shares of our common stock may not be made in that Member State, except that an offer to the public in that Member State of any shares of our common stock may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Member State:

(i) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

(ii) 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives for any such offer; or

(iii) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares of our common stock shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to any shares of our common stock in any Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of our common stock to be offered so as to enable an investor to decide to purchase or subscribe any shares of our common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive) and includes any relevant implementing measure in each Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

United Kingdom

Each underwriter has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, or FSMA) received by it in connection with the issue or sale of the shares of our common stock in circumstances in which Section 21(1) of the FSMA does not apply to us; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares of our common stock in, from or otherwise involving the United Kingdom.

Notice to Prospective Investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to Prospective Investors in Switzerland

The shares of common stock may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or "SIX," or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, us, or the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, or FINMA, and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority, or DFSA. This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission, or ASIC, in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001, or the Corporations Act, and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons (the "Exempt Investors") who are "sophisticated investors" (within the meaning of section 708(8) of the Corporations Act), "professional investors" (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Notice to Prospective Investors in Hong Kong

The shares of common stock have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares of common stock has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares of common stock which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Japan

The shares of common stock have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph, "Japanese Person" shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Notice to Prospective Investors in Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares of common stock may not be circulated or distributed, nor may the shares of common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares of common stock are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) the sole purpose of which is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares of common stock pursuant to an offer made under Section 275 of the SFA except:

(a) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(b) where no consideration is or will be given for the transfer;

(c) where the transfer is by operation of law;

(d) as specified in Section 276(7) of the SFA; or

(e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Cooley LLP, Palo Alto, California. Latham & Watkins LLP, New York, New York is representing the underwriters in this offering.

EXPERTS

The consolidated financial statements as of December 31, 2016 and December 31, 2017 and for each of the years then ended included in this prospectus have been so included in reliance on the report (which contains an explanatory paragraph relating to our ability to continue as a going concern as described in Note 2 to the consolidated financial statements) of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have submitted with the Securities and Exchange Commission, or SEC, a registration statement on Form S-1 under the Securities Act of 1933, as amended, with respect to the shares of common stock offered by this prospectus. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and schedules to the registration statement. Please refer to the registration statement, exhibits and schedules for further information with respect to the common stock offered by this prospectus. Statements contained in this prospectus regarding the contents of any contract or other document are only summaries. With respect to any contract or document that is filed as an exhibit to the registration statement, you should refer to the exhibit for a copy of the contract or document, and each statement in this prospectus regarding that contract or document is qualified by reference to the exhibit. You may read and copy the registration statement and its exhibits and schedules at the SEC's public reference room, located at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may obtain information on the operation of the public reference room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a website that contains reports, proxy and information statements and other information regarding issuers, like us, that file documents electronically with the SEC. The address of that website is www.sec.gov. The information on the SEC's web site is not part of this prospectus, and any references to this web site or any other web site are inactive textual references only.

Upon closing of this offering, we will become subject to the information and reporting requirements of the Securities Exchange Act of 1934 and, in accordance with this law, will be required to file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information will be available for inspection and copying at the SEC's public reference facilities and the website of the SEC referred to above. We also maintain a website at www.si-bone.com, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained on, or that can be accessed through, our website is not a part of this prospectus. Investors should not rely on any such information in deciding whether to purchase our common stock. We have included our website address in this prospectus solely as an inactive textual reference.

SI-BONE, INC.
Index to Consolidated Financial Statements

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of SI-BONE, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of SI-BONE, Inc. and its subsidiaries as of December 31, 2017 and 2016, and the related consolidated statements of operations and comprehensive loss, of changes in redeemable convertible preferred stock and stockholders' deficit and of cash flows for the years then ended, including the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of their operations and their cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Substantial Doubt About the Company's Ability to Continue as a Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the consolidated financial statements, the Company has determined there is risk of future non-compliance with its debt covenants that raises substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these consolidated financial statements in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP
San Jose, California
July 31, 2018

We have served as the Company's auditor since 2013.

SI-BONE, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share amounts)

	December 31, 2016	December 31, 2017	June 30, 2018 (unaudited)	Pro Forma June 30, 2018 (unaudited)
ASSETS				
CURRENT ASSETS				
Cash and cash equivalents	$ 27,900	$ 22,408	$ 16,233	
Accounts receivable, net of allowance for doubtful accounts of $316, $268 and $263 (unaudited) at December 31, 2016 and 2017 and June 30, 2018, respectively	5,951	7,416	7,254	
Inventory	1,514	2,553	2,888	
Prepaid expenses and other current assets	959	1,252	947	
Total current assets	36,324	33,629	27,322	
Property and equipment, net	2,608	1,896	2,211	
Intangible assets, net	47	40	36	
Other non-current assets	457	269	344	
TOTAL ASSETS	$ 39,436	$ 35,834	$ 29,913	
LIABILITIES, REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT (EQUITY)				
CURRENT LIABILITIES				
Accounts payable	$ 1,025	$ 1,814	$ 1,358	
Accrued liabilities and other	4,125	5,724	5,924	
Short term borrowings	8,236	—	—	
Total current liabilities	13,386	7,538	7,282	
Redeemable convertible preferred stock warrants	588	422	646	
Long term borrowings	21,074	38,704	38,834	
Other long-term liabilities	—	—	306	
TOTAL LIABILITIES	35,048	46,664	47,068	
Commitments and contingencies (Note 5)				
Redeemable convertible preferred stock, $0.0001 par value; Authorized: 207,953,835, 217,885,520 and 217,885,520 (unaudited) shares at December 31, 2016 and 2017 and June 30, 2018, respectively; issued and outstanding: 203,954,077, 213,689,844 and 213,689,844 (unaudited) shares at December 31, 2016 and 2017 and June 30, 2018, respectively; (Liquidation preference of $113,767, $119,194 and $119,194 (unaudited) at December 31, 2016 and 2017 and June 30, 2018, respectively	113,121	118,548	118,548	
STOCKHOLDERS' DEFICIT (EQUITY)				
Common stock, $0.0001 par value; Authorized: 338,000,000, 348,000,000 and 348,000,000 (unaudited) shares at December 31, 2016 and 2017 and June 30, 2018, respectively; issued and outstanding: 62,032,796, 64,859,561 and 66,734,168 (unaudited) shares, at December 31, 2016 and 2017 and June 30, 2018, respectively	7	7	7	
Additional paid-in capital	7,994	9,937	10,927	
Stockholders' notes receivable	(521)	—	—	
Accumulated other comprehensive income	472	402	435	
Accumulated deficit	(116,685)	(139,724)	(147,072)	
TOTAL STOCKHOLDERS' DEFICIT (EQUITY)	(108,733)	(129,378)	(135,703)	
TOTAL LIABILITIES, REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT (EQUITY)	$ 39,436	$ 35,834	$ 29,913	

The accompanying notes are an integral part of these consolidated financial statements.

SI-BONE, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(In thousands, except share and per share amounts)

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
			(unaudited)	
Revenue	$ 42,101	$ 47,983	$ 22,531	$ 26,375
Cost of goods sold	5,165	5,112	2,566	2,230
Gross profit	36,936	42,871	19,965	24,145
Operating expenses:				
Sales and marketing	35,215	41,646	21,130	21,285
Research and development	6,380	5,513	2,768	2,502
General and administrative	12,906	13,062	6,737	4,972
Total operating expenses	54,501	60,221	30,635	28,759
Loss from operations	(17,565)	(17,350)	(10,670)	(4,614)
Interest and other income (expense), net:				
Interest income	71	175	73	130
Interest expense	(3,308)	(6,204)	(1,920)	(2,544)
Other income (expense), net	213	340	66	(320)
Net loss	(20,589)	(23,039)	(12,451)	(7,348)
Other comprehensive income:				
Changes in foreign currency translation	67	(70)	(35)	33
Comprehensive loss	$ (20,522)	$ (23,109)	$ (12,486)	$ (7,315)
Net loss per share, basic and diluted (Note 14)	$ (0.35)	$ (0.37)	$ (0.20)	$ (0.11)
Weighted-average number of common shares used to compute basic and diluted net loss per share (Note 14)	59,659,307	62,411,906	62,024,861	64,862,952
Pro forma net loss per common share, basic and diluted (unaudited) (Note 14)		$		$
Pro forma weighted-average number of common shares used to compute basic and diluted net loss per share (unaudited) (Note 14)				

The accompanying notes are an integral part of these consolidated financial statements.

SI-BONE, INC.
CONSOLIDATED STATEMENTS OF CHANGES IN REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT
(In thousands, except share and per share amounts)

	Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Stockholders' Notes Receivable	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount					
Balances at December 31, 2015	167,242,376	$ 92,796	59,998,663	$ 7	$ 6,121	$ (634)	$ 405	$ (96,096)	$ (90,197)
Issuance of common stock upon exercise of stock options	—	—	1,998,583	—	320	—	—	—	320
Issuance of common stock upon exercise of unvested stock options	—	—	194,542	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	1,398	—	—	—	1,398
Issuance of redeemable convertible preferred stock, net of issuance costs	36,711,701	20,325	—	—	—	—	—	—	—
Repurchase of unvested early exercised stock options	—	—	(153,992)	—	—	—	—	—	—
Repurchase of common stock	—	—	(5,000)	—	(3)	—	—	—	(3)
Repayment of stockholders' note receivable	—	—	—	—	—	113	—	—	113
Vesting of early exercised stock options	—	—	—	—	158	—	—	—	158
Foreign currency translation	—	—	—	—	—	—	67	—	67
Net loss	—	—	—	—	—	—	—	(20,589)	(20,589)
Balances at December 31, 2016	203,954,077	113,121	62,032,796	7	7,994	(521)	472	(116,685)	(108,733)
Issuance of common stock upon exercise of stock options	—	—	2,749,136	—	383	—	—	—	383
Issuance of common stock upon exercise of unvested stock options	—	—	77,629	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	1,438	—	—	—	1,438
Issuance of redeemable convertible preferred stock, net of issuance costs	9,735,767	5,427	—	—	—	—	—	—	—
Repayment of stockholders' notes receivable	—	—	—	—	—	84	—	—	84
Forgiveness of stockholders' note receivable	—	—	—	—	—	437	—	—	437
Vesting of early exercised stock options	—	—	—	—	122	—	—	—	122
Foreign currency translation	—	—	—	—	—	—	(70)	—	(70)
Net loss	—	—	—	—	—	—	—	(23,039)	(23,039)
Balances at December 31, 2017	213,689,844	118,548	64,859,561	7	9,937	—	402	(139,724)	(129,378)
Issuance of common stock upon exercise of stock options (unaudited)	—	—	871,622	—	208	—	—	—	208
Issuance of common stock upon exercise of unvested stock options (unaudited)	—	—	1,002,985	—	—	—	—	—	—
Stock-based compensation (unaudited)	—	—	—	—	754	—	—	—	754
Vesting of early exercised stock options (unaudited)	—	—	—	—	28	—	—	—	28
Foreign currency translation (unaudited)	—	—	—	—	—	—	33	—	33
Net loss (unaudited)	—	—	—	—	—	—	—	(7,348)	(7,348)
Balances at June 30, 2018 (unaudited)	213,689,844	$ 118,548	66,734,168	$ 7	$ 10,927	$ —	$ 435	$ (147,072)	$ (135,703)

The accompanying notes are an integral part of these consolidated financial statements.

SI-BONE, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
			(unaudited)	
Cash flows from operating activities				
Net loss	$(20,589)	$(23,039)	$(12,451)	$ (7,348)
Adjustments to reconcile net loss to net cash used in operating activities				
Depreciation and amortization	1,038	1,013	566	356
Change in allowance for doubtful accounts	(84)	(36)	24	(7)
Stock-based compensation	1,398	1,438	694	754
Change in fair value of redeemable convertible preferred stock warrants	(414)	(166)	31	224
Loss on write-off of property and equipment	337	214	88	48
Write-off of debt discount	—	650	—	—
Amortization of debt discount	299	285	157	130
Write-off of public offering costs	1,460	1,292	—	—
Forgiveness of notes receivable	—	437	437	—
Changes in operating assets and liabilities				
Accounts receivable	(98)	(1,313)	(18)	201
Inventory	1,186	(980)	(608)	(320)
Prepaid expenses and other assets	215	72	(123)	237
Accounts payable	(1,469)	811	804	(462)
Accrued liabilities and other	(32)	1,792	879	514
Net cash used in operating activities	(16,753)	(17,530)	(9,520)	(5,673)
Cash flows from investing activities				
Purchase of property and equipment	(441)	(478)	(274)	(715)
Net cash used in investing activities	(441)	(478)	(274)	(715)
Cash flows from financing activities				
Proceeds from the exercise of common stock options, net	320	383	82	208
Repurchase of common stock	(3)	—	—	—
Repayment of stockholders' notes receivable	113	84	—	—
Repayment of debt financing	—	(1,119)	—	—
Extinguishment of debt financing	—	(29,081)	—	—
Proceeds from debt financing	4,000	40,000	—	—
Payment of debt issuance costs	—	(1,540)	—	—
Proceeds from the issuance of redeemable convertible preferred stock, net	20,325	5,427	5,427	—
Payments of public offering costs	—	(1,292)	(291)	—
Net cash provided by financing activities	24,755	12,862	5,218	208
Effect of exchange rate changes on cash and cash equivalents	67	(346)	27	5
Net increase (decrease) in cash and cash equivalents	7,628	(5,492)	(4,549)	(6,175)
Cash and cash equivalents at				
Beginning of year	20,272	27,900	27,900	22,408
End of year	$ 27,900	$ 22,408	$ 23,351	$16,233
Supplemental disclosure of cash flow information				
Cash paid for interest	$ 2,994	$ 4,514	$ 1,750	$ 1,981
Supplemental disclosure of noncash information				
Vesting of early exercised stock options	$ 158	$ 122	$ 60	$ 28
Issuance of redeemable convertible preferred stock warrants	45	—	—	—
Purchases of property and equipment included in accounts payable and accrued liabilities	—	97	67	97
Public offering costs included in accounts payable and accrued liabilities	—	—	959	—

The accompanying notes are an integral part of these consolidated financial statements.

SI-BONE, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. The Company and Basis of Presentation

SI-BONE, Inc. (the "Company") was incorporated in the state of Delaware on March 18, 2008 and is headquartered in Santa Clara, California. The Company is a medical device company that has pioneered a proprietary minimally invasive surgical implant system to fuse the sacroiliac joint for treatment of the most common types of sacroiliac joint disorders that cause lower back pain. The Company introduced its iFuse Implant System, or iFuse, in 2009 in the United States, in 2010 in certain countries in the European Union, and in 2015 in certain countries in the rest of the world.

2. Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"). The consolidated financial statements include the Company's accounts, as well as those of the Company's three wholly-owned international subsidiaries. All inter-company accounts and transactions have been eliminated.

Unaudited Interim Financial Information

The accompanying interim consolidated financial statements as of June 30, 2018 and for the six months ended June 30, 2017 and 2018, and the related interim information contained within the notes to the consolidated financial statements, are unaudited. The unaudited interim consolidated financial statements have been prepared in accordance with generally accepted accounting principles for interim financial information and on the same basis as the audited consolidated financial statements. In the opinion of management, the accompanying unaudited interim consolidated financial statements contain all adjustments consisting of only normal recurring adjustments necessary for a fair statement of the Company's financial position as of June 30, 2018, and the results of its operations and cash flows for the six months ended June 30, 2017 and 2018. Such adjustments are of a normal and recurring nature. The results for the six months ended June 30, 2018 are not necessarily indicative of the results to be expected for the year ending December 31, 2018, or for any future period.

Unaudited Pro Forma Balance Sheet and Pro Forma Net Loss Per Share

The June 30, 2018 unaudited pro forma balance sheet has been prepared assuming immediately prior to the completion of the Company's initial public offering, ("IPO"): (i) the automatic conversion of all outstanding shares of redeemable convertible preferred stock into shares of common stock; (ii) the automatic net exercise of certain redeemable convertible preferred stock warrants, assuming an IPO price of $ per share and the related reclassification of the warrant liability to common stock and additional paid-in-capital; and (iii) the automatic conversion of certain other redeemable convertible preferred stock warrants into common stock warrants.

The unaudited pro forma basic and diluted net loss per share has been computed to give effect to the automatic conversion of the shares of redeemable convertible preferred stock into common stock immediately prior to the closing of a qualifying IPO, as if such conversion had occurred at the earlier of the beginning of the period or the date of issuance, if later. In addition, the numerator in the pro forma basic and diluted net loss per share calculation has been adjusted to remove the change in the fair value resulting from the remeasurement of the redeemable convertible preferred stock warrant liability as the redeemable convertible preferred stock warrants will be converted into warrants to purchase common stock or net exercised into common stock, and the related redeemable convertible preferred stock warrant liability will be reclassified to stockholders' deficit immediately prior to the

closing of an IPO. The denominator in the pro forma basic and diluted net loss per share calculation has been adjusted to include the number of shares into which certain redeemable convertible preferred stock warrants would be converted upon their net exercise immediately prior to the closing of an IPO.

The unaudited pro forma net loss per share does not include the shares to be sold and related proceeds to be received from an IPO.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Significant accounting estimates and management judgments reflected in the consolidated financial statements include: fair value of assets and liabilities; analysis of the allowance for doubtful accounts; inventory valuation; valuation of deferred tax assets, including related valuation allowances; fair value of common stock and redeemable convertible preferred stock warrants; stock-based compensation; and useful lives of long lived assets. Estimates are based on historical experience, where applicable and other assumptions believed to be reasonable by the management. Actual results could differ from those estimates.

Segments

The chief operating decision makers for the Company are the Chief Executive Officer and Chief Financial Officer. The Chief Executive Officer and the Chief Financial Officer review financial information presented on a consolidated basis, accompanied by information about revenue by geographic region, for purposes of evaluating financial performance. The Company has one business activity and there are no segment managers who are held accountable for operations, operating results or plans for levels or components below the consolidated unit level. Accordingly, the Company has determined that it has a single reportable and operating segment structure.

The Company derives substantially all of its revenue from sales to customers in the United States. Revenue by geography is based on billing address of the customer. No single country outside the United States accounts for more than 10% of the total revenue during the periods presented. Long-lived assets held outside the United States are immaterial.

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
			(unaudited)	
Domestic	$38,791	$43,351	$20,385	$23,456
International	3,310	4,632	2,146	2,919
	$42,101	$47,983	$22,531	$26,375

Foreign Currency

The Company's foreign subsidiaries use local currency as their functional currency. Assets and liabilities are translated at exchange rates prevailing at the balance sheet dates. Revenue, costs and expenses are translated into U.S. dollars using average exchange rates for the period. Gains and losses resulting from the translation of the Company's consolidated balance sheets are recorded as a component of accumulated other comprehensive income. Gains and losses from foreign currency transactions are recognized as a component of other income (expense), net.

SI-BONE, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Concentration of Credit Risk

Financial instruments that potentially subject the Company to a concentration of credit risk consist of cash and cash equivalents. The Company's cash and cash equivalents are deposited with financial institutions in the United States and in Europe; the majority of the Company's cash and cash equivalents are deposited with a single financial institution in the United States. Deposits in this institution exceed the amount of insurance provided on such deposits. The Company has not experienced any losses on its deposits of cash and cash equivalents.

The Company's revenue and accounts receivable are spread across a large number of customers, primarily in the United States, and no one customer accounts for more than 10% of total revenue or gross accounts receivable in any period presented.

Other Risks and Uncertainties

The Company is subject to risks common to early-stage medical device companies including, but not limited to, new technological innovations, dependence on key personnel, protection of proprietary technology, compliance with government regulations, product liability, the ability to obtain adequate coverage and reimbursement from third-party payors, uncertainty of market acceptance of products, and the need to obtain additional financing.

The Company is dependent on third-party manufacturers and suppliers, in some cases single source suppliers. The Company currently has limited long term contracts with its key suppliers and is subject to risks such as manufacturing failures, non-compliance with regulatory requirements, price fluctuations, inability to properly meet demand and third-party supplier discontinuation of operations.

Liquidity

As of and for the year ended December 31, 2017, the Company had an accumulated deficit of $139.7 million and used $17.5 million of cash in operations. As of and for the six months ended June 30, 2018, the Company had an accumulated deficit of $147.1 million (unaudited) and used $5.7 million (unaudited) of cash in operations. The Company has not achieved positive cash flow from operations to date. The Company held cash and cash equivalents of $22.4 million and $16.2 million (unaudited) as of December 31, 2017 and June 30, 2018, respectively.

The Company's primary cash needs are for the ongoing commercialization of its iFuse products. The Company also has certain debt covenants associated with its current debt agreement. These covenants include a $5.0 million minimum cash balance and revenue targets, which if not met would result in the debt becoming immediately due. The revenue target is assessed quarterly based on the rolling twelve months of revenue, and increases by approximately 2%-4% each quarter. Beginning with the three months ended March 31, 2019, the Company is required to meet either revenue or earnings targets. The Company has met the minimum liquidity and revenue targets as of June 30, 2018, however there can be no assurances that the Company will continue to meet these targets in the future.

Management has the responsibility to evaluate whether conditions and/or events raise substantial doubt about the Company's ability to continue as a going concern within one year after the date that the financial statements are issued. In performing this assessment, management considered the risk associated with its ongoing ability to meet the financial covenants. The Company continues to face challenges and uncertainties and, as a result, its available capital resources may be consumed more rapidly than currently expected due to (a) decreases in sales of products and the uncertainty of future revenues from new products; (b) changes made to the business

that affect ongoing operating expenses; (c) changes made in its business strategy; (d) regulatory developments affecting existing products; (e) changes made in research and development spending plans; and (f) other items affecting forecasted levels of expenditures and use of cash resources. Considering all of these factors, primarily the risk of non-compliance with debt covenants, Management has determined there is substantial doubt about the Company's ability to continue as a going concern within one year from the financial statement issuance date.

The Company is seeking to complete an IPO of its common stock. In the event the Company does not complete an IPO, the Company expects to seek additional funding through private equity financings, debt financings, or other capital sources. The Company may not be able to obtain funding on acceptable terms, or at all. If the Company does raise additional capital through public or private equity offerings, the ownership interest of its existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect its stockholders' rights. If the Company is unable to obtain adequate financing when needed, it may have to delay, reduce the scope of or suspend one or more of its sales and marketing efforts, research and development activities, or other operations. If the Company raises additional capital through debt financing, it may be subject to covenants limiting or restricting its ability to take specific actions, such as incurring additional debt, making capital expenditures, or declaring dividends. If the Company is unable to raise capital, it will need to delay, reduce, or terminate planned activities to reduce costs. Doing so will likely harm the Company's ability to execute its business plans. Although management continues to pursue these plans, there is no assurance that the Company will be successful in obtaining sufficient funding on terms acceptable to the Company to fund operations.

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern and therefore, the consolidated financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amount and classifications of liabilities that may result from the outcome of this uncertainty.

Fair Value of Financial Instruments

Carrying amounts of certain of the Company's financial instruments, including cash equivalents, accounts receivable, accounts payable, and accrued liabilities, approximate fair value due to their relatively short maturities and market interest rates, if applicable. The carrying value of the Company's long-term debt also approximates fair value based on management's estimation that a current interest rate would not differ materially from the stated rate. The carrying amount of the redeemable convertible preferred stock warrants has been marked to fair value such that the carrying amount represents its estimated fair value.

The Company discloses and recognizes the fair value of its assets and liabilities using a hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. Fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, a three-tier value hierarchy has been established, which prioritizes the inputs used in measuring fair value as follows:

Level 1: Quoted prices (unadjusted) in active market that are accessible at measurement date for assets or liabilities. The fair value hierarchy gives the highest priority to Level 1 inputs.

Level 2: Observable prices that are based on inputs not quoted on active markets, but corroborated by market data.

SI-BONE, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Level 3: Unobservable inputs are used when little or no market data is available. The fair value hierarchy gives the lowest priority to Level 3 inputs.

Assets and liabilities measured at fair value are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgments and considers factors specific to the asset or liability.

The Company did not have any cash equivalents as of December 31, 2016. The Company's cash equivalents consist of money market funds as of December 31, 2017 and June 30, 2018 (unaudited). The money market funds are classified as Level 1 of the fair value hierarchy. The Company's redeemable convertible preferred stock warrants are classified within Level 3 of the fair value hierarchy. The redeemable convertible preferred stock warrants have been valued using a Black-Scholes valuation model and are subsequently marked to fair value each reporting period. The related input assumptions are discussed in Note 9.

Cash and Cash Equivalents

The Company considers all highly liquid investments with remaining maturities at the date of purchase of three months or less to be cash equivalents.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded at the invoiced amount and do not bear interest. The Company generally does not require collateral or other security in support of accounts receivable. Allowances are provided for individual accounts receivable when the Company becomes aware of a customer's inability to meet its financial obligations, such as in the case of bankruptcy, deterioration in the customer's operating results or change in financial position. If circumstances related to customers change, estimates of the recoverability of receivables would be further adjusted. The Company also considers broad factors in evaluating the sufficiency of its allowance for doubtful accounts, including the length of time receivables are past due, significant one-time events, creditworthiness of customers and historical experience. Account balances are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote.

Inventory

Inventory is stated at lower of cost or net realizable value. The company establishes the inventory basis by determining the cost based on standard costs approximating the purchase costs on a first-in, first-out basis. The excess and obsolete inventory is estimated based on future demand and market conditions. Inventory write-downs are charged to cost of goods sold. As of December 31, 2016 and 2017 and June 30, 2018 (unaudited), inventory consisted entirely of finished goods.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation and amortization. All property and equipment is depreciated on a straight-line basis over the estimated useful lives of the assets, which are as follows:

Computer and office equipment	3 – 5 years
Machinery and equipment	3 – 5 years
Furniture and fixtures	7 years

SI-BONE, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Leasehold improvements are amortized over the lesser of their useful lives or the life of the lease. Upon sale or retirement of the assets, the cost and related accumulated depreciation are removed from the consolidated balance sheet and the resulting gain or loss is recognized in the consolidated statement of operations. Maintenance and repairs are charged to operations as incurred.

Intangible assets

Intangible assets consist of intellectual property related to the sacroiliac-joint developed technologies acquired by the Company in March 2008. Intangible assets are amortized over the period of estimated benefit using the straight-line method and estimated useful lives of approximately 15 years. No residual value is estimated for intangible assets.

Impairment of Long-Lived Assets

The Company reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset might not be recoverable. When such an event occurs, management determines whether there has been an impairment by comparing the anticipated undiscounted future net cash flows to the related asset's carrying value. If an asset is considered impaired, the asset is written down to fair value, which is determined based either on discounted cash flows or appraised value, depending on the nature of the asset. Through December 31, 2017 and June 30, 2018 (unaudited), the Company has not experienced impairment losses on its long-lived assets.

Public Offering Costs

Specific incremental costs (i.e. consisting of legal, accounting and other fees and costs) directly attributable to a proposed or actual offering of securities may properly be deferred and charged against the gross proceeds of the offering. In the event a planned IPO does not occur or is significantly delayed, all of the costs will be expensed. There were $1.5 million, $0, and $0 (unaudited) of offering costs capitalized as of December 31, 2016 and 2017 and June 30, 2018, respectively, in other non-current assets on the consolidated balance sheets. The $1.5 million of offering costs incurred in 2015 were expensed to General and Administrative expenses in 2016 when IPO plans were delayed. Offering costs of $1.3 million were also incurred and expensed in 2017 as a result of further delays in the IPO process.

Common Stock Warrants

The Company accounts for warrants for shares of common stock as equity in accordance with the accounting guidance for derivatives. The accounting guidance provides a scope exception from classifying and measuring as a financial liability a contract that would otherwise meet the definition of a derivative if the contract is both (i) indexed to the entity's own stock and (ii) classified in the stockholders' deficit section of the consolidated balance sheet. The Company determined that the warrants for shares of common stock issued in connection with the debt arrangement are required to be classified in equity. Warrants classified as equity are recorded as additional paid-in capital on the consolidated balance sheet and no further adjustments to their valuation are made.

Redeemable Convertible Preferred Stock Warrants

Warrants and other similar instruments related to shares that are contingently redeemable are classified as liabilities on the consolidated balance sheet at their estimated fair value because the shares underlying the warrants may obligate the Company to transfer assets to the holders at a future date under certain circumstances

such as a deemed liquidation event. The warrants are exercisable into the Company's redeemable convertible preferred stock and are classified as liabilities on the consolidated balance sheet. The warrants, measured at fair value, are subject to re-measurement at each balance sheet date and the change in fair value, if any, is recognized as other income (expense), net. The Company will continue to adjust the liability for changes in fair value until the earlier of (i) exercise of the warrants, (ii) conversion into equity classified warrants to purchase common stock, or (iii) expiration of the warrants. The remaining value of the redeemable convertible preferred stock warrants will be reclassified to common stock with no further remeasurement required upon exercise of the warrants or conversion into equity classified warrants to purchase common stock.

The Company estimates the fair value of these liabilities using option pricing models and assumptions that are based on the individual characteristics of the warrants on the valuation date, as well as assumptions for future financings, expected volatility, expected life, yield, and risk-free interest rate.

Revenue Recognition

The Company's revenue is derived from the sale of its products to medical groups and hospitals through its direct sales force and distributors throughout the United States and Europe.

In accordance with ASC Topic 605, Revenue Recognition ("ASC 605"), the Company recognizes revenue when persuasive evidence of an arrangement exists, title and risk of loss has transferred to the customer, the sales price is fixed or determinable, and collectability is reasonably assured. For the majority of product sales where the Company's sales representative delivers the product at the point of implantation at hospitals or other medical facilities, the Company recognizes revenue related to product sales upon completion of the procedure and authorization by the customer. Revenue is recognized upon receipt of a purchase agreement or agreement on pricing terms with the customer and when all other revenue recognition criteria are met. For the remaining sales, which include distributor and hospital sales where the product is ordered in advance of a procedure and a valid purchase order has been received, the Company recognizes revenue based upon shipping or delivery terms, which represents the point in time when the customer has taken ownership and assumed risk of loss and the required revenue recognition criteria are met. Such customers are obligated to pay within specified terms regardless of when or if they ever sell or use the products, and the Company has no post-delivery obligations.

Warranty Program

In January 2017, the Company implemented a warranty program which provides a purchaser a one-time replacement of any iFuse implant at no additional cost for a revision procedure within a one-year period following the original procedure and is accounted for as a warranty accrual. The Company also provides a purchaser with a one-time credit equal to the purchase price paid for use on future purchases for any revision procedure within the one-year period following an original procedure where an implant is not required. These one-time credits are accounted for as sales reserves. Sales and warranty reserves from the warranty program were $0, $0.1 million and $0.2 million (unaudited) as of December 31, 2016, December 31, 2017, and June 30, 2018, respectively.

Medical Device Excise Tax

In accordance with the Patient Protection and Affordable Care Act, effective January 1, 2013, the Company began to incur an excise tax on sales of medical devices in the United States. The medical device excise tax is included in cost of goods sold in the consolidated statements of operations and comprehensive loss for all the periods presented. Effective December 2015, the Act was amended to include a provision to suspend the tax on medical devices through 2017. In January 2018, the suspension on the tax on medical devices was further extended through 2019.

SI-BONE, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Shipping and Handling Costs

Shipping and handling costs are expensed as incurred and are included in cost of goods sold.

Research and Development

Research and development costs are charged to operations as incurred and consist of costs incurred by the Company for the development of the Company's product which include (1) employee-related expenses, including salaries, benefits, travel and non-cash stock-based compensation expense (2) external research and development expenses (3) other expenses, which include direct and allocated expenses for facilities and other costs.

Advertising Expenditures

The cost of advertising is expensed as incurred. Advertising costs totaled $1.0 million and $0.8 million for the years ended December 31, 2016 and 2017, respectively, and $0.4 million (unaudited) and $0.3 million (unaudited) for the six months ended June 30, 2017 and 2018, respectively.

Stock-Based Compensation

The Company measures its stock-based awards made to employees based on the estimated fair values of the awards as of the grant date using the Black-Scholes option-pricing model. The model requires management to make a number of assumptions including expected volatility, expected life, risk-free interest rate and expected dividends. Stock-based compensation expense is recognized over the requisite service period using the straight-line method and is based on the value of the portion of stock-based payment awards that is ultimately expected to vest. As such, the Company's stock-based compensation is reduced for the estimated forfeitures at the date of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Equity instruments issued to nonemployees are recorded at their fair value on the measurement date and are subject to periodic adjustments as the underlying equity instruments vest. The Company believes that the estimated fair value of the stock options is more readily measurable than the fair value of the services received. Stock-based compensation related to stock options granted to nonemployees is recognized as the stock options are earned.

In the event the underlying terms of stock options are modified on which stock-based compensation was granted, additional expense is recognized for any modification that increases the total fair value of the share-based payment arrangement at the modification date.

Income Taxes

The Company accounts for income taxes under the asset and liability method, whereby deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using the enacted tax rates in effect for the year in which the differences are expected to affect taxable income. A valuation allowance is established when necessary to reduce deferred tax assets to the amounts expected to be realized.

The Company adopted the accounting guidance for uncertainties in income taxes, which prescribes a recognition threshold and measurement process for recording uncertain tax positions taken, or expected to be

taken, in a tax return in the financial statements. The guidance also prescribes treatment for derecognition, classification, accounting in interim periods and disclosure requirements for uncertain tax positions. The Company accrues for the estimated amount of taxes for uncertain tax positions if it is more likely than not that the Company would be required to pay such additional taxes. An uncertain tax position will not be recognized if it has a less than 50% likelihood of being sustained.

Net Loss per Share of Common Stock

The Company calculates basic and diluted net loss per common share attributable to shareholders in conformity with the two-class method required for companies with participating securities. The Company considers all series of redeemable convertible preferred stock and early exercised stock options to be participating securities as the holders are entitled to receive dividends on a pari passu basis in the event that a dividend is paid on common stock. Under the two-class method, the net loss attributable to common stock is not allocated to the redeemable convertible preferred stock and early exercised stock options as the holders of redeemable convertible preferred stock and early exercised stock options do not have a contractual obligation to share in losses.

Basic net loss per common share is calculated by dividing the net loss by the weighted-average number of common shares outstanding during the period, without consideration for potentially dilutive securities. Diluted net loss per share is computed by dividing the net loss by the weighted- average number of common shares and potentially dilutive securities outstanding for the period. For purposes of the diluted net loss per share calculation, redeemable convertible preferred stock and common stock options and warrants are considered to be potentially dilutive securities. Because the Company has reported a net loss in all periods presented, redeemable convertible preferred stock and common stock options and warrants are anti-dilutive and therefore diluted net loss per common share is the same as basic net loss per common share for those periods.

Comprehensive Loss

Comprehensive loss represents all changes in the stockholders' deficit except those resulting from distributions to stockholders. The Company's unrealized foreign currency translation income (losses) represents the only component of other comprehensive income that is excluded from the reported net loss for each of the reporting periods and has been presented in the consolidated statements of operations and comprehensive loss.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-09, Revenue from Contracts with Customers, which required an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. ASU 2014-09 will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. The new standard is effective for fiscal years beginning after December 15, 2017 for public companies, and for fiscal years beginning after December 15, 2018, and interim periods beginning after December 15, 2019, for private companies. Early application is permitted. The standard permits the use of either the retrospective or cumulative effect transition method. In March 2016, the FASB issued ASU 2016-08, Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net), which clarifies the implementation guidance on principal versus agent considerations in ASU 2014-09. In April 2016, the FASB issued ASU 2016-10, Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing, which clarifies certain aspects of identifying performance obligations and licensing implementation guidance. In May 2016, the FASB issued ASU 2016-12, Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients, which relates to disclosures of

remaining performance obligations, as well as other amendments to guidance on collectability, non-cash consideration and the presentation of sales and other similar taxes collected from customers. These standards have the same effective date and transition date as ASU 2014-09. Management is undergoing its assessment of the new standard, which includes the review of contracts and revenue channels, and will adopt the standard for the fiscal year ending December 31, 2019.

In July 2015, the FASB issued ASU 2015-11, Inventory (Topic 330): Simplifying the Measurement of Inventory. ASU 2015-11 simplifies the guidance on the subsequent measurement of inventory, excluding inventory measured using last-in, first out or the retail inventory method. Under the new standard, in scope inventory should be measured at the lower of cost and net realizable value. The new standard will become effective for fiscal years, including interim periods within those fiscal years, beginning after December 15, 2016, for public companies. For all other entities, the new standard is effective for fiscal years beginning after December 15, 2016, and interim periods within fiscal years beginning after December 15, 2017, with early adoption permitted. The Company has adopted this standard for the fiscal year ended December 31, 2017, which did not have a material impact on the Company's consolidated financial statements.

In November 2015, the FASB issued ASU 2015-17, Balance Sheet Classification of Deferred Taxes. ASU 2015-17 specifies that deferred tax assets and liabilities shall be classified as noncurrent, or long-term, in a classified statement of financial position. The new standard is effective for public entities for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. For private entities, the new standard is effective for fiscal years beginning after December 15, 2017, and interim periods within fiscal years beginning after December 15, 2018. Earlier application is permitted for all entities as of the beginning of an interim or an annual reporting period. The Company has early adopted this standard for the fiscal year ended December 31, 2017, which did not have a material impact on the Company's consolidated financial statements.

In February 2016, the FASB issued its new lease accounting guidance. Under the new guidance, ASU 2016-02, Leases (Topic 842), lessor accounting is largely unchanged. The new lease guidance simplifies the accounting for sale and leaseback transactions primarily because lessees must recognize lease assets and lease liabilities. Under the new guidance, lessees will be required to recognize a lease liability, which is a lessor's obligation to make lease payments arising from a lease, measured on a discounted basis; and a right-of-use asset, which is an asset that represents the lessee's right to use, or control use of, a specified asset for the lease term for all leases (with the exception of short-term leases) at the adoption date. The new guidance is effective for fiscal years, and for interim periods within those fiscal years, beginning after December 15, 2018 for public companies and beginning after December 15, 2019 for private companies. Early adoption is permitted for any interim or annual financial statements net yet issued. Lessees (for capital and operating leases) and lessors (for sales-type, direct financing and operating leases) must apply a modified retrospective approach for all leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements. The Company is currently evaluating the impact of this standard on its consolidated financial statements, and anticipates adopting the standard for the fiscal year ending December 31, 2020.

In March 2016, the FASB issued ASU 2016-09, which simplified several aspects of accounting for stock-based compensation transactions. The areas for simplification in this update involve several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The new guidance is effective for public entities for fiscal years beginning after December 15, 2016 and interim periods within those years. Other entities must apply the new guidance in fiscal years beginning after December 15, 2017 and in interim periods within fiscal years beginning after December 15, 2018, with early adoption permitted. The Company early adopted this standard in the first quarter of 2017 by recording the cumulative impact of applying this guidance to retained earnings, which was not material. The Company elected to continue to estimate the number of awards that are expected to vest.

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In August 2016, the FASB issued ASU 2016-15 “Statement of Cash Flows (Topic 230), Classification of Certain Cash Receipts and Cash Payments”. ASU 2016-15 provides guidance on the following eight specific cash flow classification issues: (1) debt prepayment or debt extinguishment costs; (2) settlement of zero-coupon debt instruments or other debt instruments with coupon interest rates that are insignificant in relation to the effective interest rate of the borrowing; (3) contingent consideration payments made after a business combination; (4) proceeds from the settlement of insurance claims; (5) proceeds from the settlement of corporate-owned life insurance policies, including bank-owned life insurance policies; (6) distributions received from equity method investees; (7) beneficial interests in securitization transactions; and (8) separately identifiable cash flows and application of the predominance principle. Current GAAP does not include specific guidance on these eight cash flow classification issues. The amendments of this ASU are effective for reporting periods beginning after December 15, 2017 for public companies, and fiscal years beginning after December 15, 2018 and interim periods within fiscal years beginning after December 15, 2019 for private companies, with early adoption permitted. The Company is currently evaluating the impact of adopting ASU 2016-15 on its consolidated financial statements, and anticipates adopting the standard for the fiscal year ending December 31, 2019.

In May 2017, the FASB issued ASU 2017-09, Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting, which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. The standard is effective for all entities for fiscal years, including interim periods within those fiscal years, beginning after December 15, 2017. Early adoption is permitted. The Company has adopted this standard for the fiscal year ending December 31, 2018, which did not have a material impact on the Company’s consolidated financial statements.

In July 2017, the FASB issued ASU 2017-11, Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480), Derivatives and Hedging (Topic 815) I. Accounting for Certain Financial Instruments with Down Round Features II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception. Part I applies to entities that issue financial instruments such as warrants, convertible debt or convertible preferred stock that contain down-round features. Part II replaces the indefinite deferral for certain mandatorily redeemable noncontrolling interests and mandatorily redeemable financial instruments of nonpublic entities contained within ASC Topic 480 with a scope exception and does not impact the accounting for these mandatorily redeemable instruments. For public business entities, the amendments in Part I of this update are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. For all other entities, the amendments in Part I of this Update are effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. Early adoption is permitted for all entities, including adoption in an interim period. The Company is currently evaluating the impact that the adoption of this standard will have on its consolidated financial statements, and anticipates adopting the standard for the fiscal year ending December 31, 2020.

In February 2018, the FASB issued ASU 2018-02, Income Statement—Reporting Comprehensive Income (Topic 220). This update provides companies with the option to reclassify stranded tax effects caused by the 2017 Tax Cuts and Jobs Act (the 2017 Tax Act) from accumulated other comprehensive income to retained earnings. This standard is effective for all entities for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. Early adoption is permitted. The Company is currently evaluating the impact that the adoption of this standard will have on its consolidated financial statements, and anticipates adopting the standard for the fiscal year ending December 31, 2019.

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In June 2018, the FASB issued ASU 2018-07, Improvements to Nonemployee Share-Based Payment Accounting. ASU 2018-07 expands the scope of Topic 718, Compensation—Stock Compensation, to include share-based payments issued to nonemployees for goods or services. Consequently, the accounting for share-based payments to nonemployees and employees will be substantially aligned. ASU 2018-07 supersedes Subtopic 505-50, Equity—Equity-Based Payments to Non-Employees. For public business entities, the amendments are effective for fiscal years beginning after December 15, 2018, including interim periods within that fiscal year. For all other entities, the amendments are effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. Early adoption is permitted, but no earlier than a company's adoption date of ASC 606. The Company is evaluating the impact that the adoption of this standard will have on the consolidated financial statements, and anticipates adopting the standard for the fiscal year ending December 31, 2020.

3. Fair Value Measurement

The following table sets forth the fair value of the Company's financial assets and liabilities measured at fair value on a recurring basis based on the three-tier fair value hierarchy (in thousands):

	December 31, 2016			
	Level 1	Level 2	Level 3	Total
Liabilities				
Redeemable convertible preferred stock warrants	$ —	$ —	$ 588	$ 588

	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Assets				
Money market funds[1]	$22,115	$ —	$ —	$22,115
Liabilities				
Redeemable convertible preferred stock warrants	$ —	$ —	$ 422	$ 422

	June 30, 2018 (unaudited)			
	Level 1	Level 2	Level 3	Total
Assets				
Money market funds[1]	$15,773	$ —	$ —	$15,773
Liabilities				
Redeemable convertible preferred stock warrants	$ —	$ —	$ 646	$ 646

[1] Included in cash and cash equivalents on the consolidated balance sheet

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The following table sets forth a summary of the changes in the fair value of the redeemable convertible preferred stock warrants, the Company's Level 3 financial liability, which is measured on a recurring basis (in thousands):

Balances at January 1, 2016	$ 957
Fair value of redeemable convertible preferred stock warrants issued	45
Change in fair value recorded in other (income) expense, net	(414)
Balances at December 31, 2016	588
Change in fair value recorded in other (income) expense, net	(166)
Balances at December 31, 2017	422
Change in fair value recorded in other (income) expense, net (unaudited)	224
Balances at June 30, 2018 (unaudited)	$ 646

4. Balance Sheet Components

Property and Equipment, net (in thousands):

	December 31, 2016	December 31, 2017	June 30, 2018 (unaudited)
Machinery and equipment	$ 2,942	$ 3,428	$ 3,522
Construction in progress	1,131	879	806
Computer and office equipment	275	310	340
Leasehold improvements	272	272	443
Furniture and fixtures	25	29	145
	4,645	4,918	5,256
Less: Accumulated depreciation and amortization	(2,037)	(3,022)	(3,045)
	$ 2,608	$ 1,896	$ 2,211

Depreciation expense for the years ended December 31, 2016 and 2017 and for the six months ended June 30, 2017 and 2018 was $1.0 million, $1.0 million, $0.6 million (unaudited), and $0.3 million (unaudited), respectively.

Accrued Liabilities and Other (in thousands):

	December 31, 2016	December 31, 2017	June 30, 2018 (unaudited)
Accrued compensation, travel and related expenses	$2,842	$3,732	$ 3,392
Sales tax payable	448	466	484
Accrued professional services	360	341	262
Liability for early exercise of unvested stock options	168	65	293
Accrued interest	86	831	1,163
Sales and warranty reserves	10	149	148
Others	211	140	182
	$4,125	$5,724	$ 5,924

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5. Commitments and Contingencies

Operating Leases

In August 2012, the Company entered into a new four-year non-cancelable operating lease for its existing office building space in San Jose, California which commenced in January 2013. In February 2014, the Company expanded the existing lease space and extended the lease terms through June 2017. In May 2016, the Company entered into another extension of the lease with its lessor for additional 12 months beginning in July 2017. Effective May 2018, the Company entered into an early termination agreement on an operating lease for its San Jose office. No early termination fees were incurred and all previously agreed-to rent payments were released, with no further obligations. In February 2018, the Company entered into a new seven-year non-cancelable operating lease for an office building space in Santa Clara, California which commenced in April 2018.

In March 2011, the Company entered into a six-year non-cancelable operating lease for its office building space in Milan, Italy. In February 2017, the terms of the lease were extended for another six years under the same agreement. In September 2015, the Company entered into a six-year non-cancelable operating lease for additional floor space in its office building in Milan, Italy.

In November 2014, the Company entered into a five-year non-cancelable operating lease for its office building space in Mannheim, Germany.

In December 2015, the Company entered into a three-year non-cancelable operating lease for its office building space in Knaresborough, United Kingdom.

The Company also leases vehicles under operating lease arrangement for the Company's sales personnel in Europe. Operating leases under such arrangements expire during various times in 2021.

Rent expense is recorded over the lease terms on a straight-line basis. Rent expense charged to operations under operating leases totaled approximately $1.0 million for each of the years ended December 31, 2016 and 2017 and $0.5 million (unaudited) and $0.6 million (unaudited) for the six-month periods ended June 30, 2017 and 2018, respectively.

The aggregate future minimum lease payments under all leases as of December 31, 2017 are as follows (in thousands):

Year Ending December 31,	
2017	$721
2018	113
2019	56
2020	46
Thereafter	31
	$967

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The aggregate future minimum lease payments under all leases as of June 30, 2018 (unaudited) are as follows (in thousands):

Year Ending December 31,	
2018 (six months remaining)	$ 472
2019	1,014
2020	952
2021	829
2022	781
Thereafter	1,921
	$5,969

Contingencies

From time to time, the Company may have certain contingent liabilities that arise in the ordinary course of business activities. The Company accrues a liability for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated.

Purchase Commitments and Obligations

The Company has certain purchase commitments related to inventory used in normal course of business. These commitments totaled $0.1 million at December 31, 2017 and $0.3 million (unaudited) at June 30, 2018. The amounts paid under these arrangements may be less in the event that the arrangement is renegotiated or cancelled.

Legal Proceedings

The Company is subject to claims and assessments from time to time in the ordinary course of business but does not believe that any such matters, individually or in the aggregate, will have a material adverse effect on the Company's financial position, results of operations or cash flows.

Indemnification

The Company enters into standard indemnification arrangements in the ordinary course of business. Pursuant to these arrangements, the Company indemnifies, holds harmless, and agrees to reimburse the indemnified parties for losses suffered or incurred by the indemnified party, in connection with any trade secret, copyright, patent or other intellectual property infringement claim by any third-party with respect to the Company's technology. The term of these indemnification agreements is generally perpetual. The maximum potential amount of future payments the Company could be required to make under these agreements is not determinable because it involves claims that may be made against the Company in the future, but have not yet been made.

The Company has entered into indemnification agreements with its directors and officers that may require the Company to indemnify its directors and officers against liabilities that may arise by reason of their status or service as directors or officers, other than liabilities arising from willful misconduct of the individual.

The Company has not incurred costs to defend lawsuits or settle claims related to these indemnification agreements. No liability associated with such indemnifications has been recorded to date.

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6. Borrowings

The Company has the following outstanding debt, net of debt discounts, as of December 31, 2016 and 2017 and June 30, 2018 (unaudited) (in thousands):

	December 31,		June 30,
	2016	2017	2018 (unaudited)
Term Loan	$29,310	$38,704	$ 38,834
Total Borrowings	29,310	38,704	38,834
Less: Short-Term Borrowings	8,236	—	—
Long-Term Borrowings	$21,074	$38,704	$ 38,834

Term Loan

In October 2015, the Company entered into a Term Loan facility and a revolving line of credit with Silicon Valley Bank, or SVB and Oxford Finance LLC, or Oxford for $35.2 million. The first tranche of the Term Loan closed in October 2015 for $16.2 million, of which $15.5 million (including $0.3 million of interest) of the proceeds were used to pay off the existing loans with SVB. The additional $0.7 million related to the payment of final fees due on previous loans. Prepayment fees on the then existing debt facilities were waived. The loan includes an interest-only period through March 31, 2017 and then to be repaid over thirty-three (33) months of equal principal payments plus interest. In November 2015, the Company drew the second tranche of $10.0 million, which was coterminous with the first tranche. Under the Term Loan, the Company also had available a third tranche of $4.0 million through September 30, 2016 and a fourth tranche of $5.0 million through December 31, 2016. Both tranches were contingent upon the achievement of certain goals.

The Company accounted for SVB's portion of the term loan facility as a modification of its existing debt facility as the change in cash flows was less than 10%. As such, a new effective interest rate was established based on the carrying value of the debt and the revised cash flows. Based on the guidance for loan modification, no gains or losses were recorded on the old debt and new fees paid to or received from existing lenders were capitalized and amortized as part of the effective yield. As a result, the Company accounted for the portion of the $0.7 million of final fees related to the previous loans, not yet recognized in interest expense, as a debt discount. This amount will be amortized over the remaining period of the Term Loan as part of the new effective interest rate.

In August 2016, the Company amended the agreement to remove the revenue requirement for the third tranche and extended the draw period of the fourth tranche for additional three months. In December 2016, the Company withdrew the third tranche of the Term Loan of $4.0 million. The agreement also provided for the fourth tranche of $5.0 million to be available through March 2017 contingent upon the Company achieving at least $24.0 million in trailing six-month revenues. In February 2017, the Company amended the Term Loan to extend the interest only period by six months to October 1, 2017 and was then to be repaid over 27 months of equal principal payments plus interest. In addition, the amendment extended the draw period through January 2018 for the fourth tranche of $5.0 million under the Term Loan upon achieving certain revenue milestones. The maturity date of the term loan was December 1, 2019, and it carried an interest rate equal to the greater of 11% or the WSJ Prime rate plus 7.75%. As of December 31, 2016, the total loan balance was $30.2 million with an effective interest rate of 12.45%. The Term Loan borrowings were senior unsecured obligations of the Company, ranking equally and ratably among themselves and with the Company's existing and future unsecured and unsubordinated debt.

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In conjunction with the above Term Loan agreements, the Company issued redeemable convertible preferred stock warrants (refer to Note 9 for details).

In October 2017, the Company extinguished the Term Loan with SVB and Oxford. Concurrently, the Company entered into a New Term Loan with Pharmakon Advisors, or Pharmakon. As a result of the extinguished debt, the Company paid $29.1 million in principal payments to SVB and Oxford. The Company also paid $1.5 million in early termination fees and recorded $0.7 million of unamortized debt discounts. This loss on extinguishment of $2.2 million is reflected as interest expense in the consolidated statement of operations.

The Company entered into the New Term Loan with Pharmakon for $40.0 million in October 2017. Debt issuance costs of $1.3 million were recorded as a direct deduction from the carrying amount of the New Term Loan on the consolidated balance sheet, and are being amortized over the period of the New Term Loan using the effective interest method to interest expense in the consolidated statement of operations. The New Term Loan includes an interest-only period for 35 months through September 2020 and is then repaid in equal quarterly principal payments plus interest through December 2022, and is classified as long-term borrowings on the consolidated balance sheet. The New Term Loan carries a fixed interest rate of 11.5% and a closing fee of 1.5% of the funded amount, or $0.6 million. The New Term Loan includes a pre-payment fee equal to the interest due for the first 30 months of the agreement if it is prepaid within the first 30 months, a 2% prepayment penalty for months 31-48, and a 1% penalty for months 49-60. The New Term Loan requires the Company to maintain a minimum cash balance of $5.0 million and revenue targets. Beginning with the three months ended March 31, 2019, the Company is required to meet either revenue or earnings targets. Under the New Term Loan, the Company also has a second tranche of $10.0 million available through January 2019, contingent upon the achievement of certain revenue milestones. The New Term Loan is a senior obligation secured with a blanket first lien on the assets of the Company. As of December 31, 2017 and June 30, 2018, the total loan balance, net of debt discount, was $38.7 million and $38.8 million (unaudited), respectively, with an effective interest rate of 12.0% and 12.2% (unaudited) and the Company was in compliance with all debt covenants.

Approximate annual future minimum principal payments under the loan agreements as of December 31, 2017 are as follows (in thousands):

Year Ending at December 31,	
2018	$ —
2019	—
2020	4,444
2021	17,778
2022	17,778
Total future minimum payments	40,000
Less:	
Amount representing debt discount	(1,296)
Total minimum payments	$38,704

Line of Credit

In October 2015, the Company entered into an agreement with its existing lender SVB and Oxford. The amount of the revolving line of credit is $4.0 million (or 80% of the amount of certain customer accounts receivable). It carried an interest rate equal to the WSJ Prime rate plus 3% with a maturity of December 1, 2019. In October 2017, this line of credit was cancelled in conjunction with the SVB and Oxford debt extinguishment discussed above. No draws were made on this facility through its termination. Cancellation fees of $0.2 million were included in the loss on extinguishment of the Term Loan of $1.5 million discussed above.

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7. Common Stock

In March 2017, the Board of Directors approved an increase of 10,000,000 Series 2 common stock. As a result, the Company's restated certificate of incorporation, as amended, authorizes the Company to issue 348,000,000 shares of $0.0001 par value common stock, of which 108,000,000 has been designated as Series 1 common stock and 240,000,000 has been designated as Series 2 common stock. The holders of Series 1 common stock shall have no voting rights; the holders of Series 2 common stock shall have the right to one vote for each such share. The holders of common stock are also entitled to receive dividends whenever funds are legally available, as, when, and if declared by the Board of Directors. There have been no dividends declared to date.

The Company has reserved shares of common stock, on an issued and as-converted basis, for future issuance as follows:

	December 31, 2017		June 30, 2018	
	Issued and Outstanding Shares	Common Stock Equivalent Shares	Issued and Outstanding Shares	Common Stock Equivalent Shares
			(unaudited)	
Series 1 common stock	56,036,100	56,036,100	57,910,707	57,910,707
Series 2 common stock	8,823,461	8,823,461	8,823,461	8,823,461
Redeemable convertible preferred stock	213,689,844	217,201,525	213,689,844	217,201,525
Stock options outstanding	54,043,973	54,043,973	52,224,031	52,224,031
Stock options available for grant	922,139	922,139	867,474	867,474
Common stock warrants	2,237,918	2,237,918	2,237,918	2,237,918
Redeemable convertible preferred stock warrants	2,817,988	2,891,973	2,817,988	2,891,973
Total	338,571,423	342,157,088	338,571,423	342,157,088

8. Redeemable Convertible Preferred Stock

Redeemable convertible preferred stock ("preferred stock") at December 31, 2016 consisted of the following:

Series	Shares		Carrying Value	Liquidation Value
	Authorized	Outstanding		
			(in thousands)	
Series 1	4,411,731	4,411,731	$ 154	$ 154
Series 2	12,773,107	12,773,107	1,489	1,520
Series 3	8,981,250	8,981,250	2,862	2,874
Series 4	45,162,853	45,162,853	15,656	15,807
Series 5	37,550,484	36,166,158	18,127	18,275
Series 6	61,006,095	59,747,277	54,508	54,674
Series 7	38,068,315	36,711,701	20,325	20,463
Total	207,953,835	203,954,077	$ 113,121	$ 113,767

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Preferred stock at December 31, 2017 and June 30, 2018 (unaudited) consisted of the following:

Series	Shares		Carrying Value	Liquidation Value
	Authorized	Outstanding	(in thousands)	
Series 1	4,411,731	4,411,731	$ 154	$ 154
Series 2	12,773,107	12,773,107	1,489	1,520
Series 3	8,981,250	8,981,250	2,862	2,874
Series 4	45,162,853	45,162,853	15,656	15,807
Series 5	37,550,484	36,166,158	18,127	18,275
Series 6	61,006,095	59,747,277	54,508	54,674
Series 7	48,000,000	46,447,468	25,752	25,890
Total	217,885,520	213,689,844	$ 118,548	$ 119,194

The holders of preferred stock have various rights and preferences as follows:

Voting Rights

The holders of Series 1, Series 2, Series 3, Series 4, Series 5, Series 6, and Series 7 preferred stock shares are entitled to vote on all matters on which the common stockholders are entitled to vote. The holders of Series 1, Series 2, Series 3 shall have the right to 0.352941 votes for each share of Series 2 common stock into which such preferred stock would convert and the holders of Series 4, Series 5, Series 6 and Series 7 shall have the right to one vote for each share of Series 2 common stock into which such preferred stock would convert. As long as there are any shares of Series 4, Series 5, Series 6, and Series 7 shares are outstanding, the holders of such Series 4, Series 5, Series 6 and Series 7 shall, at each respective series, be entitled to elect one member of the Board of Directors each; the holders of Series 2 common stock shall be entitled to elect two members of the Board of Directors; and the holders of the preferred stock and Series 2 common stock, voting together as a single class shall be entitled to elect the remaining members of the Board of Directors, as determined at each annual meeting of the Board of Directors.

As long as at least 5,000,000 preferred stock shares remain outstanding, the Company must obtain approval from a majority of the holders of the then outstanding shares of preferred stockholders and a majority of the voting power of all outstanding shares of Series 5 preferred stock in order to (i) consummate or agree to consummate a Liquidation Event (as defined in the Company's certificate of incorporation); (ii) amend, alter, restate or repeal any provision of the Company's certificate of incorporation or bylaws so as to adversely alter, affect or change the powers, preferences, rights or privileges of the shares of preferred stock; (iii) increase or decrease (other than by redemption or conversion) the total number of authorized shares of common stock or preferred stock or designated shares of any series of preferred stock; (iv) authorize or issue, or obligate itself to issue, any equity security (including any other security convertible into or exercisable for any such equity security) having a preference over, or being on a parity with, any series of preferred stock with respect to dividends, liquidation or redemption, other than the issuance of any authorized but unissued shares of Series 6 preferred stock designated in the Company's certificate of incorporation (including any security convertible into or exercisable for such shares of preferred stock); (v) redeem, purchase or otherwise acquire (or pay into or set aside for a sinking fund for such purpose) any share or shares of preferred stock or common stock; provided, however, that this restriction shall not apply to the repurchase of shares of common stock from employees, officers, directors, consultants or other persons performing services for the Company or any subsidiary pursuant to agreements under which the Company has the option to repurchase such shares upon the occurrence of certain events, such as the termination of employment or service, or pursuant to an agreement providing for a right of

first refusal in favor of the Company, in each case, provided that such agreement has been approved by the Company's board of directors; or (vi) pay or declare any dividend on any shares of capital stock of the Company.

Dividends

The holders of preferred stock are entitled to receive noncumulative dividends, when and if declared by the Board of Directors, out of any assets legally available, prior to and in preference to any declaration or payment of dividends on the common stock of the Company. Dividend rates, on a per annum basis, for Series 1, Series 2, Series 3, Series 4, Series 5, Series 6, and Series 7 preferred stocks are $0.002784, $0.00952, $0.0256, $0.028, $0.04043, $0.073208, and $0.044592, respectively, (adjusted to reflect subsequent stock dividends, stock splits or recapitalization).

After payment of such dividends, any additional dividends shall be distributed to the holders of all preferred stock and common stock on a pro rata basis in proportion to the number of common stock held by each shareholder as if the preferred stock had been converted at the effective conversion rate. No dividends on preferred stock or common stock have been declared as of December 31, 2017 and June 30, 2018 (unaudited).

Liquidation

In the event of (A) the closing of the sale, lease, transfer, exclusive license or other disposition of all or substantially all of the Company's assets, in a single transaction or series of related transactions, by the Company or any subsidiary or subsidiaries of the Company, of all or substantially all the assets of the Company and its subsidiaries taken as a whole (or, if substantially all of the assets of the Company and its subsidiaries taken as a whole are held by one or more subsidiaries, the sale or disposition (whether by consolidation, merger, conversion or otherwise) of such subsidiaries of the Company or all or substantially all of the assets of such subsidiaries), except where such sale, lease, transfer, exclusive license or other disposition is made the Company or one or more wholly owned subsidiaries of the Company, (B) the consummation of a merger, consolidation or acquisition in which (x) the Company is a constituent party or (y) a subsidiary of the Company is a constituent party and the Company issues shares of its capital stock pursuant to such merger, consolidation or acquisition (except a merger, consolidation or acquisition involving the Company or a subsidiary in which the capital stock of the Company outstanding immediately prior to such merger, consolidation or acquisition continue to represent or are converted or exchanged for shares of capital stock which represent, immediately following such merger, consolidation or acquisition at least a majority of the voting power of the capital stock of (1) the surviving or resulting corporation or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger, consolidation or acquisition, the parent corporation of such surviving or resulting corporation); (C) any transaction or series of related transactions to which the Company is a party in which in excess of fifty percent (50%) of the Company's voting power is transferred; provided that it shall not include any transaction or series of related transactions principally for bona fide equity financing purposes in which cash is received by the Company or any successor or indebtedness of the Company is cancelled or converted or a combination thereof occurs, or (D) a liquidation, dissolution or winding up of the Company, the holders of the preferred stock are entitled to receive prior to and in preference to any distribution to holders of the common stock, an amount equal to their respective original issuance price per share (original issuance price per share for Series 1, Series 2, Series 3, Series 4, Series 5, Series 6, and Series 7 preferred stocks are $0.0348, $0.1190, $0.32, $0.35, $0.5053, $0.9151, and $0.5574, respectively), plus any declared but unpaid dividends on such shares. Should the Company's legally available assets be insufficient to satisfy the full liquidation preference, the funds will be distributed ratably among the holders of the preferred stock in proportion to the preferential amount each holder is otherwise entitled to receive.

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Upon the closing of the distribution as above, the remaining proceeds shall be distributed among the holders of Series 4, Series 5, Series 6, Series 7 preferred stock and common stock pro rata based on the number of shares of common stock held by each until the holders of the preferred stock have received the "participation cap." Thereafter, if proceeds remain, the holders of Series 7 preferred stock and common stock of this corporation shall receive all of the remaining proceeds pro rata based on the number of shares of common stock held by each (assuming full conversion of all such series 7 preferred stock). The Company has a per share "Participation Cap" of $1.8302 for the Series 6 preferred stock, $1.0106 for the Series 5 preferred stock, and $0.70 for the Series 4 preferred stock (each as adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like with respect to such series of preferred stock).

Conversion

Each share of Series 1, Series 2, Series 3, Series 4, Series 5, Series 6, and Series 7 preferred stock is convertible at the option of the holder, into the number of shares of Series 2 common stock into which such shares are at the then effective conversion ratio or one to one ratio. The conversion price per share for Series 1, Series 2, Series 3 and Series 4, Series 5, Series 6, and Series 7 preferred stock shall be the respective issuance price per share, respectively. The initial conversion price is subject to adjustment from time to time. In March 2017, the conversion price per share for the Series 6 preferred stock was amended from $0.8730 per share to $0.8643 per share which resulted in the conversion ratio increasing from 1.05 to 1.06 per share.

Each share of preferred stock shall be converted into common stock shares upon the earlier of (i) immediately before the closing of a firm commitment underwritten public offering in which the aggregate gross proceeds of not less than $50.0 million and a per share public offering of not less than $1.6722, or (ii) the Company's receipt of a written request for such conversion from the holders of at least the voting majority of all outstanding preferred stock (voting as a single class and on an as-converted basis).

Other Matters

The Company has classified the preferred stock as temporary equity on the consolidated balance sheets as the shares can be redeemed upon the occurrence of certain change in control events that are outside the Company's control, including deemed liquidation, sale or transfer of the Company. The Company has not adjusted the carrying values of the preferred stock to the liquidation preferences of such shares because it is uncertain whether or when an event would occur that would obligate the Company to pay the liquidation preferences to holders of shares of preferred stock. Subsequent adjustments to the carrying values to the liquidation preferences will be made only when it becomes probable that such a liquidation event will occur.

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9. Warrants

Warrants issued and outstanding at December 31, 2016 are as follows (in thousands, except share and per share data):

Warrants to purchase	Series	Date			Number of Shares Underlying Warrants	Price per Share	Fair Value at the Date of Issuance
		Issuance	Expiration				
Common stock		7/19/2013	7/22/2023	[a]	1,818,182	$ 0.22	$ 244
Common stock		11/26/2014	11/26/2024	[a]	394,736	$ 0.19	$ 47
Total common stock warrants					2,212,918		
Redeemable convertible preferred stock	Series 5	7/1/2012	7/25/2019	[b]	988,522	$ 0.51	$ 255
Redeemable convertible preferred stock	Series 5	7/19/2013	7/22/2023	[c]	395,804	$ 0.51	$ 122
Redeemable convertible preferred stock	Series 6	11/26/2014	11/26/2024	[c]	113,587	$ 0.92	$ 49
Redeemable convertible preferred stock	Series 6	10/20/2015	10/20/2025	[c]	708,120	$ 0.92	$ 396
Redeemable convertible preferred stock	Series 6	11/9/2015	11/9/2025	[c]	437,111	$ 0.92	$ 244
Redeemable convertible preferred stock	Series 7	12/22/2016	12/22/2026	[c]	174,844	$ 0.56	$ 45
Total redeemable convertible preferred stock warrants					2,817,988		
Total outstanding common and redeemable convertible preferred stock warrants					5,030,906		

[a] Common stock warrants will remain outstanding until exercised by the holder.
[b] These warrants will be net exercised immediately upon the closing of the Company's IPO, or upon a corporate transaction as defined in the Note and Warrant Purchase Agreement dated July 25, 2012.
[c] Convertible preferred stock warrants will remain outstanding until exercised by the holder and will convert to common stock warrants upon an IPO and the convertible preferred stock warrant liability will be re-measured through the date of the IPO and if these warrants on common stock subsequently qualify for equity classification, no further re-measurement will be required thereafter. The warrants will be exercisable for 10 years from the date of issuance.

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Warrants issued and outstanding at December 31, 2017 are as follows (in thousands, except share and per share data):

Warrants to purchase	Series	Date			Number of Shares Underlying Warrants	Price per Share	Fair Value at the Date of Issuance
		Issuance	Expiration				
Common stock		7/19/2013	7/22/2023	[a]	1,818,182	$ 0.22	$ 244
Common stock		11/26/2014	11/26/2024	[a]	394,736	$ 0.19	$ 47
Common stock		03/01/2017	03/01/2017	[a]	25,000	$ 0.33	$ 5
Total common stock warrants					2,237,918		
Redeemable convertible preferred stock	Series 5	7/1/2012	7/25/2019	[b]	988,522	$ 0.51	$ 255
Redeemable convertible preferred stock	Series 5	7/19/2013	7/22/2023	[c]	395,804	$ 0.51	$ 122
Redeemable convertible preferred stock	Series 6	11/26/2014	11/26/2024	[c]	113,587	$ 0.92	$ 49
Redeemable convertible preferred stock	Series 6	10/20/2015	10/20/2025	[c]	708,120	$ 0.92	$ 396
Redeemable convertible preferred stock	Series 6	11/9/2015	11/9/2025	[c]	437,111	$ 0.92	$ 244
Redeemable convertible preferred stock	Series 7	12/22/2016	12/22/2026	[c]	174,844	$ 0.56	$ 45
Total redeemable convertible preferred stock warrants					2,817,988		
Total outstanding common and redeemable convertible preferred stock warrants					5,055,906		

[a] Common stock warrants will remain outstanding until exercised by the holder.
[b] These warrants will be net exercised immediately upon the closing of the Company's IPO, or upon a corporate transaction as defined in the Note and Warrant Purchase Agreement dated July 25, 2012.
[c] Convertible preferred stock warrants will remain outstanding until exercised by the holder and will convert to common stock warrants upon an IPO. The warrants will be exercisable for 10 years from the date of issuance.

In connection with previously issued debt, the Company issued 1,818,182 warrants to purchase common shares of the Company at an exercise price of $0.22 cents per share in July 2013. Additionally, the Company issued warrants to purchase an additional 394,736 shares of common stock at an exercise price of $0.19 cents per share in November 2014. The Company determined that its warrants to purchase shares of common stock meet the requirements for equity classification.

In conjunction with debt issued in July 2012, the Company issued warrants to purchase an aggregate of 988,522 shares of Series 5 preferred stock of the Company at an exercise price of $0.51 per share.

In conjunction with debt issued in 2013 and 2014, the Company issued 395,804 warrants to purchase Series 5 redeemable convertible preferred stock of the Company at an exercise price of $0.51 cents per share. Subsequently, the Company issued additional warrants to purchase 113,587 shares of Series 6 redeemable convertible preferred stock at an exercise price of $0.92 per share.

In conjunction with the debt agreement with SVB and Oxford, or Term Loan agreement, (refer to Note 6), the Company issued warrants to purchase 708,120 shares of Series 6 redeemable convertible preferred stock at an exercise price of $0.92 cents per price in October 2015 and additional 437,111 shares of Series 6 redeemable convertible preferred stock at an exercise price of $0.92 per share in November 2015.

In conjunction with the Term Loan agreement and its modification (refer to Note 6), the Company issued additional warrants for the purchase of 174,844 shares of Series 7 redeemable convertible preferred stock at an exercise price of $0.56 per share in December 2016.

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The fair value of warrants to purchase preferred stock were recorded at the date of issuance as a discount to debt and amortized to interest expense over the term of the note. The changes in the fair value of the redeemable convertible preferred stock warrants are recorded in other income and expense.

In March 2017, the Company issued a warrant to purchase 25,000 shares of common stock at an exercise price of $0.33 to a non-employee. The Company determined that such warrant meets the requirements for equity classification.

In October 2017, the Company extinguished its debt with SVB and Oxford. All related debt discounts were written off upon repayment of the loan.

Weighted-average assumptions used in computation of the fair value of the redeemable convertible preferred stock warrants are summarized in the table below:

	December 31,		June 30,	
	2016	2017	2017	2018
			(unaudited)	
Remaining contractual term (in years)	4.6	5.3	5.8	4.9
Expected volatility	44.77%	59.06%	49.70%	53.83%
Risk-free interest rate	1.71%	2.16%	2.06%	2.64%
Dividend yield	0%	0%	0%	0%

10. Stock Option Plan

In April 2008, the Company adopted the 2008 Stock Option Plan (the “Plan”), as amended, under which the Board of Directors may issue incentive and nonqualified stock options to employees, directors and consultants. The Board of Directors has the authority to determine to whom options will be granted, the number of shares, the term and the exercise price. If an individual owns stock representing more than 10% of the outstanding shares, the price of each share shall be at least 110% of the fair market value, as determined by the Board of Directors. The exercise price of an incentive stock option and a nonqualified stock option shall not be less than 100% and 85%, respectively, of the fair market value on the date of grant. As of December 31, 2017, a total of 96,301,442 shares of common stock have been reserved for issuance under the Plan. Options granted have a term of 10 years, except, options granted to individuals holding more than 10% of the outstanding shares have a term of five years. Options generally vest over a four-year period. Certain shares issued under the Plan are exercisable immediately, but subject to a right of repurchase by the Company of any unvested shares.

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The following table summarizes activity under the Plan for the years ended December 31, 2016 and 2017 and June 30, 2018 (unaudited):

	Options Outstanding				
	Shares Available for Grant	Number of Shares	Weighted Average Exercise Price per share	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (in thousands)
Balances at January 1, 2016	5,708,252	36,635,349	0.24		$ 10,840
Additions to the Plan	9,688,409	—			
Options granted	(11,967,085)	11,967,085	0.25		
Options exercised	—	(2,193,125)	0.17		$ 452
Options cancelled	2,087,127	(2,087,127)	0.24		
Options repurchased	153,992	—	0.20		
Balances at December 31, 2016	5,670,695	44,322,182	0.20		$ 5,592
Additions to the Plan	7,800,000	—			
Options granted	(15,769,846)	15,769,846	0.33		
Options exercised	—	(2,826,765)	0.14		$ 411
Options cancelled	3,221,290	(3,221,290)	0.26		
Balances at December 31, 2017	922,139	54,043,973	$ 0.23		$ 3,585
Options granted (unaudited)	(968,500)	968,500	0.26		
Options exercised (unaudited)	—	(1,874,607)	0.25		$ 151
Options cancelled (unaudited)	913,835	(913,835)	0.26		
Balances at June 30, 2018 (unaudited)	867,474	52,224,031	$ 0.23	7.0	$ 10,597
Options vested and exercisable-December 31, 2017		27,642,470	$ 0.20	6.6	$ 2,655
Options vested and expected to vest-December 31, 2017		49,896,115	$ 0.22	7.4	$ 2,053
Option vested and exercisable—June 30, 2018 (unaudited)		31,872,331	$ 0.20	6.4	$ 7,422
Options vested and expected to vest— June 30, 2018 (unaudited)		48,147,600	$ 0.22	6.9	$ 10,059

The aggregate intrinsic values of options outstanding, options exercisable, options vested and exercisable, and options vested and expected to vest were calculated as the difference between the exercise price of the options and the estimated fair value of the Company's common stock, as determined by the board of directors, as of December 31, 2016, December 31, 2017 and June 30, 2018 (unaudited). The total grant date fair value of options that vested during each of the years ended December 31, 2016 and 2017 was $0.9 million, and $0.3 million (unaudited) and $0.6 million (unaudited) for the six months ended June 30, 2017 and 2018, respectively.

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The following table summarizes information about stock options outstanding under the Plan at December 31, 2017:

Options Outstanding			Options Vested and Exercisable	
Exercise Price	Number Outstanding	Average Remaining Contractual Life (Years)	Number Vested	Weighted-Average Exercise Price
$0.015 – $0.18	5,529,514	4.1	5,341,480	$ 0.11
$0.19 – $0.21	10,917,766	6.6	9,198,695	$ 0.19
$0.22 – $0.23	3,029,079	5.3	2,879,079	$ 0.22
$0.24 – $0.24	19,220,707	8.0	9,462,322	$ 0.24
$0.25 – $0.26	10,459,300	9.4	583,200	$ 0.26
$0.27 – $0.54	4,887,607	9.2	177,694	$ 0.34
	54,043,973		27,642,470	

The following table summarizes information about stock options outstanding under the Plan at June 30, 2018 (unaudited):

Options Outstanding			Options Vested and Exercisable	
Exercise Price	Number Outstanding	Average Remaining Contractual Life (Years)	Number Vested	Weighted-Average Exercise Price
$0.015 – $0.18	5,522,014	3.6	5,375,138	$ 0.11
$0.19 – $0.21	10,724,461	6.1	10,365,422	$ 0.19
$0.22 – $0.23	2,877,204	4.8	2,727,204	$ 0.22
$0.24 – $0.24	18,252,606	7.5	11,069,978	$ 0.24
$0.25 – $0.26	10,186,017	8.9	1,723,975	$ 0.26
$0.27 – $0.54	4,661,729	8.7	610,614	$ 0.34
	52,224,031		31,872,331	

Early Exercise of Unvested Stock Options

Early exercises of stock options are subject to a right of repurchase by the Company of any unvested shares. The repurchase rights lapse over the original vesting period of the options. The Company accounts for the cash received in consideration for the early exercised options as a liability included in accrued liabilities, which is then reclassified to stockholders' deficit as the options vest. At December 31, 2016 and 2017, and June 30, 2018, the Company had a total of 854,104, 290,180 and 1,153,991 (unaudited) shares of common stock, respectively, subject to repurchase under the Plan and $0.2 million, $0.1 million and $0.3 million (unaudited), respectively, of associated liabilities for the repurchase.

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Stock-Based Compensation

The following table sets forth stock-based compensation expense related to options granted for the periods presented (in thousands):

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
			(unaudited)	
Cost of goods sold	$ 20	$ 23	$ 13	$ 12
Research and development	137	143	65	70
Sales and marketing	399	438	206	240
General and administrative	842	1,271	847	432
	$ 1,398	$ 1,875	$ 1,131	$ 754

Amounts above do not include $0.4 million of stock-based compensation expense related to forgiveness of notes receivable for the year ended December 31, 2017 and the six months ended June 30, 2018. Refer to Note 13 for details.

Employee Stock-Based Compensation

During the years ended December 31, 2016 and 2017 and the six months ended June 30, 2017 and 2018, the Company granted stock options to employees to purchase 11,917,085, 15,769,846, 11,511,051 (unaudited) and 961,000 (unaudited) shares of common stock, respectively, with a weighted-average grant date fair value of $0.20, $0.10, $0.17 (unaudited) and $0.11 (unaudited), respectively. As of December 31, 2017, there was a total unrecognized compensation cost of $2.9 million. These costs are expected to be recognized over a period of approximately 2.5 years. The Company estimates the fair value of stock options using the Black-Scholes option valuation model. The fair value of employee stock options is being amortized on a straight-line basis over the requisite service period of the awards. The fair value of employee stock options was estimated using the assumptions below. Each of these inputs is subjective and its determination generally requires significant judgment.

Performance Stock Options

In March 2017, the Company granted 10,153,900 performance stock options at a grant price of $0.33, of which 7,353,900 performance options will vest monthly over four years and 2,800,000 performance options will vest monthly over three years. The vesting period will begin on the date of the closing of an IPO, the performance condition, subject to the optionee's continuous service. Stock-based compensation expense for performance stock options is based on the probability of achieving certain performance criteria, as defined in the individual option grant agreement. Periodically, the Company estimates the number of performance options ultimately expected to vest and recognizes stock-based compensation expense for those options when it becomes probable that the performance criteria will be met. As of December 31, 2017 and June 30, 2018, an IPO was not deemed probable and thus no expense was recognized. In December 2017, a portion of these option grants were modified as described in the options modification/repricing section below.

Fair Value of Common Stock

The fair value of the shares of the Company's common stock underlying the stock options has historically been determined by the Company's Board of Directors. Because there has been no public market for the

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Company's common stock, its Board of Directors has determined the fair value of the Company's common stock at the time of grant of the option by considering a number of objective and subjective factors, including independent third-party valuations, the Company's stage of development, sales of the Company's redeemable convertible preferred stock, the Company's operating and financial performance, equity market conditions affecting comparable public companies, the lack of liquidity of the Company's capital stock, and the general and industry-specific economic outlooks.

Expected Term

The expected term represents the period that the share-based awards are expected to be outstanding. The Company used the simplified method to determine the expected term, which is calculated as the average of the time to vesting and the contractual life of the options.

Expected Volatility

As the Company's common stock has never been publicly traded, the expected volatility is derived from the average historical volatilities of publicly traded companies within its industry that the Company considers to be comparable to its business over a period approximately equal to the expected term for its stock options.

Risk-Free Interest Rate

The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of the option.

Dividend Yield

The Company has never paid dividends on its common stock and has no plans to pay dividends on its common stock. Therefore, the Company used an expected dividend yield of zero.

Expected Forfeiture Rate

The Company is required to estimate forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from those estimates. The Company uses historical data to estimate pre-vesting option forfeitures and record stock-based compensation expense only for those awards that are expected to vest. To the extent actual forfeitures differ from the estimates, the difference will be recorded as a cumulative adjustment in the period that the estimates are revised.

The grant date fair value of the stock option awards granted to employees was estimated at the date of grant using a Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31,		June 30,	
	2016	2017	2017	2018
			(unaudited)	
Expected term	6.25	5.71	6.25	6.25
Expected volatility	44%-54%	42%-55%	43%-55%	42%-45%
Risk-free interest rate	1.14%-2.19%	1.73%-2.31%	1.76%-2.28%	2.35%-2.93%
Dividend yield	0%	0%	0%	0%

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Non-Employee Stock-Based Compensation

During the years ended December 31, 2016 and 2017 and the six months ended June 30, 2017 and 2018, the Company granted 50,000, 12,000, 12,000 (unaudited) and 12,500 (unaudited) stock options, respectively, to nonemployees, at an average exercise price of $0.54, $0.33, $0.33 (unaudited) and $0.26 (unaudited) per share, respectively. The stock-based compensation expense was insignificant for the all periods presented.

Option Modification/Repricing

In July 2016, the Company modified the terms of 10,365,515 vested and unvested stock option awards by reducing their exercise price from $0.44 – $0.54 to $0.24 per share. There was no change in any of the other terms of the option awards. The modification resulted in an incremental value of $0.4 million being allocated to the options, of which $0.1 million was recognized to expense immediately based on options that were vested at the time of the modification. The remaining incremental value of $0.3 million attributable to unvested shares at December 31, 2016 will be recognized over a weighted-average remaining term of 2.55 years.

In December 2017, the Company modified the terms of 7,103,900 unvested stock option awards granted in March 2017, by reducing their exercise price from $0.33 to $0.26 per share. In addition, the vesting performance conditions for these options were removed and the vesting commencement date changed from the IPO date to September 2017. There were no other changes in any of the other terms of the option awards. Due to these options previously subject to performance conditions that were not deemed probable of occurring, the Company had not recognized any expense related to these grants. The modification resulted in total expense of $0.8 million that is recognized over the amended vesting period of forty-eight months.

11. Employee Benefit Plan

The Company sponsors a 401(k) plan covering all employees. Contributions made by the Company are discretionary and are determined annually by the Board of Directors. The Company has made no contributions to the 401(k) plan since its inception.

12. Income Taxes

The components of the Company's loss before income taxes are as follows (in thousands):

	Year Ended December 31,	
	2016	2017
Domestic	$ (20,429)	$ (22,706)
Foreign	(160)	(322)
Loss before income taxes	$ (20,589)	$ (23,028)

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The components of income tax expense are as follows (in thousands):

	Year Ended December 31,	
	2016	2017
Current tax expense:		
Federal	$ —	$ —
State	—	—
Foreign	—	—
Total current tax expense	—	—
Deferred tax expense:		
Federal	6,810	(9,574)
State	941	2,061
Foreign	—	—
Total deferred tax expense	7,751	(7,513)
Change in deferred tax valuation allowance	(7,751)	7,513
Net deferred tax expense	—	—
Provision for income taxes	$ —	$ —

Income tax expense differs from the amount computed by applying the statutory federal income tax rate due to the following:

	Year Ended December 31,	
	2016	2017
Tax at statutory federal rate	(34.0%)	(34.0%)
State tax, net of federal benefit	(4.3%)	(4.3%)
Measurement of deferred taxes as a result of tax reform	0.0%	68.7%
Tax credits	(1.3%)	(0.3%)
Change in deferred tax valuation allowance	37.6%	(32.6%)
Other	2.0%	2.5%
Total income tax expense	0.0%	0.0%

The tax effects of temporary differences and carryforwards that give rise to significant portions of the deferred tax assets are presented below (in thousands):

	December 31,	
	2016	2017
Net operating loss carryforwards	$ 39,966	$ 32,210
Research and development credits	1,868	2,070
Depreciation and amortization	192	179
Accruals and reserves	1,321	1,376
	43,347	35,835
Less: Valuation allowance	(43,347)	(35,835)
Total deferred tax assets	$ —	$ —

The Company has established a full valuation allowance against its deferred tax assets due to the uncertainty surrounding realization of such assets. The valuation allowance decreased by $7.5 million in the year ended

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December 31, 2017, due to an increase in total deferred tax assets and a decrease in the deferred tax assets related to the reduction of the U.S. corporate income tax rate from the Tax Cuts and Jobs Act ("2017 Tax Act").

As of December 31, 2017, the Company had net operating loss ("NOL") carryforwards of approximately $124.9 million and $101.7 million available to reduce future taxable income, if any, for federal and state income tax purposes, respectively. If not utilized, the Company's federal NOL carryforward begins to expire in 2029, and the state NOL carryforward begins to expire in 2019.

As of December 31, 2017, the Company had research credit carryforwards of approximately $1.6 million and $1.7 million available to reduce future taxable income, if any, for both federal and state income tax purposes, respectively. The federal research credits begin to expire in 2030, and the state research credits have no expiration date.

Utilization of the Company's NOL and tax credit carryforwards may be subject to a substantial annual limitation due to the ownership change limitations included in the Internal Revenue Code of 1986 ("Section 382") and similar state provisions. The annual limitation may result in the expiration of NOL and credits before utilization. The Company has determined that it experienced Section 382 ownership changes in 2010 and $1.4 million of its NOLs are limited. The Company does not expect any additional NOL carryforwards or its credits as of December 31, 2017 to expire as a result of Section 382.

The Company accounts for the uncertainty in income taxes by utilizing a comprehensive model for the recognition, measurement, presentation and disclosure in financial statements of any uncertain tax positions that have been taken or are expected to be taken on an income tax return. The changes in the Company's uncertain income tax positions for the years ended December 31, 2016 and 2017 consisted of the following (in thousands):

Beginning balance as of January 1, 2016	$831
Increases in balances related to tax positions taken during 2016	119
Ending balance as of December 31, 2016	950
Increases in balances related to tax positions taken during 2017	43
Ending balance as of December 31, 2017	$993

The Company has elected to recognize interest and penalties related to uncertain tax positions as a component of income tax expense. The Company has accrued zero at December 31, 2016 and 2017 for payment of interest related to unrecognized tax benefits. None of the Company's unrecognized tax benefits that, if recognized, would affect its effective tax rate at December 31, 2017.

The Company currently has no federal or state tax examinations in progress nor has it had any federal or state examinations since inception. As a result of the Company's NOL carryforwards, all of its tax years are subject to federal and state tax examinations.

The Company is subject to the provisions of the ASC 740-10, Income Taxes, which requires that the effect on deferred tax assets and liabilities of a change in tax rates be recognized in the period the tax rate change was enacted. The carrying value of U.S. deferred taxes is determined by the enacted U.S. corporate income tax rate. Consequently, the reduction in the U.S. corporate income tax rate as a result of the United States enacted law commonly known as the 2017 Tax Act, which makes widespread changes to the Internal Revenue Code, impacts the carrying value of deferred tax assets. Under the new corporate income tax rate of 21% of the U.S. net deferred tax asset position decreased by approximately $15.8 million. Uncertainty regarding the impact of tax reform remains, as a result of factors including future regulatory and rulemaking processes, the prospects of additional corrective or supplemental legislation, potential trade or other litigation, and other factors.

SI-BONE, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118 ("SAB 118"), which provides guidance for the tax effect of the 2017 Tax Act. SAB 118 provides a measurement period that should not extend beyond one year from the 2017 Tax Act's enactment date for companies to complete the accounting under Accounting Standards Codification Topic 740, Income Taxes ("ASC 740"). In accordance with SAB 118, the Company must reflect the income tax effects of those aspects of the 2017 Tax Act for which the accounting under ASC 740 is complete. To the extent that its accounting for certain income tax effects of the 2017 Tax Act is incomplete, but the Company is able to determine a reasonable estimate, the Company must record a provisional estimate in its consolidated financial statements. If the Company cannot determine a provisional estimate to be included in its consolidated financial statements, the Company should continue to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the 2017 Tax Act. It is expected that the U.S. Treasury will issue regulations and other guidance on the application of certain provisions of the 2017 Tax Act. The Company will analyze that guidance and other necessary information to refine its estimates and complete its accounting for the tax effects of the 2017 Tax Act, as necessary. The Company considers the accounting of the deferred tax re-measurements to be complete. However, ongoing guidance and accounting interpretation are expected in the near term and the Company expects to complete its analysis within the measurement period in accordance with SAB 118.

13. Related Party Transactions

In March 2013, the Company granted a loan to its then current Chief Financial Officer to assist with the exercise of his stock option grants in the form of a full recourse promissory note with an aggregate principal amount of $0.2 million. The note is collateralized by the common stock issued upon the exercise of the stock options, as well as personal assets of the borrower. Interest under this note will accrue at the rate of 1.09% per annum. In November 2016, the loan amount was partially repaid in the amount of $0.1 million (including principal and interest). The remainder of the principal balance of this note, together with all accrued and unpaid interest to date, was fully paid in December 2017.

In February 2014, the Company granted a loan to its Chief Executive Officer to assist with the exercise of his stock option grants in the form of a full recourse promissory note with an aggregate principal amount of $0.4 million. The note is collateralized by the common stock issued upon the exercise of the stock options, as well as personal assets of the borrower. At the time of issuance, the Company accounted for the note as a full recourse promissory note based on historical pattern of collecting payment on notes in full and no other notes had been forgiven, nor had any recourse notes been substantively converted to nonrecourse. Interest under this note will accrue at the rate of 1.97% per annum. The principal balance of this note, together with all accrued and unpaid interest to date, is due in February 2019.

In March 2017, the Company forgave $0.2 million of principal and interest due on a promissory note from its Chief Executive Officer. In addition, the Board of Directors approved the forgiveness of the remaining 50% of the principal balance of the note upon the earlier of an IPO, change of control, or January 1, 2018. At the time of the forgiveness, all of the related stock options were fully vested. As a result, the Company has expensed the principal note balance of $0.4 million to stock-based compensation expense and accrued interest of $0.1 million to general and administrative expenses in the consolidated statement of operations.

SI-BONE, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

14. Net Loss Per Share of Common Stock

Basic and Diluted Net Loss per Share

The following table summarizes the computation of basic and diluted net loss per share (in thousands, except share and per share data):

	Year Ended December 31,		Six Months Ended June 30,	
	2016	2017	2017	2018
			(unaudited)	
Net loss	$ (20,589)	$ (23,039)	$ (12,451)	$ (7,348)
Weighted-average shares used to compute basic and diluted net loss per share	59,659,307	62,411,906	62,024,861	64,862,952
Net loss per share, basic and diluted	$ (0.35)	$ (0.37)	$ (0.20)	$ (0.11)

Unvested shares for the years ended December 31, 2016 and 2017 and the six months ended June 30, 2017 (unaudited) and 2018 (unaudited) were excluded from the weighted average shares used to compute basic and diluted net loss per share.

The following common stock equivalents were excluded from the computation of diluted net loss per share for the periods presented because including them would have been antidilutive:

	December 31,		June 30,	
	2016	2017	2017	2018
			(unaudited)	
Stock options	44,322,182	54,043,973	55,366,615	52,224,031
Shares subject to repurchase	854,104	290,180	615,251	1,153,991
Redeemable convertible preferred stock	206,835,359	217,201,525	217,201,525	217,201,525
Redeemable convertible preferred stock warrants	2,878,694	2,891,973	2,891,973	2,891,973
Common stock warrants	2,212,918	2,237,918	2,237,918	2,237,918

SI-BONE, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Unaudited Pro Forma Net Loss Per Share

Unaudited pro forma basic and diluted loss per share is computed as follows (in thousands, except share and per share data):

	Year Ended December 31, 2017	Six Months Ended June 30, 2018
		(unaudited)
Numerator:		
Net loss	$ (23,039)	$ (7,348)
Change in fair value of redeemable convertible preferred stock warrant liability	(166)	224
Pro forma net loss attributable to common shareholder—basic and diluted	$ (23,205)	$ (7,124)
Denominator:		
Weighted-average shares used to compute basic and diluted net loss per share		
Adjustment to reflect the assumed conversion of redeemable convertible preferred stock	217,201,525	217,201,525
Adjustment to reflect automatic net exercise of redeemable convertible preferred stock warrants into common stock		
Pro forma weighted average common shares used to compute net loss per share, basic and diluted preferred stock outstanding		
Net loss per share, basic and diluted	$ —	$ —

15. Subsequent Events

The consolidated financial statements reflect management's evaluation of subsequent events through July 31, 2018, the date the consolidated financial statements were available to be issued.

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Shares

Common Stock

Prospectus

Morgan Stanley **BofA Merrill Lynch**

Canaccord Genuity **JMP Securities**

, 2018

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the various expenses expected to be incurred and payable by us in connection with the sale and distribution of our common stock, other than underwriting discounts and commissions. All amounts are estimates except for the Securities and Exchange Commission (SEC) registration fee, the Financial Industry Regulatory Authority (FINRA) filing fee and the Nasdaq Global Market listing fee.

	Payable by us
SEC registration fee	$ *
FINRA filing fee	*
Nasdaq Global Market listing fee	*
Blue sky fees and expenses	*
Accounting fees and expenses	*
Legal fees and expenses	*
Printing and engraving expenses	*
Registrar and transfer agent fees and expenses	*
Miscellaneous fees and expenses	*
Total	$ *

* To be filed by amendment.

Item 14. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers under certain circumstances and subject to certain limitations. The terms of Section 145 of the Delaware General Corporation Law are sufficiently broad to permit indemnification under certain circumstances for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

As permitted by the Delaware General Corporation Law, our amended and restated certificate of incorporation and amended and restated bylaws contain provisions relating to the limitation of liability and indemnification of directors and officers. The amended and restated certificate of incorporation provides that our directors will not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, except for liability:

- for any breach of the director's duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- in respect of unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or
- for any transaction from which the director derives any improper personal benefit.

Our amended and restated certificate of incorporation also provides that if Delaware law is amended after the approval by our stockholders of the certificate of incorporation to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law.

Our amended and restated bylaws provide that we will indemnify our directors and officers to the fullest extent permitted by Delaware law, as it now exists or may in the future be amended, against all expenses and liabilities reasonably incurred in connection with their service for or on our behalf. Our amended and restated bylaws provide that we shall advance the expenses incurred by a director or officer in advance of the final disposition of an action or proceeding, and permit us to secure insurance on behalf of any director, officer, employee, or other enterprise agent for any liability arising out of his or her action in that capacity, whether or not Delaware law would otherwise permit indemnification.

We intend to enter into indemnification agreements with each of our directors and executive officers and certain other key employees, a form of which is attached as Exhibit 10.1. The form of agreement provides that we will indemnify each of our directors, executive officers, and such other key employees against any and all expenses incurred by that director, executive officer, or other key employee because of his or her status as one of our directors, executive officers or other key employees, to the fullest extent permitted by Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws. In addition, the form agreement provides that, to the fullest extent permitted by Delaware law, we will advance all expenses incurred by our directors, executive officers and other key employees in connection with a legal proceeding.

Reference is made to the underwriting agreement contained in Exhibit 1.1 to this registration statement, indemnifying our directors and officers against limited liabilities. In addition, Section 1.9 of our amended and restated investors' rights agreement, or IRA, contained in Exhibit 10.19 to this registration statement provides for indemnification of certain of our stockholders against liabilities described in our IRA.

We maintain insurance policies that indemnify our directors and officers against various liabilities under the Securities Act and the Exchange Act of 1934, as amended, that might be incurred by any director or officer in his or her capacity as such.

Item 15. Recent Sales of Unregistered Securities

The following sets forth information regarding all unregistered securities sold from January 1, 2013 through July 31, 2018:

(1) In April 2014, we issued and sold an aggregate of 4,501,808 shares of our Series 5 preferred stock at $0.51 per share and warrants to purchase up to 988,522 shares of our Series 5 preferred stock with an exercise price of $0.51 per share to two accredited investor in connection with the conversion of outstanding convertible promissory notes plus accrued interest in the aggregate amount of $2,274,764.

(2) From April 2014 to June 2015, we issued and sold an aggregate of 59,747,277 shares of our Series 6 preferred stock at $0.92 per share to 31 accredited investors for an aggregate consideration of approximately $54,674,733.

(3) In connection with the Loan and Security Agreement we entered into with Silicon Valley Bank, or SVB, on July 22, 2013, we issued to each of SVB and Westriver Mezzanine Loans, LLC, or Westriver, a warrant to purchase, in the aggregate, 1,818,182 shares of our common stock with an exercise price of $0.22 per share. As of June 30, 2018, the warrants were exercisable for an aggregate of 1,818,182 shares of common stock with an exercise price of $0.22 per share until their expiration on July 22, 2023. In addition, we issued to SVB a warrant to purchase 395,804 shares of our Series 5 preferred stock with an exercise price of $0.51 per share. As of June 30, 2018, the warrant was exercisable for an aggregate of 395,804 shares of Series 5 preferred stock at an exercise price of $0.51 per share until their expiration on July 22, 2023.

(4) In connection with the Amended and Restated Loan and Security Agreement we entered into with SVB, on November 26, 2014, we issued to each of SVB and Westriver, a warrant to purchase, in the aggregate, 394,736 shares of our common stock with an exercise price of $0.19 per share. As of

June 30, 2018, the warrants were exercisable for an aggregate of 394,736 shares of common stock with an exercise price of $0.19 per share until their expiration on November 26, 2024. In addition, we issued to SVB, a warrant to purchase 113,587 shares of our Series 6 preferred stock with an exercise price of $0.92 per share. As of June 30, 2018, the warrant was exercisable for an aggregate of 113,587 shares of Series 6 preferred stock with an exercise price of $0.92 per share until their expiration on November 26, 2024.

(5) In connection with the Loan and Security Agreement, dated October 20, 2015, we entered into with Oxford Finance LLC, or Oxford, and SVB, we issued to each of Oxford and SVB a warrant to purchase, in aggregate (i) 708,120 shares of Series 6 preferred stock with an exercise price of $0.92 per share in October 2015, (ii) 437,111 shares of Series 6 preferred stock with an exercise price of $0.92 per shares in November 2015 and (iii) 174,844 shares of Series 7 preferred stock with an exercise price of $0.56 per share in December 2016. As of June 30, 2018, the above warrants were exercisable for an aggregate of (i) 749,739 shares of our common stock with an exercise price of $0.92 per share until their expiration on October 20, 2025, (ii) 462,801 shares of our common stock with an exercise price of $0.92 per share until their expiration on November 9, 2025 and (iii) 174,844 shares of our common stock with an exercise price of $0.56 per share until their expiration on December 22, 2026, respectively.

(6) From June 2016 to March 2017, we issued and sold an aggregate of 46,447,468 shares of Series 7 preferred stock at $0.56 per share to 21 accredited investors for an aggregate consideration of approximately $25,889,819.

(7) On March 1, 2017, we issued a warrant to purchase 25,000 shares of our common stock with an exercise price of $0.33 per share to a former consultant.

(8) Under our 2008 Stock Plan, we granted options to purchase an aggregate of 134,794,616 shares of our common stock with per share exercise prices ranging from $0.015 to $0.54. Of these, options to purchase (i) 44,008,293 shares have been exercised, (ii) 38,762,773 shares have been cancelled or expired without being exercised and (iii) 52,023,550 shares remain outstanding.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering. The Registrant believes that each transaction was exempt from the registration requirements of the Securities Act in reliance on the following exemptions:

(1) The transactions set forth in paragraphs (1) through (7) were deemed to be exempt from registration under the Securities Act in reliance upon Section 4(a)(2) of the Securities Act or Regulation D promulgated thereunder as transactions by an issuer not involving any public offering. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed upon the stock certificates issued in these transactions. All recipients made representations to us that such recipient was an “accredited investor,” as defined under Rule 501 of the Securities Act, and that such recipient had adequate information about us or had adequate access, through their relationships with us, to information about us.

(2) The transactions set forth in paragraph (9) were deemed to be exempt from registration under the Securities Act in reliance upon Rule 701 promulgated under Section 3(b) of the Securities Act pursuant to benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed upon the stock certificates issued in these transactions. All recipients had adequate information about us or had adequate access, through their relationships with us, to information about us.

Item 16. Exhibits and Financial Statement Schedules

(a) Exhibits.

Exhibit No.	Description
1.1*	Form of Underwriting Agreement.
3.1	Restated Certificate of Incorporation of Registrant, as amended.
3.2*	Form of Amended and Restated Certificate of Incorporation of Registrant, to be effective upon closing of this offering.
3.3	Second Amended and Restated Bylaws of Registrant.
3.4*	Form of Amended and Restated Bylaws of Registrant, to be effective upon closing of this offering.
4.1*	Form of Registrant's Common Stock Certificate.
5.1*	Opinion of Cooley LLP.
10.1	Form of Indemnity Agreement between the Registrant and each of its directors and executive officers.
10.2*	2008 Stock Plan and forms of agreements thereunder.
10.3*	2018 Equity Incentive Plan and form of agreements thereunder.
10.4*	2018 Employee Stock Purchase Plan.
10.5#	Quality and Manufacturing Agreement, dated April 18, 2016, between the Registrant and Orchid MPS Holdings, LLC and Addendum No. 1 dated March 1, 2017.
10.6#	Manufacturing, Quality and Supply Agreement, dated January 31, 2017, between the Registrant and rms Company and Addendum No. 1 dated July 7, 2017.
10.7	Offer Letter Agreement, dated December 15, 2009, between the Registrant and Jeffrey W. Dunn.
10.8	Offer Letter Agreement, dated February 19, 2015, between the Registrant and Michael A. Pisetsky
10.9	Letter Regarding Change to Employment Terms, dated June 20, 2016, between the Registrant and Michael A. Pisetsky.
10.10	Offer Letter Agreement, dated April 27, 2015, between the Registrant and Laura Francis.
10.11	Severance and Change in Control Agreement dated March 15, 2016, between the Registrant and Laura Francis.
10.12	Amended and Restated Letter Agreement, dated March 1, 2017, between the Registrant and Laura Francis.
10.13	Offer Letter Agreement, dated February 7, 2012, between the Registrant and W. Carlton Reckling.
10.14	Severance and Change in Control Agreement, dated March 15, 2016, between the Registrant and W. Carlton Reckling.
10.15	Letter Agreement, dated January 18, 2017, between the Registrant and W. Carlton Reckling.
10.16	Offer Letter Agreement, dated December 16, 2010, between the Registrant and Scott A. Yerby.
10.17	Severance and Change in Control Agreement dated March 15, 2016, between the Registrant and Scott A. Yerby.
10.18	Offer Letter Agreement, dated June 19, 2016, between the Registrant and Anthony J. Recupero.

Exhibit No.	Description
10.19	Amended and Restated Investors' Rights Agreement, dated June 2, 2016, by and among the Registrant and the parties thereto.
10.20	Loan Agreement, dated October 13, 2017, between the Registrant and Biopharma Credit Investments IV Sub LP, as amended on June 15, 2018.
10.21	Office Lease Agreement, dated February 2, 2018, between the Registrant and Bixby SPE Finance 11, LLC, as amended on April 16, 2018.
10.22*	Form of Warrant to Purchase Common Stock dated July 19, 2013.
10.23*	Form of Warrant to Purchase Stock (Series 5 Preferred).
10.24*	Form of Warrant to Purchase Common Stock dated November 26, 2014.
10.25*	Form of Warrant to Purchase Stock (Series 6 Preferred).
10.26*	Form of Warrant to Purchase Stock (Series 7 Preferred).
21.1	List of Subsidiaries of Registrant.
23.1*	Consent of Cooley LLP (contained in Exhibit 5.1).
23.2*	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.
24.1*	Power of Attorney (contained in the signature page to this registration statement).

* To be filed by amendment.
\# Confidential Treatment Requested.

(b) Financial Statement Schedules. All schedules have been omitted because the information required to be presented in them is not applicable or is shown in the financial statements or related notes, which is incorporated herein by reference.

Item 17. Undertakings

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreements certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b) (1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Santa Clara, State of California, on the day of , 2018.

SI-BONE, INC.

By: _____

Jeffrey W. Dunn
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS that each person whose signature appears below constitutes and appoints Jeffrey W. Dunn, Laura A. Francis, and Michael A. Pisetsky, and each of them, his or her true and lawful attorneys-in-fact and agents, each with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments, including post-effective amendments, to this registration statement, and any registration statement relating to the offering covered by this registration statement and filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that each of said attorney-in-fact and agents or their substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Name	Title	Date
Jeffrey W. Dunn	President, Chief Executive Officer (*Principal Executive Officer*), and Chairman	, 2018
Laura A. Francis	Chief Financial Officer (*Principal Financial and Accounting Officer*)	, 2018
David P. Bonita, M.D.	Director	, 2018
Timothy E. Davis, Jr.	Director	, 2018
John G. Freund, M.D.	Director	, 2018
Gregory K. Hinckley	Director	, 2018

Name	Title	Date
Karen A. Licitra	Director	, 2018
Mark A. Reiley, M.D.	Director	, 2018
Timothy B. Petersen	Director	, 2018
Keith C. Valentine	Director	, 2018

Exhibit 3.1

RESTATED CERTIFICATE OF INCORPORATION
OF
SI-BONE, INC.

(Pursuant to Sections 242 and 245 of the
General Corporation Law of the State of Delaware)

SI-BONE, INC., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "General Corporation Law"),

DOES HEREBY CERTIFY:

FIRST: That the name of this corporation is **SI-BONE, INC.** and that this corporation was originally incorporated pursuant to the General Corporation Law on March 18, 2008 under the name SI-BONE Inc.

SECOND: That the Board of Directors duly adopted resolutions proposing to amend and restate the Restated Certificate of Incorporation of this corporation, declaring said amendment and restatement to be advisable and in the best interests of this corporation and its stockholders, and authorizing the appropriate officers of this corporation to solicit the consent of the stockholders therefor, which resolution setting forth the proposed amendment and restatement is as follows:

RESOLVED, that the Restated Certificate of Incorporation of this corporation be amended and restated in its entirety as follows:

ARTICLE I

The name of this corporation is SI-BONE, Inc.

ARTICLE II

The address of the registered office of this corporation in the State of Delaware is 3500 South Dupont Highway, in the City of Dover, County of Kent, 19901. The name of its registered agent at such address is Incorporating Services, Ltd.

ARTICLE III

The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law.

ARTICLE IV

A. Authorization of Stock. This corporation is authorized to issue two classes of stock to be designated, respectively, common stock and preferred stock. The total number of shares that this corporation is authorized to issue is Five Hundred Forty Five Million Nine Hundred Fifty Three Thousand Eight Hundred Thirty Five (545,953,835). The total number of shares of common stock authorized to be issued is Three Hundred Thirty Eight Million (338,000,000), par value $0.0001 per share (the "Common Stock"), of which One Hundred Eight Million (108,000,000) shares are designated as "Series 1 Common Stock" and Two Hundred Thirty Million (230,000,000) shares are designated as "Series 2 Common Stock". The total number of shares of preferred stock authorized to be issued is Two Hundred Seven Million Nine Hundred Fifty Three Thousand Eight Hundred Thirty Five (207,953,835), par value $0.0001 per share (the "Preferred Stock"), of which Four Million Four Hundred Eleven Thousand Seven Hundred Thirty One (4,411,731) shares are designated as "Series 1 Preferred Stock," Twelve Million Seven Hundred Seventy Three Thousand One Hundred Seven (12,773,107) shares are designated as "Series 2 Preferred Stock", Eight Million Nine Hundred Eighty One Thousand Two Hundred Fifty (8,981,250) shares are designated as "Series 3 Preferred Stock", Forty Five Million One Hundred Sixty Two Thousand Eight Hundred Fifty Three (45,162,853) shares are designated as "Series 4 Preferred Stock", Thirty Seven Million Five Hundred Fifty Thousand Four Hundred Eighty Four (37,550,484) shares are designated as "Series 5 Preferred Stock", Sixty One Million Six Thousand Ninety Five (61,006,095) are designated as "Series 6 Preferred Stock" and Thirty Eight Million Sixty Eight Thousand Three Hundred Fifteen (38,068,315) are designated as "Series 7 Preferred Stock".

B. Rights, Preferences and Restrictions of Preferred Stock. The rights, preferences, privileges and restrictions granted to and imposed on the Preferred Stock are as set forth below in this Article IV(B).

1. Dividend Provisions.

(a) The holders of shares of Preferred Stock shall be entitled to receive dividends, out of any assets legally available therefor, prior and in preference to any declaration or payment of any dividend (payable other than in Common Stock or other securities and rights convertible into or entitling the holder thereof to receive, directly or indirectly, additional shares of Common Stock of this corporation) on the Common Stock of this corporation, at the applicable Dividend Rate (as defined below), payable when, as and if declared by the Board of Directors. Such dividends shall not be cumulative. The holders of the outstanding Preferred Stock can waive any dividend preference that such holders shall be entitled to receive under this Section 1 upon the affirmative vote or written consent of the holders of a majority of the shares of Preferred Stock then outstanding (voting together as a single class and not as separate series, and on an as-converted basis). For purposes of this subsection 1(a), "Dividend Rate" shall mean $0.002784 per annum for each share of Series 1 Preferred Stock, $0.00952 per annum for each share of Series 2 Preferred Stock, $0.0256 per annum for each share of Series 3 Preferred Stock, $0.028 per annum for each share of Series 4 Preferred Stock, $0.04043 per annum for each share of Series 5 Preferred Stock, $0.073208 per annum for each share of Series 6 Preferred Stock and $0.044592 per annum for each share of Series 7 Preferred Stock (each as adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like).

(b) After payment of such dividends, any additional dividends or distributions shall be distributed among all holders of Common Stock and Preferred Stock in proportion to the number of shares of Common Stock that would be held by each such holder if all shares of Preferred Stock were converted to Common Stock at the then effective conversion rate.

2. Liquidation Preference.

(a) In the event of any Liquidation Event (as defined below), either voluntary or involuntary, the holders of each series of Preferred Stock shall be entitled to receive, prior and in preference to any distribution of the proceeds of such Liquidation Event (the "Proceeds") to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to the sum of the applicable Original Issue Price (as defined below) for such series of Preferred Stock, plus declared but unpaid dividends on such share. If, upon the occurrence of any Liquidation Event, the Proceeds thus distributed among the holders of the Preferred Stock shall be insufficient to permit the payment to such holders of the full aforesaid preferential amounts, then the entire Proceeds legally available for distribution shall be distributed ratably among the holders of the Preferred Stock in proportion to the full preferential amount that each such holder is otherwise entitled to receive under this subsection (a), on a pari passu, equal priority basis. For purposes of this Restated Certificate of Incorporation, "Original Issue Price" shall mean $0.0348 per share for each share of the Series 1 Preferred Stock, $0.119 per share for each share of the Series 2 Preferred Stock, $0.32 per share for each share of the Series 3 Preferred Stock, $0.35 per share for each share of the Series 4 Preferred Stock, $0.5053 per share for each share of the Series 5 Preferred Stock, $0.9151 per share for each share of the Series 6 Preferred Stock and $0.5574 per share for each share of the Series 7 Preferred Stock (in each case, as adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like with respect to such series of Preferred Stock).

(b) Upon the completion of the distribution required by subsection (a) of this Section 2, the remaining Proceeds available for distribution to stockholders shall be distributed among the holders of Series 7 Preferred Stock, Series 6 Preferred Stock, Series 5 Preferred Stock, Series 4 Preferred Stock and Common Stock pro rata based on the number of shares of Common Stock held by each (assuming full conversion of all such Preferred Stock) until, with respect to the Series 6 Preferred Stock, Series 5 Preferred Stock and Series 4 Preferred Stock, such holders shall have received the Participation Cap (as defined below); thereafter, if Proceeds remain, the holders of the Series 7 Preferred Stock and Common Stock of this corporation shall receive all of the remaining Proceeds pro rata based on the number of shares of Common Stock held by each (assuming full conversion of all such Series 7 Preferred Stock). For purposes of this Restated Certificate of Incorporation, "Participation Cap" shall mean $1.8302 for the Series 6 Preferred Stock, shall mean $1.0106 for the Series 5 Preferred Stock and shall mean $0.70 for the Series 4 Preferred Stock (each as adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like with respect to such series of Preferred Stock), which includes amounts paid pursuant to subsection (a) of this Section 2.

(c) Notwithstanding the above, for purposes of determining the amount each holder of shares of Preferred Stock is entitled to receive with respect to a Liquidation Event, each such holder of shares of a series of Preferred Stock shall be deemed to have converted (regardless of whether such holder actually converted) such holder's shares of such series into shares of Common Stock immediately prior to the Liquidation Event if, as a result of an actual conversion, such holder would receive, in the aggregate, an amount greater than the amount that would be distributed to such holder if such holder did not convert such series of Preferred Stock into shares of Common Stock. If any such holder shall be deemed to have converted shares of Preferred Stock into Common Stock pursuant to this paragraph, then such holder shall not be entitled to receive any distribution that would otherwise be made to holders of Preferred Stock that have not converted (or have not been deemed to have converted) into shares of Common Stock.

(d) In the event of a Liquidation Event, if any portion of the consideration payable to the stockholders of the Corporation is placed into escrow and/or is payable to the stockholders of this corporation subject to contingencies (such consideration collectively referred to herein as "Contingent Consideration"), the definitive agreement with respect to Liquidation Event shall provide that (i) the portion of such consideration that is not placed in escrow and not subject to any contingencies (the "Initial Consideration") shall be allocated among the holders of capital stock of the Corporation in accordance with Sections 2(a) and 2(b) as if the Initial Consideration were the only consideration payable in connection with such Liquidation Event, after taking into account the application of Section 2(c), and (ii) any Contingent Consideration which becomes payable to the stockholders of the Corporation shall be allocated among the holders of capital stock of the Corporation in accordance with Sections 2(a) and 2(b) after taking into account (x) the previous payment of (1) the Initial Consideration and (2) any other Contingent Consideration as part of the same transaction and (y) the application of Section 2(c). For the avoidance of doubt, holders of the Preferred Stock shall not be deemed to have converted such Preferred Stock into Common Stock pursuant to Section 2(c) until such time such holders of Preferred Stock actually receive as a result of such deemed conversion an amount greater than the amount to which such holders of Preferred Stock would otherwise be entitled pursuant to Sections 2(a) and 2(b) above had the Preferred Stock had not been converted to Common Stock; provided that for the purposes of the application of Section 2(c), the value of the Initial Consideration and any Contingent Consideration shall be determined at the time such Initial Consideration or Contingent Consideration, as applicable, are to be legally distributed to this corporation's stockholders as a result of such Liquidation Event.

(e) (i) For purposes of this Section 2, a "Liquidation Event" shall include (A) the closing of the sale, lease, transfer, exclusive license or other disposition of all or substantially all of this corporation's assets, in a single transaction or series of related transactions, by this corporation or any subsidiary or subsidiaries of this corporation, of all or substantially all the assets of this corporation and its subsidiaries taken as a whole (or, if substantially all of the assets of this corporation and its subsidiaries taken as a whole are held by one or more subsidiaries, the sale or disposition (whether by consolidation, merger, conversion or otherwise) of such subsidiaries of this corporation or all or substantially all of the assets of such subsidiaries), except where such sale, lease, transfer, exclusive license or other disposition is made to this corporation or one or more wholly owned subsidiaries of this corporation, (B) the consummation of a merger, consolidation or acquisition in which (x) this corporation is a

constituent party or (y) a subsidiary of this corporation is a constituent party and this corporation issues shares of its capital stock pursuant to such merger, consolidation or acquisition (except a merger, consolidation or acquisition involving this corporation or a subsidiary in which the capital stock of this corporation outstanding immediately prior to such merger, consolidation or acquisition continue to represent or are converted or exchanged for shares of capital stock which represent, immediately following such merger, consolidation or acquisition at least a majority of the voting power of the capital stock of (1) the surviving or resulting corporation or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger, consolidation or acquisition, the parent corporation of such surviving or resulting corporation); (C) any transaction or series of related transactions to which this corporation is a party in which in excess of fifty percent (50%) of this corporation's voting power is transferred; provided that a Liquidation Event shall not include any transaction or series of related transactions principally for bona fide equity financing purposes in which cash is received by this corporation or any successor or indebtedness of this corporation is cancelled or converted or a combination thereof occurs, or (D) a liquidation, dissolution or winding up of this corporation; provided, however, that a transaction shall not constitute a Liquidation Event if its sole purpose is to change the state of this corporation's incorporation or to create a holding company that will be owned in substantially the same proportions by the persons who held this corporation's securities immediately prior to such transaction. The treatment of any particular transaction or series of related transactions as a Liquidation Event may be waived by the vote or written consent of the holders of at least a majority of the voting power (as determined in accordance with subsection (5)(a) below) of all then outstanding Preferred Stock (voting together as a single class and not as separate series, and on an as-converted basis).

(ii) In any Liquidation Event, if Proceeds received by this corporation or its stockholders is other than cash, its value will be deemed its fair market value. Any securities shall be valued as follows:

(A) Securities not subject to investment letter or other similar restrictions on free marketability which are not covered by clause (B) below:

(1) If traded on a securities exchange, the value shall be deemed to be the average of the closing prices of the securities on such exchange or system over the twenty (20) trading-day period ending three (3) trading days prior to the closing of the Liquidation Event;

(2) If actively traded over-the-counter, the value shall be deemed to be the average of the closing bid or sale prices (whichever is applicable) over the twenty (20) trading-day period ending three (3) trading days prior to the closing of the Liquidation Event; and

(3) If there is no active public market, the value shall be the fair market value thereof, as mutually determined by this corporation and the holders of at least a majority of the voting power (as determined in accordance with subsection (5)(a) below) of all then outstanding shares of Preferred Stock (voting together as a single class and not as separate series, and on an as-converted basis).

(B) The method of valuation of securities subject to investment letter or other restrictions on free marketability (other than restrictions arising solely by virtue of a stockholder's status as an affiliate or former affiliate) shall be to take an appropriate discount from the market value determined as above in (A) (1), (2) or (3) to reflect the approximate fair market value thereof, as mutually determined by this corporation and the holders of at least a majority of the voting power (as determined in accordance with subsection (5)(a) below) of all then outstanding shares of such Preferred Stock (voting together as a single class and not as separate series, and on an as-converted basis).

(C) The foregoing methods for valuing non-cash consideration to be distributed in connection with a Liquidation Event shall, upon approval by the holders of at least a majority of the voting power (as determined in accordance with subsection (5)(a) below) of all then outstanding shares of Preferred Stock (voting together as a single class and not as separate series, and on an as-converted basis), be superseded by any determination of such value set forth in the definitive agreements governing such Liquidation Event.

(iii) In the event the requirements of this Section 2 are not complied with, this corporation shall forthwith either:

(A) cause the closing of such Liquidation Event to be postponed until such time as the requirements of this Section 2 have been complied with; or

(B) cancel such transaction, in which event the rights, preferences and privileges of the holders of the Preferred Stock shall revert to and be the same as such rights, preferences and privileges existing immediately prior to the date of the first notice referred to in subsection 2(d)(iv) hereof.

(iv) This corporation shall give each holder of record of Preferred Stock written notice of such impending Liquidation Event not later than twenty (20) days prior to the stockholders' meeting called to approve such transaction, or twenty (20) days prior to the closing of such transaction, whichever is earlier, and shall also notify such holders in writing of the final approval of such transaction. The first of such notices shall describe the material terms and conditions of the impending transaction and the provisions of this Section 2, and this corporation shall thereafter give such holders prompt notice of any material changes. The transaction shall in no event take place sooner than twenty (20) days after this corporation has given the first notice provided for herein or sooner than ten (10) days after this corporation has given notice of any material changes provided for herein; provided, however, that subject to compliance with the General Corporation Law such periods may be shortened or waived upon the written consent of the holders of Preferred Stock that represent at least a majority of the voting power (as determined in accordance with subsection (5)(a) below) of all then outstanding shares of such Preferred Stock (voting together as a single class, and on an as-converted basis).

3. Redemption. The Preferred Stock is not redeemable at the option of the holder.

4. Conversion. The holders of the Preferred Stock shall have conversion rights as follows (the "Conversion Rights"):

(a) Right to Convert. Each share of Preferred Stock shall be convertible, at the option of the holder thereof, at any time after the date of issuance of such share, at the office of this corporation or any transfer agent for such stock, into such number of fully paid and nonassessable shares of Series 2 Common Stock as is determined by dividing the applicable Original Issue Price for such series by the applicable Conversion Price for such series (the conversion rate for a series of Preferred Stock into Series 2 Common Stock is referred to herein as the "Conversion Rate" for such series), determined as hereafter provided, in effect on the date the certificate is surrendered for conversion. The initial Conversion Price per share for the Series 6 Preferred Stock shall be $0.8730, and the Initial Conversion Price per share for the Series 1 Preferred Stock, Series 2 Preferred Stock, Series 3 Preferred Stock, Series 4 Preferred Stock, Series 5 Preferred Stock and Series 7 Preferred Stock shall be the Original Issue Price applicable to such series; provided, however, that the Conversion Price for the Preferred Stock shall be subject to adjustment as set forth in subsection 4(d).

(b) Automatic Conversion. Each share of Preferred Stock shall automatically be converted into shares of Series 2 Common Stock at the Conversion Rate at the time in effect for such series of Preferred Stock immediately upon this corporation's sale of its Common Stock in a firm commitment underwritten public offering pursuant to a registration statement on Form S-1 or Form SB-2 under the Securities Act of 1933, as amended, resulting in aggregate gross proceeds to this corporation of not less than $50,000,000 and a per share public offering of not be less than $1.6722 (as adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like) (a "Qualified Public Offering"). Each share of Series 1 Preferred Stock, Series 2 Preferred Stock, Series 3 Preferred Stock, Series 4 Preferred Stock, Series 5 Preferred Stock, Series 6 Preferred Stock and Series 7 Preferred Stock shall automatically be converted into shares of Series 2 Common Stock at the Conversion Rate at the time in effect for such shares of Preferred Stock immediately upon the date specified by written consent or agreement of the holders of at least a majority of the voting power (as determined in accordance with subsection (5)(a) below) of all then outstanding shares of Series 1 Preferred Stock, Series 2 Preferred Stock, Series 3 Preferred Stock, Series 4 Preferred Stock, Series 5 Preferred Stock, Series 6 Preferred Stock and Series 7 Preferred Stock (voting together as a single class and not as separate series, and on an as-converted basis).

(c) Mechanics of Conversion. Before any holder of Preferred Stock shall be entitled to voluntarily convert the same into shares of Series 2 Common Stock, he or she shall surrender the certificate or certificates therefor, duly endorsed, at the office of this corporation or of any transfer agent for the Preferred Stock, and shall give written notice to this corporation at its principal corporate office, of the election to convert the same and shall state therein the name or names in which the certificate or certificates for shares of Series 2 Common Stock are to be issued. This corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Preferred Stock, or to the nominee or nominees of such holder, a certificate or certificates for the number of shares of Series 2 Common Stock to which such

holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made immediately prior to the close of business on the date of such surrender of the shares of Preferred Stock to be converted, and the person or persons entitled to receive the shares of Series 2 Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Series 2 Common Stock as of such date. If the conversion is in connection with an underwritten offering of securities registered pursuant to the Securities Act of 1933, as amended, the conversion may, at the option of any holder tendering Preferred Stock for conversion, be conditioned upon the closing with the underwriters of the sale of securities pursuant to such offering, in which event the persons entitled to receive the Series 2 Common Stock upon conversion of the Preferred Stock shall not be deemed to have converted such Preferred Stock until immediately prior to the closing of such sale of securities. If the conversion is in connection with the last sentence of the automatic conversion provision of subsection 4(b) above, such conversion shall be deemed to have been made on the conversion date described in the stockholder consent approving such conversion, and the persons entitled to receive shares of Series 2 Common Stock issuable upon such conversion shall be treated for all purposes as the record holders of such shares of Series 2 Common Stock as of such date.

(d) Conversion Price Adjustments of Preferred Stock for Certain Dilutive Issuances, Splits and Combinations. The Conversion Price of the Preferred Stock shall be subject to adjustment from time to time as follows:

(i) (A) If this corporation shall issue, on or after the date upon which this Restated Certificate of Incorporation is accepted for filing by the Secretary of State of the State of Delaware (the "Filing Date"), any Additional Stock (as defined below) without consideration or for a consideration per share less than the Conversion Price applicable to a series of Preferred Stock in effect immediately prior to the issuance of such Additional Stock, the Conversion Price for such series in effect immediately prior to each such issuance shall forthwith (except as otherwise provided in this clause (i)) be adjusted to a price (calculated to the nearest one-thousandth of a cent) determined by multiplying such Conversion Price by a fraction, the numerator of which shall be the number of shares of Common Stock Outstanding (as defined below) immediately prior to such issuance plus the number of shares of Common Stock that the aggregate consideration received by this corporation for such issuance would purchase at such Conversion Price; and the denominator of which shall be the number of shares of Common Stock Outstanding (as defined below) immediately prior to such issuance plus the number of shares of such Additional Stock. For purposes of this Section 4(d)(i)(A), the term "Common Stock Outstanding" shall mean and include the following: (1) outstanding Common Stock, (2) Common Stock issuable upon conversion of outstanding Preferred Stock, (3) Common Stock issuable upon exercise of outstanding stock options and other rights to purchase shares of capital stock and (4) Common Stock issuable upon exercise (and, in the case of warrants to purchase Preferred Stock, conversion) of outstanding warrants. Shares described in (1) through (4) above shall be included whether vested or unvested, whether contingent or non-contingent and whether exercisable or not yet exercisable.

(B) No adjustment of the Conversion Price for the Preferred Stock shall be made in an amount less than one-tenth of one cent per share. Except to the limited extent provided for in subsections (E)(3) and (E)(4), no adjustment of such Conversion Price pursuant to this subsection 4(d)(i) shall have the effect of increasing the Conversion Price above the Conversion Price in effect immediately prior to such adjustment.

(C) In the case of the issuance of Additional Stock for cash, the consideration shall be deemed to be the amount of cash paid therefor before deducting any reasonable discounts, commissions or other expenses allowed, paid or incurred by this corporation for any underwriting or otherwise in connection with the issuance and sale thereof.

(D) In the case of the issuance of the Additional Stock for a consideration in whole or in part other than cash, the consideration other than cash shall be deemed to be the fair market value thereof as determined by the Board of Directors irrespective of any accounting treatment.

(E) In the case of the issuance of options to purchase or rights to subscribe for Common Stock, securities by their terms convertible into or exchangeable for Common Stock or options to purchase or rights to subscribe for such convertible or exchangeable securities, the following provisions shall apply for purposes of determining the number of shares of Additional Stock issued and the consideration paid therefor:

(1) The aggregate maximum number of shares of Common Stock deliverable upon exercise (assuming the satisfaction of any conditions to exercisability, including without limitation, the passage of time, but without taking into account potential antidilution adjustments) of such options to purchase or rights to subscribe for Common Stock shall be deemed to have been issued at the time such options or rights were issued and for a consideration equal to the consideration (determined in the manner provided in subsections 4(d)(i)(C) and (d)(i)(D)), if any, received by this corporation upon the issuance of such options or rights plus the minimum exercise price provided in such options or rights (without taking into account potential antidilution adjustments) for the Common Stock covered thereby.

(2) The aggregate maximum number of shares of Common Stock deliverable upon conversion of, or in exchange (assuming the satisfaction of any conditions to convertibility or exchangeability, including, without limitation, the passage of time, but without taking into account potential antidilution adjustments) for, any such convertible or exchangeable securities or upon the exercise of options to purchase or rights to subscribe for such convertible or exchangeable securities and subsequent conversion or exchange thereof shall be deemed to have been issued at the time such securities were issued or such options or rights were issued and for a consideration equal to the consideration, if any, received by this corporation for any such securities and related options or rights (excluding any cash received on account of accrued interest or accrued dividends), plus the minimum additional consideration, if any, to be received by this corporation (without taking into account potential antidilution adjustments) upon the conversion or exchange of such securities or the exercise of any related options or rights (the consideration in each case to be determined in the manner provided in subsections 4(d)(i)(C) and (d)(i)(D)).

(3) In the event of any change in the number of shares of Common Stock deliverable or in the consideration payable to this corporation upon exercise of such options or rights or upon conversion of or in exchange for such convertible or exchangeable securities, the Conversion Price of the Preferred Stock, to the extent in any way

affected by or computed using such options, rights or securities, shall be recomputed to reflect such change, but no further adjustment shall be made for the actual issuance of Common Stock or any payment of such consideration upon the exercise of any such options or rights or the conversion or exchange of such securities.

(4) Upon the expiration of any such options or rights, the termination of any such rights to convert or exchange or the expiration of any options or rights related to such convertible or exchangeable securities, the Conversion Price of the Preferred Stock, to the extent in any way affected by or computed using such options, rights or securities or options or rights related to such securities, shall be recomputed to reflect the issuance of only the number of shares of Common Stock (and convertible or exchangeable securities that remain in effect) actually issued upon the exercise of such options or rights, upon the conversion or exchange of such securities or upon the exercise of the options or rights related to such securities.

(5) The number of shares of Additional Stock deemed issued and the consideration deemed paid therefor pursuant to subsections 4(d)(i)(E)(1) and (2) shall be appropriately adjusted to reflect any change, termination or expiration of the type described in either subsection 4(d)(i)(E)(3) or (4).

(ii) "Additional Stock" shall mean any shares of Common Stock issued (or deemed to have been issued pursuant to subsection 4(d)(i)(E)) by this corporation on or after the Filing Date other than:

(A) Common Stock issued pursuant to a transaction described in subsection 4(d)(iii) hereof;

(B) Shares of Common Stock issued to employees, officers, directors, consultants and other service providers for the primary purpose of soliciting or retaining their services pursuant to plans or agreements approved by this corporation's Board of Directors (which approval shall include the affirmative vote of one of the Series 4 Director, the Series 5 Director, the Series 6 Director or Series 7 Director, each as defined below (collectively, the "Preferred Directors"));

(C) Common Stock issued pursuant to an underwritten public offering;

(D) Common Stock issued pursuant to the conversion or exercise of convertible or exercisable securities outstanding on the Filing Date;

(E) Common Stock issued in connection with a bona fide business acquisition of or by this corporation, whether by merger, consolidation, sale of assets, sale or exchange of stock or otherwise, approved by the Board of Directors (which approval shall include the vote of a Preferred Director) and entered into primarily for a purpose other than for financing purposes;

(F) Common Stock issued or deemed issued pursuant to subsection 4(d)(i)(E) as a result of a decrease in the Conversion Price of any series of Preferred Stock resulting from the operation of Section 4(d);

(G) Common Stock issued upon conversion of (1) the Preferred Stock outstanding on the Filing Date and (2) the Preferred Stock issued pursuant to that certain Series 7 Preferred Stock Purchase Agreement, dated on or about the Filing Date, by and among this corporation and the Investors set forth on Schedule A thereto;

(H) Shares of Common Stock issued pursuant to any equipment leasing arrangement or debt financing arrangement, which arrangement is approved by the Board of Directors (which approval shall include the affirmative vote of a Preferred Director) and is primarily for non-equity financing purposes; or

(I) Common Stock issued to persons or entities with which this corporation has business relationships, provided such issuances are approved by the Board of Directors (which approval shall include the affirmative vote of a Preferred Director) and are primarily for non-equity financing purposes.

(iii) In the event this corporation should at any time or from time to time after the Filing Date fix a record date for the effectuation of a split or subdivision of the outstanding shares of Common Stock or the determination of holders of Common Stock entitled to receive a dividend or other distribution payable in additional shares of Common Stock or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly, additional shares of Common Stock (hereinafter referred to as "Common Stock Equivalents") without payment of any consideration by such holder for the additional shares of Common Stock or the Common Stock Equivalents (including the additional shares of Common Stock issuable upon conversion or exercise thereof), then, as of such record date (or the date of such dividend distribution, split or subdivision if no record date is fixed), the Conversion Price of the Preferred Stock shall be appropriately decreased so that the number of shares of Series 2 Common Stock issuable on conversion of each share of such series shall be increased in proportion to such increase of the aggregate of shares of Common Stock outstanding and those issuable with respect to such Common Stock Equivalents with the number of shares issuable with respect to Common Stock Equivalents determined from time to time in the manner provided for deemed issuances in subsection 4(d)(i)(E).

(iv) If the number of shares of Common Stock outstanding at any time after the Filing Date is decreased by a combination of the outstanding shares of Common Stock, then, following the record date of such combination, the Conversion Price for the Preferred Stock shall be appropriately increased so that the number of shares of Series 2 Common Stock issuable on conversion of each share of such series shall be decreased in proportion to such decrease in outstanding shares.

(e) Other Distributions. In the event this corporation shall declare a distribution payable in securities of other persons, evidences of indebtedness issued by this corporation or other persons, assets (excluding cash dividends) or options or rights not referred to in subsection 4(d), then, in each such case for the purpose of this subsection 4(e), the holders of the Preferred Stock shall be entitled to a proportionate share of any such distribution as though they were the holders of the number of shares of Common Stock of this corporation

into which their shares of Preferred Stock are convertible as of the record date fixed for the determination of the holders of Common Stock of this corporation entitled to receive such distribution.

(f) Recapitalizations. If at any time or from time to time there shall be a recapitalization of the Common Stock (other than a subdivision, combination or merger or sale of assets transaction provided for elsewhere in this Section 4 or in Section 2) provision shall be made so that the holders of the Preferred Stock shall thereafter be entitled to receive upon conversion of the Preferred Stock the number of shares of stock or other securities or property of this corporation or otherwise, to which a holder of Series 2 Common Stock deliverable upon conversion would have been entitled on such recapitalization. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 4 with respect to the rights of the holders of the Preferred Stock after the recapitalization to the end that the provisions of this Section 4 (including adjustment of the Conversion Price then in effect and the number of shares purchasable upon conversion of the Preferred Stock) shall be applicable after that event as nearly equivalently as may be practicable.

(g) In the event of Financing Acquisition Transaction, pursuant to which this corporation's stockholders are to receive securities of another corporation (the "Issuing Corporation") and the Effective Consideration Per Share is less than the Conversion Price applicable to a series of Preferred Stock in effect immediately prior to the consummation of the Financing Acquisition Transaction (the "Closing"), the Conversion Price for such series in effect immediately prior to the Closing shall be adjusted in a manner consistent with subsection (4)(d)(i)(A); provided that (i) the number of shares of "Additional Stock" issued shall be deemed to be equal to the number of the Issuing Corporation's Merger Shares, (ii) the aggregate consideration per share received by this corporation shall be deemed to be equal to the Effective Consideration Per Share and (iii) the number of shares of "Common Stock Outstanding" shall be deemed to be equal to the number of Consideration Merger Shares, with appropriate corresponding adjustments to the Original Issue Price and Conversion Price of the applicable series of Preferred Stock (including, without limitation, for purposes of determining (x) if the Effective Consideration Per Share is less than the Conversion Price of the applicable series of Preferred Stock and (y) the resulting Conversion Rate of the applicable series of Preferred Stock). For purposes of this subsection 4(g):

(i) "Combined Entity" shall mean the corporation issuing shares to the former stakeholders (including, without limitation, stockholders and other equityholders) of this corporation pursuant to the Financing Acquisition Transaction.

(ii) "Consideration Merger Shares" shall mean all Outstanding Stock of the Combined Entity to be issued to all former stakeholders (including, without limitation, stockholders and other equityholders) of this corporation, as of immediately prior to the Closing, upon the Closing as a result of their holdings in this corporation immediately prior to the Closing.

(iii) "Effective Consideration Per Share" shall mean the fair market value of all Outstanding Stock of the Issuing Corporation (calculated immediately prior to the Financing Acquisition Transaction), which shall be determined in a manner consistent with subsection 2(e)(ii), divided by the number of Issuing Corporation's Merger Shares.

(iv) "Financing Acquisition Transaction" means a bona fide business acquisition of or by this corporation, whether by merger, consolidation, sale of assets, sale or exchange of stock or otherwise, which does not constitute a Liquidation Event and is entered into primarily for the purpose of financing this corporation, which financing purposes include without limitation, providing this corporation with access to the Issuing Corporation's cash or financing opportunities.

(v) "Issuing Corporation's Merger Shares" shall mean all Outstanding Stock of the Combined Entity to be held by all former stakeholders (including, without limitation, stockholders and other equityholders) of the Issuing Corporation, as of immediately prior to the Closing, upon the Closing as a result of their holdings in the Issuing Corporation immediately prior to the Closing.

(vi) "Outstanding Stock" shall mean and include the following: (1) outstanding common stock, (2) common stock issuable upon conversion of outstanding preferred stock, (3) common stock issuable upon exercise of outstanding stock options and other rights to purchase shares of capital stock and (4) common stock issuable upon exercise (and, in the case of warrants to purchase preferred stock, conversion) of outstanding warrants. Shares described in (1) through (4) above shall be included whether vested or unvested, whether contingent or non-contingent and whether exercisable or not yet exercisable.

(h) No Fractional Shares and Certificate as to Adjustments.

(i) No fractional shares shall be issued upon the conversion of any share or shares of the Preferred Stock and the aggregate number of shares of Series 2 Common Stock to be issued to particular stockholders, shall be rounded down to the nearest whole share and the corporation shall pay in cash the fair market value of any fractional shares as of the time when entitlement to receive such fractions is determined. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of Preferred Stock the holder is at the time converting into Series 2 Common Stock and the number of shares of Series 2 Common Stock issuable upon such conversion.

(ii) Upon the occurrence of each adjustment or readjustment of the Conversion Price of Preferred Stock pursuant to this Section 4, this corporation, at its expense, shall promptly compute such adjustment or readjustment in accordance with the terms hereof and prepare and furnish to each holder of Preferred Stock a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. This corporation shall, upon the written request at any time of any holder of Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (A) such adjustment and readjustment, (B) the Conversion Price for such series of Preferred Stock at the time in effect, and (C) the number of shares of Series 2 Common Stock and the amount, if any, of other property that at the time would be received upon the conversion of a share of Preferred Stock.

(i) Notices of Record Date. In the event of any taking by this corporation of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend (other than a cash dividend) or other distribution, this corporation shall mail to each holder of Preferred Stock, at least twenty (20) days prior to the date specified therein, a notice specifying the date on which any such record is to be taken for the purpose of such dividend or distribution, and the amount and character of such dividend or distribution.

(j) Reservation of Stock Issuable Upon Conversion. This corporation shall at all times reserve and keep available out of its authorized but unissued shares of Series 2 Common Stock, solely for the purpose of effecting the conversion of the shares of the Preferred Stock, such number of its shares of Series 2 Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of the Preferred Stock; and if at any time the number of authorized but unissued shares of Series 2 Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Preferred Stock, in addition to such other remedies as shall be available to the holder of such Preferred Stock, this corporation will take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Series 2 Common Stock to such number of shares as shall be sufficient for such purposes, including, without limitation, engaging in best efforts to obtain the requisite stockholder approval of any necessary amendment to this Certificate of Incorporation.

(k) Notices. Any notice required by the provisions of this Section 4 to be given to the holders of shares of Preferred Stock shall be deemed given four (4) business days after being deposited in the United States mail, postage prepaid, and addressed to each holder of record at his address appearing on the books of this corporation.

(l) Waiver of Adjustment to Conversion Price. Notwithstanding anything herein to the contrary, any downward adjustment of the Conversion Price of any series of Preferred Stock may be waived, either prospectively or retroactively and either generally or in a particular instance, by the written consent or vote of the holders of at least a majority of the voting power (as determined in accordance with subsection (5)(a) below) of the then outstanding shares of Preferred Stock (voting together as a single class and on an as-converted basis); provided, that, such waiver applies to all series of Preferred Stock. Any such waiver shall bind all future holders of shares of such series of Preferred Stock.

5. Voting Rights.

(a) General Voting Rights. The holder of (i) each share of Series 1 Preferred Stock, Series 2 Preferred Stock and Series 3 Preferred Stock shall have the right to 0.352941 votes for each share of Series 2 Common Stock into which such Preferred Stock could then be converted and (ii) each share of Series 4 Preferred Stock, Series 5 Preferred Stock, Series 6 Preferred Stock and Series 7 Preferred Stock, shall have the right to one vote for each share of Series 2 Common Stock into which such Preferred Stock could then be converted, and with respect to such votes, such holder shall have full voting rights and powers equal to the voting rights and powers of the holders of Common Stock, and shall be entitled, notwithstanding any provision hereof, to notice of any stockholders' meeting in accordance with the Bylaws of

this corporation, shall be entitled to vote, together with holders of Common Stock (except as otherwise provided below), with respect to any question upon which holders of Common Stock have the right to vote. Fractional votes shall not, however, be permitted and any fractional voting rights available on an as-converted basis (after aggregating all shares into which shares of Preferred Stock held by each holder could be converted) shall be rounded to the nearest whole number (with one-half being rounded upward).

(b) Voting for the Election of Directors. As long as any shares of Series 2 Common Stock remain outstanding, the holders of outstanding Series 2 Common Stock shall be entitled to elect two (2) directors of this corporation at any election of directors. As long as any shares of Series 4 Preferred Stock remain outstanding, the holders of outstanding Series 4 Preferred Stock shall be entitled to elect one (1) director of this corporation at any election of directors (the "Series 4 Director"). As long as any shares of Series 5 Preferred Stock remain outstanding, the holders of outstanding Series 5 Preferred Stock shall be entitled to elect one (1) director of this corporation at any election of directors (the "Series 5 Director"). As long as any shares of Series 6 Preferred Stock remain outstanding, the holders of outstanding Series 6 Preferred Stock shall be entitled to elect one (1) director of this corporation at any election of directors (the "Series 6 Director"). As long as any shares of Series 7 Preferred Stock remain outstanding, the holders of outstanding Series 7 Preferred Stock shall be entitled to elect one (1) director of this corporation at any election of directors (the "Series 7 Director"). The holders of Preferred Stock and Series 2 Common Stock (voting together as a single class and not as separate series, and on an as-converted basis, with voting power determined in accordance with subsection (5)(a) below) shall be entitled to elect any remaining directors of this corporation. Each committee of the this corporation's Board of Directors shall include the directors elected by the holders of Series 4 Preferred Stock, Series 5 Preferred Stock, Series 6 Preferred Stock and Series 7 Preferred Stock.

Notwithstanding the provisions of Section 223(a)(1) and 223(a)(2) of the General Corporation Law, any vacancy, including newly created directorships resulting from any increase in the authorized number of directors or amendment of this Certificate of Incorporation, and vacancies created by removal or resignation of a director, may be filled by a majority of the directors then in office, though less than a quorum, or by a sole remaining director, and the directors so chosen shall hold office until the next annual election and until their successors are duly elected and shall qualify, unless sooner displaced; provided, however, that where such vacancy occurs among the directors elected by the holders of a class or series of stock, the holders of shares of such class or series may override the Board's action to fill such vacancy by (i) voting for their own designee to fill such vacancy at a meeting of this corporation's stockholders or (ii) written consent, if the consenting stockholders hold a sufficient number of shares to elect their designee at a meeting of the stockholders. Any director may be removed during his or her term of office, either with or without cause, by, and only by, the affirmative vote of the holders of the shares of the class or series of stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders, and any vacancy thereby created may be filled by the holders of that class or series of stock represented at the meeting or pursuant to written consent.

6. Protective Provisions.

(a) So long as 5,000,000 shares of Preferred Stock remain outstanding, this corporation shall not (by amendment, merger, consolidation or otherwise) without first obtaining the approval (by vote or written consent, as provided by law) of the holders of at least a majority of the voting power (as determined in accordance with subsection (5)(a)) of all then outstanding shares of Series 1 Preferred Stock, Series 2 Preferred Stock, Series 3 Preferred Stock, Series 4 Preferred Stock, Series 5 Preferred Stock, Series 6 Preferred Stock and Series 7 Preferred Stock (voting together as a single class and not as separate series, and on an as-converted basis):

(i) amend, restate, alter or repeal any provision of this corporation's Restated Certificate of Incorporation or bylaws, whether by merger, consolidation or otherwise;

(ii) increase or decrease the total number of authorized shares of Preferred Stock;

(iii) create or authorize the creation (by reclassification, merger or otherwise) of or issue any other security convertible into or exercisable for any equity security, having rights, preferences or privileges senior to or pari passu with any series of Preferred Stock, other than the issuance of any authorized but unissued shares of Series 7 Preferred Stock designated in this Restated Certificate of Incorporation (including any security convertible into or exercisable for such shares of Preferred Stock);

(iv) purchase or redeem or pay any dividend on any capital stock other than stock repurchased from former service providers of this corporation in connection with the cessation of their services;

(v) liquidate, dissolve, or wind-up the affairs of this corporation, or effect any Liquidation Event;

(vi) increase or decrease the authorized number of directors of this corporation;

(vii) exclusively license or transfer all or any portion of the intellectual property rights of this corporation; or

(viii) acquire substantially all of the assets of, or a controlling interest in the voting securities of, another entity, whether by merger, consolidation or otherwise.

(b) So long as any shares of Series 4 Preferred Stock remain outstanding, this corporation shall not (by amendment, merger, consolidation or otherwise) adversely alter or change the rights, preferences or privileges of the Series 4 Preferred Stock in a manner that is adverse and different in effect with respect to the Series 4 Preferred Stock as compared to any other series of Preferred Stock without first obtaining the approval (by vote or written consent, as provided by law) of the holders of a majority of the outstanding shares of Series 4 Preferred Stock (voting as a separate class).

(c) So long as any shares of Series 5 Preferred Stock remain outstanding, this corporation shall not (by amendment, merger, consolidation or otherwise) adversely alter or change the rights, preferences or privileges of the Series 5 Preferred Stock in a manner that is adverse and different in effect with respect to the Series 5 Preferred Stock as compared to any other series of Preferred Stock without first obtaining the approval (by vote or written consent, as provided by law) of the holders of a majority of the outstanding shares of Series 5 Preferred Stock (voting as a separate class).

(d) So long as any shares of Series 6 Preferred Stock remain outstanding, this corporation shall not (by amendment, merger, consolidation or otherwise) adversely alter or change the rights, preferences or privileges of the Series 6 Preferred Stock in a manner that is adverse and different in effect with respect to the Series 6 Preferred Stock as compared to any other series of Preferred Stock without first obtaining the approval (by vote or written consent, as provided by law) of the holders of a majority of the outstanding shares of Series 6 Preferred Stock (voting as a separate class).

(e) So long as any shares of Series 7 Preferred Stock remain outstanding, this corporation shall not (by amendment, merger, consolidation or otherwise) adversely alter or change the rights, preferences or privileges of the Series 7 Preferred Stock in a manner that is adverse and different in effect with respect to the Series 7 Preferred Stock as compared to any other series of Preferred Stock without first obtaining the approval (by vote or written consent, as provided by law) of the holders of at least fifty five percent (55%) of the outstanding shares of Series 7 Preferred Stock (voting as a separate class).

7. Status of Converted Stock. In the event any shares of Preferred Stock shall be converted pursuant to Section 4 hereof, the shares so converted shall be cancelled and shall not be issuable by this corporation. The Certificate of Incorporation of this corporation shall be appropriately amended to effect the corresponding reduction in this corporation's authorized capital stock.

C. Common Stock. The rights, preferences, privileges and restrictions granted to and imposed on the Common Stock are as set forth below in this Article IV(C).

1. Dividend Rights. Subject to the prior rights of holders of all classes of stock at the time outstanding having prior rights as to dividends, the holders of the Common Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of any assets of this corporation legally available therefor, any dividends as may be declared from time to time by the Board of Directors.

2. Liquidation Rights. Upon the liquidation, dissolution or winding up of this corporation, the assets of this corporation shall be distributed as provided in Section 2 of Article IV(B) hereof.

3. Redemption. The Common Stock is not redeemable at the option of the holder.

4. Voting Rights.

(a) Series 1 Common Stock. Shares of Series 1 Common Stock shall have no voting rights, except as otherwise required by law.

(b) Series 2 Common Stock. The holder of each share of Series 2 Common Stock shall have the right to one vote for each such share, and shall be entitled to notice of any stockholders' meeting in accordance with the Bylaws of this corporation, and shall be entitled to vote upon such matters and in such manner as may be provided by law.

Notwithstanding the foregoing, the number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of this corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

ARTICLE V

Except as otherwise provided in this Certificate of Incorporation, in furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, repeal, alter, amend and rescind any or all of the Bylaws of this corporation.

ARTICLE VI

A. The number of directors of this corporation shall be determined in the manner set forth in the Bylaws of this corporation.

ARTICLE VII

Elections of directors need not be by written ballot unless the Bylaws of this corporation shall so provide.

ARTICLE VIII

Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws of this corporation may provide. The books of this corporation may be kept (subject to any provision contained in the statutes) outside the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of this corporation.

ARTICLE IX

A director of this corporation shall not be personally liable to this corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to this corporation or its stockholders, (ii) for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the General Corporation Law, or (iv) for any transaction from which the director derived any improper personal benefit. If the General Corporation Law is amended after approval by the stockholders of this Article IX to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of this corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law as so amended.

Any repeal or modification of the foregoing provisions of this Article IX by the stockholders of this corporation shall not adversely affect any right or protection of a director of this corporation existing at the time of, or increase the liability of any director of this corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

ARTICLE X

This corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner provided herein and as now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.

ARTICLE XI

This corporation shall indemnify and hold harmless, to the fullest extent permitted by applicable law as it presently exists or may hereafter be amended, any person (an "Indemnified Person") who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a "Proceeding"), by reason of the fact that such person, or a person for whom such person is the legal representative, is or was a director or officer of the corporation or, while a director or officer of the corporation, is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, limited liability company, trust, enterprise or nonprofit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses (including attorneys' fees) reasonably incurred by such Indemnified Person in such Proceeding, subject only to limits created by applicable General Corporation Law (statutory or non-statutory), with respect to actions for breach of duty to this corporation, its stockholders, and others.

The corporation shall pay the expenses (including attorneys' fees) incurred by an Indemnified Person in defending any Proceeding in advance of its final disposition, provided, however, that, to the extent required by law, such payment of expenses in advance of the final disposition of the Proceeding shall be made only upon receipt of an undertaking by the Indemnified Person to repay all amounts advanced if it should be ultimately determined that the Indemnified Person is not entitled to be indemnified under this Article XI or otherwise.

Any amendment, repeal or modification of the foregoing provisions of this Article XI shall not adversely affect any right or protection of a director, officer, agent, or other person existing at the time of, or increase the liability of any director of this corporation with respect to any acts or omissions of such director, officer or agent occurring prior to, such amendment, repeal or modification.

ARTICLE XII

This corporation renounces any interest or expectancy of this corporation in, or in being offered an opportunity to participate in, an Excluded Opportunity. An "Excluded Opportunity" is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of, (i) any director of this corporation who is not an employee of this corporation or any of its subsidiaries, or (ii) any holder of Preferred Stock or any partner, member, director, stockholder, employee or agent of any such holder, other than someone who is an employee of this corporation or any of its subsidiaries (collectively, "Covered Persons"), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person's capacity as a director of this corporation.

ARTICLE XIII

In connection with repurchases by this corporation of its Common Stock from employees, officers, directors, advisors, consultants or other persons performing services for this corporation or any subsidiary pursuant to agreements under which the corporation has the option to repurchase such shares at cost upon the occurrence of certain events, such as the termination of employment, Sections 502 and 503 of the California Corporations Code shall not apply in all or in part with respect to such repurchases.

ARTICLE XIV

A. Forum Selection. Unless this corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, the federal district court for the District of Delaware) shall, to the fullest extent permitted by law, be the sole and exclusive forum for (1) any derivative action or proceeding brought on behalf of this corporation, (2) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of this corporation to this corporation or this corporation's stockholders, (3) any action arising pursuant to any provision of the General Corporation Law or this Restated Certificate of Incorporation or the Bylaws (as either may be amended from time to time), or (4) any action asserting a claim governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring or holding any interest in shares of capital stock of this corporation shall be deemed to have notice of and consented to the provisions of this Article XIII.

B. Personal Jurisdiction. If any action the subject matter of which is within the scope of Section A immediately above is filed in a court other than a court located within the State of Delaware (a "Foreign Action") in the name of any stockholder, such stockholder shall be deemed to have consented to (i) the personal jurisdiction of the state and federal courts located within the State of Delaware in connection with any action brought in any such court to enforce Section A immediately above (an "FSC Enforcement Action") and (ii) having service of process made upon such stockholder in any such FSC Enforcement Action by service upon such stockholder's counsel in the Foreign Action as agent for such stockholder.

* * *

THIRD: The foregoing amendment and restatement was approved by the holders of the requisite number of shares of said corporation in accordance with Section 228 of the General Corporation Law.

FOURTH: That said Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of this corporation's Restated Certificate of Incorporation, has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation has been executed by a duly authorized officer of this corporation on this 1st day of June, 2016.

/s/ Jeffrey Dunn

Jeffrey Dunn, President

CERTIFICATE OF AMENDMENT
TO CERTIFICATE OF INCORPORATION
OF SI-BONE, INC.

The undersigned Jeffrey Dunn hereby certifies that:

ONE: He is the duly elected and acting President of SI-BONE, Inc., a Delaware corporation.

TWO: The Certificate of Incorporation of this corporation was originally filed with the Secretary of State of Delaware on March 18, 2008 under the name SI-BONE, Inc..

THREE: Pursuant to Section 242 of the General Corporation Law of the State of Delaware (the "***DGCL***"), this Certificate of Amendment of Certificate of Incorporation amends this corporation's Certificate of Incorporation as follows:

(i) Article IV.A. of this corporation's Certificate of Incorporation is amended to read in its entirety as follows:

"Authorization of Stock. This corporation is authorized to issue two classes of stock to be designated, respectively, common stock and preferred stock. The total number of shares that this corporation is authorized to issue is Five Hundred Sixty Five Million Eight Hundred Eighty Five Thousand Five Hundred Twenty (565,885,520). The total number of shares of common stock authorized to be issued is Three Hundred Forty Eight Million (348,000,000), par value $0.0001 per share (the "Common Stock"), of which One Hundred Eight Million (108,000,000) shares are designated as "Series 1 Common Stock" and Two Hundred Forty Million (240,000,000) shares are designated as "Series 2 Common Stock". The total number of shares of preferred stock authorized to be issued is Two Hundred Seventeen Million Eight Hundred Eighty Five Thousand Five Hundred Twenty (217,885,520), par value $0.0001 per share (the "Preferred Stock"), of which Four Million Four Hundred Eleven Thousand Seven Hundred Thirty One (4,411,731) shares are designated as "Series 1 Preferred Stock," Twelve Million Seven Hundred Seventy Three Thousand One Hundred Seven (12,773,107) shares are designated as "Series 2 Preferred Stock", Eight Million Nine Hundred Eighty One Thousand Two Hundred Fifty (8,981,250) shares are designated as "Series 3 Preferred Stock", Forty Five Million One Hundred Sixty Two Thousand Eight Hundred Fifty Three (45,162,853) shares are designated as "Series 4 Preferred Stock", Thirty Seven Million Five Hundred Fifty Thousand Four Hundred Eighty Four (37,550,484) shares are designated as "Series 5 Preferred Stock", Sixty One Million Six Thousand Ninety Five (61,006,095) are designated as "Series 6 Preferred Stock" and Forty Eight Million (48,000,000) are designated as "Series 7 Preferred Stock"."

(ii) The last sentence of Subsection 4(a) of Article IV, Part B of this corporation's Certificate of Incorporation is amended to read in its entirety as follows:

"The initial Conversion Price per share for the Series 6 Preferred Stock shall be $0.8643, and the Initial Conversion Price per share for the Series 1 Preferred Stock, Series 2 Preferred Stock, Series 3 Preferred Stock, Series 4 Preferred Stock, Series 5 Preferred Stock and Series 7 Preferred Stock shall be the Original Issue Price applicable to such series; provided, however, that the Conversion Price for the Preferred Stock shall be subject to adjustment as set forth in subsection 4(d)."

The foregoing amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

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The undersigned has executed this certificate on February 17th, 2017.

/s/ Jeffrey Dunn

Jeffrey Dunn
President

Exhibit 3.3

SECOND AMENDED AND RESTATED BYLAWS OF

SI-BONE, INC.

(A DELAWARE CORPORATION)

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SECOND AMENDED AND RESTATED BYLAWS
OF
SI-BONE, INC.

ARTICLE I
OFFICES

1.1 **Registered Office.** The registered office shall be in the City of Dover, County of Kent, State of Delaware.

1.2 **Offices.** SI-BONE, Inc. (the "Company") may also have offices at such other places both within and without the State of Delaware as the Board of Directors may from time to time determine or the business of the corporation may require.

ARTICLE II
MEETINGS OF STOCKHOLDERS

2.1 **Location.** All meetings of the stockholders for the election of directors shall be held in the City of Dover, State of Delaware, at such place as may be fixed from time to time by the Board of Directors, or at such other place either within or without the State of Delaware as shall be designated from time to time by the Board of Directors and stated in the notice of the meeting; provided, however, that the Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as authorized by Section 211 of the Delaware General Corporations Law ("DGCL"). Meetings of stockholders for any other purpose may be held at such time and place, if any, within or without the State of Delaware, as shall be stated in the notice of the meeting or in a duly executed waiver of notice thereof, or a waiver by electronic transmission by the person entitled to notice.

2.2 **Timing.** Annual meetings of stockholders, commencing with the year 2008, shall be held at such date and time as shall be designated from time to time by the Board of Directors and stated in the notice of the meeting, at which they shall elect by a plurality vote a Board of Directors, and transact such other business as may properly be brought before the meeting.

2.3 **Notice of Meeting.** Written notice of any stockholder meeting stating the place, if any, date and hour of the meeting, the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting, shall be given to each stockholder entitled to vote at such meeting not fewer than ten (10) nor more than sixty (60) days before the date of the meeting.

2.4 **Stockholders' Records.** The officer who has charge of the stock ledger of the corporation shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address (but not the electronic address or other electronic contact information) of each stockholder and the number of shares registered in the name of each

stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting for a period of at least 10 days prior to the meeting: (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the principal place of business of the corporation. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. If the meeting is to be held at a place, then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting.

2.5 **Special Meetings.** Special meetings of the stockholders, for any purpose or purposes, unless otherwise prescribed by statute or by the certificate of incorporation, may be called by the president and shall be called by the president or secretary at the request in writing of a majority of the Board of Directors, or at the request in writing of stockholders owning at least fifty percent (50%) in amount of the entire capital stock of the corporation issued and outstanding and entitled to vote. Such request shall state the purpose or purposes of the proposed meeting.

2.6 **Notice of Meeting.** Written notice of a special meeting stating the place, date and hour of the meeting and the purpose or purposes for which the meeting is called, shall be given not fewer than ten (10) nor more than sixty (60) days before the date of the meeting, to each stockholder entitled to vote at such meeting. The means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting shall also be provided in the notice.

2.7 **Business Transacted at Special Meeting.** Business transacted at any special meeting of stockholders shall be limited to the purposes stated in the notice.

2.8 **Quorum; Meeting Adjournment; Presence by Remote Means.**

(a) *Quorum; Meeting Adjournment*. The holders of a majority of the stock issued and outstanding and entitled to vote thereat, present in person or represented by proxy, shall constitute a quorum at all meetings of the stockholders for the transaction of business except as otherwise provided by statute or by the certificate of incorporation. If, however, such quorum shall not be present or represented at any meeting of the stockholders, the stockholders entitled to vote thereat, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present or represented. At such adjourned meeting at which a quorum shall be present or represented, any business may be transacted that might have been transacted at the meeting as originally notified. If the adjournment is for more than thirty (30) days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

(b) *Presence by Remote Means*. If authorized by the Board of Directors in its sole discretion, and subject to such guidelines and procedures as the Board of Directors may adopt, stockholders and proxyholders not physically present at a meeting of stockholders may, by means of remote communication:

(1) participate in a meeting of stockholders; and

(2) be deemed present in person and vote at a meeting of stockholders whether such meeting is to be held at a designated place or solely by means of remote communication, provided that (i) the corporation shall implement reasonable measures to verify that each person deemed present and permitted to vote at the meeting by means of remote communication is a stockholder or proxyholder, (ii) the corporation shall implement reasonable measures to provide such stockholders and proxyholders a reasonable opportunity to participate in the meeting and to vote on matters submitted to the stockholders, including an opportunity to read or hear the proceedings of the meeting substantially concurrently with such proceedings, and (iii) if any stockholder or proxyholder votes or takes other action at the meeting by means of remote communication, a record of such vote or other action shall be maintained by the corporation.

2.9 **Voting Thresholds.** When a quorum is present at any meeting, the vote of the holders of a majority of the stock having voting power present in person or represented by proxy shall decide any question brought before such meeting, unless the question is one upon which by express provision of the statutes or of the certificate of incorporation, a different vote is required, in which case such express provision shall govern and control the decision of such question.

2.10 **Number of Votes Per Share.** Unless otherwise provided in the certificate of incorporation, each stockholder shall at every meeting of the stockholders be entitled to one vote by such stockholder or by proxy for each share of the capital stock having voting power held by such stockholder, but no proxy shall be voted on after three years from its date, unless the proxy provides for a longer period.

2.11 **Action by Written Consent of Stockholders; Electronic Consent; Notice of Action.**

(a) *Action by Written Consent of Stockholders.* Unless otherwise provided by the certificate of incorporation, any action required or permitted to be taken at any annual or special meeting of the stockholders may be taken without a meeting, without prior notice and without a vote, if a consent in writing setting forth the action so taken, is signed in a manner permitted by law by the holders of outstanding stock having not less than the number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted. Written stockholder consents shall bear the date of signature of each stockholder who signs the consent in the manner permitted by law and shall be delivered to the corporation as provided in subsection (b) below. No written consent shall be effective to take the action set forth therein unless, within sixty (60) days of the earliest dated consent delivered to the corporation in the manner provided above, written consents signed by a sufficient number of stockholders to take the action set forth therein are delivered to the corporation in the manner provided above.

(b) *Electronic Consent*. A telegram, cablegram or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, or a person or persons authorized to act for a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this section, provided that any such telegram, cablegram or other electronic transmission sets forth or is delivered with information from which the corporation can determine (1) that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder or proxyholder and (2) the date on which such stockholder or proxyholder or authorized person or persons transmitted such telegram, cablegram or electronic transmission. The date on which such telegram, cablegram or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by telegram, cablegram or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form is delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation's registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by telegram, cablegram or other electronic transmission may be otherwise delivered to the principal place of business of the corporation or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the Board of Directors of the corporation.

(c) *Notice of Action*. Prompt notice of any action taken pursuant to this Section 2.11 shall be provided to the stockholders in accordance with Section 228(e) of the DGCL.

ARTICLE III
DIRECTORS

3.1 **Authorized Directors.** The number of directors that shall constitute the whole Board of Directors shall be determined by resolution of the Board of Directors or by the stockholders at the annual meeting of the stockholders, except as provided in Section 3.2 of this Article, and each director elected shall hold office until his successor is elected and qualified. Directors need not be stockholders.

3.2 **Vacancies.** Unless otherwise provided in the corporation's certificate of incorporation, as it may be amended, vacancies and newly created directorships resulting from any increase in the authorized number of directors may be filled by a majority of the directors then in office, though less than a quorum, or by a sole remaining director, and the directors so chosen shall hold office until the next annual election and until their successors are duly elected and shall qualify, unless sooner displaced. If there are no directors in office, then an election of directors may be held in the manner provided by statute. If, at the time of filling any vacancy or any newly created directorship, the directors then in office shall constitute less than a majority of

the whole Board of Directors (as constituted immediately prior to any such increase), the Court of Chancery may, upon application of any stockholder or stockholders holding at least ten percent (10%) of the total number of the shares at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office.

3.3 **Board Authority.** The business of the corporation shall be managed by or under the direction of its Board of Directors, which may exercise all such powers of the corporation and do all such lawful acts and things as are not by statute or by the certificate of incorporation or by these bylaws directed or required to be exercised or done by the stockholders.

3.4 **Location of Meetings.** The Board of Directors of the corporation may hold meetings, both regular and special, either within or without the State of Delaware.

3.5 **First Meeting.** The first meeting of each newly elected Board of Directors shall be held at such time and place as shall be fixed by the vote of the stockholders at the annual meeting and no notice of such meeting shall be necessary to the newly elected directors in order to legally constitute the meeting, provided a quorum shall be present. In the event of the failure of the stockholders to fix the time or place of such first meeting of the newly elected Board of Directors, or in the event such meeting is not held at the time and place so fixed by the stockholders, the meeting may be held at such time and place as shall be specified in a notice given as hereinafter provided for special meetings of the Board of Directors, or as shall be specified in a written waiver signed by all of the directors.

3.6 **Regular Meetings.** Regular meetings of the Board of Directors may be held without notice at such time and at such place as shall from time to time be determined by the Board of Directors.

3.7 **Special Meetings.** Special meetings of the Board of Directors may be called by the president upon notice to each director; special meetings shall be called by the president or secretary in like manner and on like notice on the written request of two (2) directors unless the Board of Directors consists of only one director, in which case special meetings shall be called by the president or secretary in like manner and on like notice on the written request of the sole director. Notice of any special meeting shall be given to each director at his business or residence in writing, or by telegram, facsimile transmission, telephone communication or electronic transmission (provided, with respect to electronic transmission, that the director has consented to receive the form of transmission at the address to which it is directed). If mailed, such notice shall be deemed adequately delivered when deposited in the United States mails so addressed, with postage thereon prepaid, at least five (5) days before such meeting. If by telegram, such notice shall be deemed adequately delivered when the telegram is delivered to the telegraph company at least twenty-four (24) hours before such meeting. If by facsimile transmission or other electronic transmission, such notice shall be transmitted at least twenty-four (24) hours before such meeting and shall only be deemed to be adequately delivered to the recipient upon the Company’s receipt of a confirmation sent via electronic mail or other electronic transmission or twenty-four (24) hours after a copy of such notice is sent via overnight courier. If by telephone, the notice shall be given at least twelve (12) hours prior to the time set

for the meeting. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the Board of Directors need be specified in the notice of such meeting, except for amendments to these Bylaws as provided under Section 8.1 of Article VIII hereof. A meeting may be held at any time without notice if all the directors are present (except as otherwise provided by law) or if those not present waive notice of the meeting in writing, either before or after such meeting.

3.8 **Quorum.** At all meetings of the Board of Directors a majority of the directors shall constitute a quorum for the transaction of business and any act of a majority of the directors present at any meeting at which there is a quorum shall be an act of the Board of Directors, except as may be otherwise specifically provided by statute or by the certificate of incorporation. If a quorum is not present at any meeting of the Board of Directors, the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present.

3.9 **Action Without a Meeting.** Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting if all members of the Board of Directors or committee, as the case may be, consent thereto in writing or by electronic transmission, and the writing, writings, electronic transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee.

3.10 **Telephonic Meetings.** Unless otherwise restricted by the certificate of incorporation or these bylaws, members of the Board of Directors or any committee designated by the Board of Directors may participate in a meeting of the Board of Directors or any committee, by means of conference telephone or other means of communication by which all persons participating in the meeting can hear each other, and such participation shall constitute presence in person at the meeting.

3.11 **Committees.** Subject to the Company's Certificate of Incorporation then in effect, he Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee.

In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or she or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

Any such committee, to the extent provided in the resolution of the Board of Directors, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it, but no such committee shall have the power or authority in reference to the following matters: (i) approving or adopting, or recommending to the stockholders, any action or matter expressly required by the DGCL to be submitted to stockholders for approval or (ii) adopting, amending or repealing any provision of these bylaws.

3.12 **Minutes of Meetings.** Each committee shall keep regular minutes of its meetings and report the same to the Board of Directors when required.

3.13 **Compensation of Directors.** Unless otherwise restricted by the certificate of incorporation or these bylaws, the Board of Directors shall have the authority to fix the compensation of directors. The directors may be paid their expenses, if any, of attendance at each meeting of the Board of Directors and may be paid a fixed sum for attendance at each meeting of the Board of Directors or a stated salary as director. No such payment shall preclude any director from serving the corporation in any other capacity and receiving compensation therefor. Members of special or standing committees may be allowed like compensation for attending committee meetings.

3.14 **Removal of Directors.** Unless otherwise provided by the certificate of incorporation or these bylaws, any director or the entire Board of Directors may be removed, with or without cause, by the holders of a majority of shares entitled to vote at an election of directors.

ARTICLE IV
NOTICES

4.1 **Notice.** Unless otherwise provided in these bylaws, whenever, under the provisions of the statutes or of the certificate of incorporation or of these bylaws, notice is required to be given to any director or stockholder, it shall not be construed to mean personal notice, but such notice may be given in writing, by mail, addressed to such director or stockholder, at his address as it appears on the records of the corporation, with postage thereon prepaid, and such notice shall be deemed to be given at the time when the same shall be deposited in the United States mail. Notice to directors may also be given by telegram, facsimile transmission, or electronic transmission (provided, with respect to electronic transmission, that the director has consented to receive the form of transmission at the address to which it is directed).

4.2 **Waiver of Notice.** Whenever any notice is required to be given under the provisions of the statutes or of the certificate of incorporation or of these bylaws, a waiver thereof in writing, signed by the person or persons entitled to said notice, whether before or after the time stated therein, shall be deemed equivalent thereto.

4.3 **Electronic Notice.**

(a) *Electronic Transmission*. Without limiting the manner by which notice otherwise may be given effectively to stockholders and directors, any notice to stockholders or directors given by the corporation under any provision of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder or director to whom the notice is given. Any such consent shall be revocable by the stockholder or director by written notice to the corporation. Any such consent shall be deemed revoked if (1) the corporation is unable to deliver by

electronic transmission two consecutive notices given by the corporation in accordance with such consent and (2) such inability becomes known to the secretary or an assistant secretary of the corporation or to the transfer agent, or other person responsible for the giving of notice; provided, however, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action.

(b) *Effective Date of Notice*. Notice given pursuant to subsection (a) of this section shall be deemed given: (1) if by facsimile telecommunication, when directed to a number at which the stockholder or director has consented to receive notice and upon the Company's receipt of a confirmation sent via electronic mail or other electronic transmission or twenty-four (24) hours after a copy of such notice is sent via overnight courier; (2) if by electronic mail, when directed to an electronic mail address at which the stockholder or director has consented to receive notice and upon the Company's receipt of a confirmation sent via electronic mail or other electronic transmission or twenty-four (24) hours after a copy of such notice is sent via overnight courier; (3) if by a posting on an electronic network together with separate notice to the stockholder or director of such specific posting, upon the later of (i) such posting and (ii) the giving of such separate notice; and (4) if by any other form of electronic transmission, when directed to the stockholder or director shall only be deemed to be adequately delivered to the recipient upon the Company's receipt of a confirmation sent via electronic mail or other electronic transmission or twenty-four (24) hours after a copy of such notice is sent via overnight courier. An affidavit of the secretary or an assistant secretary or of the transfer agent or other agent of the corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

(c) *Form of Electronic Transmission*. For purposes of these bylaws, "electronic transmission" means any form of communication, not directly involving the physical transmission of paper, that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient through an automated process.

ARTICLE V
OFFICERS

5.1 **Required and Permitted Officers.** The officers of the corporation shall be chosen by the Board of Directors and shall be a president, treasurer and a secretary. The Board of Directors may elect from among its members a Chairman of the Board and a Vice-Chairman of the Board. The Board of Directors may also choose one or more vice-presidents, assistant secretaries and assistant treasurers. Any number of offices may be held by the same person, unless the certificate of incorporation or these bylaws otherwise provide.

5.2 **Appointment of Required Officers.** The Board of Directors at its first meeting after each annual meeting of stockholders shall choose a president, a treasurer, and a secretary and may choose vice-presidents.

5.3 **Appointment of Permitted Officers.** The Board of Directors may appoint such other officers and agents as it shall deem necessary who shall hold their offices for such terms and shall exercise such powers and perform such duties as shall be determined from time to time by the Board of Directors.

5.4 **Officer Compensation.** The salaries of all officers and agents of the corporation shall be fixed by the Board of Directors.

5.5 **Term of Office; Vacancies.** The officers of the corporation shall hold office until their successors are chosen and qualify. Any officer elected or appointed by the Board of Directors may be removed at any time by the affirmative vote of a majority of the Board of Directors. Any vacancy occurring in any office of the corporation shall be filled by the Board of Directors.

THE CHAIRMAN OF THE BOARD

5.6 **Chairman Presides.** The Chairman of the Board, if any, shall preside at all meetings of the Board of Directors and of the stockholders at which he or she shall be present. he or she shall have and may exercise such powers as are, from time to time, assigned to him by the Board of Directors and as may be provided by law.

5.7 **Absence of Chairman.** In the absence of the Chairman of the Board, the Vice-Chairman of the Board, if any, shall preside at all meetings of the Board of Directors and of the stockholders at which he or she shall be present. He or she shall have and may exercise such powers as are, from time to time, assigned to him by the Board of Directors and as may be provided by law.

THE PRESIDENT AND VICE-PRESIDENTS

5.8 **Powers of President.** The president shall be the chief executive officer of the corporation; in the absence of the Chairman and Vice-Chairman of the Board he or she shall preside at all meetings of the stockholders and the Board of Directors; he or she shall have general and active management of the business of the corporation and shall see that all orders and resolutions of the Board of Directors are carried into effect.

5.9 **President's Signature Authority.** The president shall execute bonds, mortgages and other contracts requiring a seal, under the seal of the corporation, except where required or permitted by law to be otherwise signed and executed and except where the signing and execution thereof shall be expressly delegated by the Board of Directors to some other officer or agent of the corporation.

5.10 **Absence of President.** In the absence of the president or in the event of his inability or refusal to act, the vice-president, if any, (or in the event there be more than one vice-president, the vice-presidents in the order designated by the directors, or in the absence of any designation, then in the order of their election) shall perform the duties of the president, and when so acting, shall have all the powers of and be subject to all the restrictions upon the president. The vice-presidents shall perform such other duties and have such other powers as the Board of Directors may from time to time prescribe.

THE SECRETARY AND ASSISTANT SECRETARY

5.11 **Duties of Secretary.** The secretary shall attend all meetings of the Board of Directors and all meetings of the stockholders and record all the proceedings of the meetings of the corporation and of the Board of Directors in a book to be kept for that purpose and shall perform like duties for the standing committees when required. He or she shall give, or cause to be given, notice of all meetings of the stockholders and special meetings of the Board of Directors, and shall perform such other duties as may be prescribed by the Board of Directors or president, under whose supervision he or she shall be. He or she shall have custody of the corporate seal of the corporation and he or she, or an assistant secretary, shall have authority to affix the same to any instrument requiring it and when so affixed, it may be attested by his signature or by the signature of such assistant secretary. The Board of Directors may give general authority to any other officer to affix the seal of the corporation and to attest the affixing by his signature.

5.12 **Duties of Assistant Secretary.** The assistant secretary, or if there be more than one, the assistant secretaries in the order determined by the Board of Directors (or if there be no such determination, then in the order of their election) shall, in the absence of the secretary or in the event of his inability or refusal to act, perform the duties and exercise the powers of the secretary and shall perform such other duties and have such other powers as the Board of Directors may from time to time prescribe.

THE TREASURER AND ASSISTANT TREASURERS

5.13 **Duties of Treasurer.** The treasurer shall have the custody of the corporate funds and securities and shall keep full and accurate accounts of receipts and disbursements in books belonging to the corporation and shall deposit all moneys and other valuable effects in the name and to the credit of the corporation in such depositories as may be designated by the Board of Directors.

5.14 **Disbursements and Financial Reports.** He or she shall disburse the funds of the corporation as may be ordered by the Board of Directors, taking proper vouchers for such disbursements, and shall render to the president and the Board of Directors, at its regular meetings or when the Board of Directors so requires, an account of all his transactions as treasurer and of the financial condition of the corporation.

5.15 **Treasurer's Bond.** If required by the Board of Directors, the treasurer shall give the corporation a bond (which shall be renewed every six years) in such sum and with such surety or sureties as shall be satisfactory to the Board of Directors for the faithful performance of the duties of his office and for the restoration to the corporation, in case of his death, resignation, retirement or removal from office, of all books, papers, vouchers, money and other property of whatever kind in his possession or under his control belonging to the corporation.

5.16 **Duties of Assistant Treasurer.** The assistant treasurer, or if there shall be more than one, the assistant treasurers in the order determined by the Board of Directors (or if there be no such determination, then in the order of their election) shall, in the absence of the treasurer or in the event of the treasurer's inability or refusal to act, perform the duties and exercise the powers of the treasurer and shall perform such other duties and have such other powers as the Board of Directors may from time to time prescribe.

ARTICLE VI
CERTIFICATE OF STOCK

6.1 **Stock Certificates.** Every holder of stock in the corporation shall be entitled to have a certificate, signed by or in the name of the corporation by, the Chairman or Vice-Chairman of the Board of Directors, or the president or a vice-president and the treasurer or an assistant treasurer, or the secretary or an assistant secretary of the corporation, certifying the number of shares owned by him in the corporation.

Certificates may be issued for partly paid shares and in such case upon the face or back of the certificates issued to represent any such partly paid shares, the total amount of the consideration to be paid therefor, and the amount paid thereon shall be specified.

If the corporation shall be authorized to issue more than one class of stock or more than one series of any class, the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualification, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate which the corporation shall issue to represent such class or series of stock, provided that, except as otherwise provided in Section 202 of the DGCL, in lieu of the foregoing requirements, there may be set forth on the face or back of the certificate which the corporation shall issue to represent such class or series of stock, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

6.2 **Facsimile Signatures.** Any or all of the signatures on the certificate may be facsimile. In the event that any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, the certificate may be issued by the corporation with the same effect as if such officer, transfer agent or registrar were still acting as such at the date of issue.

6.3 **Lost Certificates.** The Board of Directors may direct a new certificate or certificates to be issued in place of any certificate or certificates theretofore issued by the corporation alleged to have been lost, stolen or destroyed upon the making of an affidavit of that fact by the person claiming the certificate to be lost, stolen or destroyed. When authorizing such issuance of a new certificate or certificates, the Board of Directors may, in its discretion and as a condition precedent to the issuance, require the owner of such lost, stolen or destroyed certificate or certificates, or his legal representative, to advertise the same in such manner as it shall require and/or to give the corporation a bond in such sum as it may direct as indemnity against any claim that may be made against the corporation with respect to the certificate alleged to have been lost, stolen or destroyed.

6.4 **Transfer of Stock.** Upon surrender to the corporation or the transfer agent of the corporation of a certificate for shares duly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer, it shall be the duty of the corporation to issue a new certificate to the person entitled thereto, cancel the old certificate and record the transaction upon its books.

(a) Notwithstanding anything to the contrary, a stockholder shall not transfer, whether by sale, gift, pledge or otherwise, Restricted Shares (as such term is defined below) to any third-party transferee unless such transfer is approved by the Board of Directors prior to such transfer, which approval may be granted or withheld in the Board of Directors' sole and absolute discretion. For clarity, the Board of Directors may reject such transfer if the third-party transferee is a Healthcare Provider (as such term is defined below). "Restricted Shares" are shares of the corporation's Common Stock (including Common Stock issued or issuable upon the conversion of Preferred Stock): (1) that were issued prior to or in conjunction with the approval of these bylaws and are owned by stockholders who voted in favor of the approval of these bylaws (the date of such approval, the "Approval Date"); or (2) that were issued after the Approval Date. Any purported transfer of any Restricted Shares effected in violation of this Section 6.4 shall be null and void and shall have no force or effect and the corporation shall not register any such purported transfer; provided, however, approval by the Board of Directors shall not be required to effect (i) a transfer by beneficiary designation, will or intestate succession or (ii) a transfer for no consideration to one or more members of a stockholder's Immediate Family or to a trust established by the stockholder for the benefit of the stockholder and/or one or more members of the stockholder's Immediate Family, provided in either case that the transferee agrees in writing on a form prescribed by the corporation to be bound by all provisions of all agreements applicable to the Restricted Shares. For purposes of this Section 6.4, "Immediate Family" shall mean any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law or sister-in-law and shall include adoptive relationships. "Healthcare Provider" shall mean any person who has a National Provider Identifier (NPI) Number under the National Plan & Provider Enumeration System, including such person's Immediate Family members and affiliates.

(b) Any stockholder seeking the approval of the Board of Directors of a transfer of some or all of its shares to a third-party transferee shall give written notice (the "Transfer Notice") thereof 60 days prior to the desired transfer date to the Secretary of the corporation that shall include: (1) the name of the stockholder; (2) the proposed transfer; (3) the number of shares the transfer of which approval is thereby requested; (4) the purchase price, if any, of the shares proposed for transfer; (5) the name, address, and primary occupation or profession of the proposed transferee; (6) proof satisfactory to the corporation that the proposed sale or transfer will not violate any applicable federal, state or foreign securities laws; and (7) representations by the stockholder that (i) the proposed transferee has been made aware that the proposed transfer is non-binding until written notice is provided by the Company that the Board of Directors has approved the proposed transfer pursuant to this Section 6.4 and (ii) that the stockholder has not provided any confidential information of the Company, either orally or in writing, to the proposed transferee, unless the stockholder has obtained the prior written consent of the Company. The corporation may require the stockholder to supplement its notice with such additional information as the corporation may request. The Company shall use reasonable efforts to respond to the Transfer Notice regarding the approval or disapproval of the Board of Directors within 45 days of the receipt of the Transfer Notice; provided, however, that the Company's failure to approve or disapprove of such transfer within such 45 day period shall not constitute an approval of such transfer.

(c) Certificates representing shares of stock issued after the Approval Date shall have impressed on, printed on, written on or otherwise affixed to them the following legend:

> THE TRANSFER OF SECURITIES REPRESENTED HEREBY IS SUBJECT TO RESTRICTIONS REQUIRING APPROVAL OF THE BOARD OF DIRECTORS PURSUANT TO AND IN ACCORDANCE WITH SECTION 6.4 OF THE BYLAWS OF THE COMPANY, COPIES OF WHICH MAY BE OBTAINED UPON WRITTEN REQUEST TO THE COMPANY AT ITS PRINCIPAL PLACE OF BUSINESS. THE COMPANY SHALL NOT REGISTER OR OTHERWISE RECOGNIZE OR GIVE EFFECT TO ANY PURPORTED TRANSFER OF SHARES OF STOCK THAT DOES NOT COMPLY WITH SECTION 6.4 OF THE BYLAWS OF THE COMPANY.

This corporation shall take all such actions as are practicable to cause the certificates representing shares issued prior to the Approval Date that are subject to the restrictions on transfer set forth in this Section 6.4 to contain the foregoing legend.

(d) The foregoing transfer restrictions shall terminate upon the earliest to occur of the following:

(1) immediately prior to the closing of a Liquidation Event (as defined in the Company's certificate of incorporation, as amended from time to time); or

(2) immediately prior to the closing of a firm commitment underwritten initial public offering pursuant to an effective registration statement filed under the Securities Act of 1933, as amended, covering the offer and sale of the Company's common stock.

6.5 **Fixing a Record Date.** In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, or to express consent to corporate action in writing without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board of Directors may fix a record date which shall not be more than sixty (60) nor less than ten (10) days before the date of such meeting, nor more than sixty (60) days prior to any other action. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

6.6 **Registered Stockholders.** The corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, to vote as such owner, to hold liable for calls and assessments a person registered on its books as the owner of shares and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VII
GENERAL PROVISIONS

7.1 **Dividends.** Dividends upon the capital stock of the corporation, if any, subject to the provisions of the certificate of incorporation, may be declared by the Board of Directors at any regular or special meeting, pursuant to law. Dividends may be paid in cash, in property or in shares of the capital stock, subject to the provisions of the certificate of incorporation.

7.2 **Reserve for Dividends.** Before payment of any dividend, there may be set aside out of any funds of the corporation available for dividends such sum or sums as the directors from time to time, in their sole discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the corporation, or for such other purposes as the directors think conducive to the interests of the corporation, and the directors may modify or abolish any such reserve in the manner in which it was created.

7.3 **Checks.** All checks or demands for money and notes of the corporation shall be signed by such officer or officers or such other person or persons as the Board of Directors may from time to time designate.

7.4 **Fiscal Year.** The fiscal year of the corporation shall be fixed by resolution of the Board of Directors.

7.5 **Corporate Seal.** The Board of Directors may adopt a corporate seal having inscribed thereon the name of the corporation, the year of its organization and the words “Corporate Seal, Delaware.” The seal may be used by causing it or a facsimile thereof to be impressed or affixed or otherwise reproduced.

7.6 **Indemnification.** The corporation shall, to the fullest extent authorized under the laws of the State of Delaware, as those laws may be amended and supplemented from time to time, indemnify any director made, or threatened to be made, a party to an action or proceeding, whether criminal, civil, administrative or investigative, by reason of being a director of the corporation or a predecessor corporation or a director or officer of another corporation, if such person served in such position at the request of the corporation; provided, however, that the corporation shall indemnify any such director or officer in connection with a proceeding initiated by such director or officer only if such proceeding was authorized by the Board of Directors of the corporation. The indemnification provided for in this Section 7.6 shall: (i) not be deemed exclusive of any other rights to which those indemnified may be entitled under these bylaws, agreement or vote of stockholders or disinterested directors or otherwise, both as to action in their official capacities and as to action in another capacity while holding such office, (ii) continue as to a person who has ceased to be a director, and (iii) inure to the benefit of the heirs, executors and administrators of a person who has ceased to be a director. The corporation’s obligation to provide indemnification under this Section 7.6 shall be offset to the extent of any other source of indemnification or any otherwise applicable insurance coverage under a policy maintained by the corporation or any other person.

Expenses incurred by a director of the corporation in defending a civil or criminal action, suit or proceeding by reason of the fact that he or she is or was a director of the corporation (or was serving at the corporation's request as a director or officer of another corporation) shall be paid by the corporation in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director to repay such amount if it shall ultimately be determined that he or she is not entitled to be indemnified by the corporation as authorized by relevant sections of the DGCL. Notwithstanding the foregoing, the corporation shall not be required to advance such expenses to an agent who is a party to an action, suit or proceeding brought by the corporation and approved by a majority of the Board of Directors of the corporation that alleges willful misappropriation of corporate assets by such agent, disclosure of confidential information in violation of such agent's fiduciary or contractual obligations to the corporation or any other willful and deliberate breach in bad faith of such agent's duty to the corporation or its stockholders.

The foregoing provisions of this Section 7.6 shall be deemed to be a contract between the corporation and each director who serves in such capacity at any time while this bylaw is in effect, and any repeal or modification thereof shall not affect any rights or obligations then existing with respect to any state of facts then or theretofore existing or any action, suit or proceeding theretofore or thereafter brought based in whole or in part upon any such state of facts.

The Board of Directors in its sole discretion shall have power on behalf of the corporation to indemnify any person, other than a director, made a party to any action, suit or proceeding by reason of the fact that he or she, his testator or intestate, is or was an officer or employee of the corporation.

To assure indemnification under this Section 7.6 of all directors, officers and employees who are determined by the corporation or otherwise to be or to have been "fiduciaries" of any employee benefit plan of the corporation that may exist from time to time, Section 145 of the DGCL shall, for the purposes of this Section 7.6, be interpreted as follows: an "other enterprise" shall be deemed to include such an employee benefit plan, including without limitation, any plan of the corporation that is governed by the Act of Congress entitled "Employee Retirement Income Security Act of 1974," as amended from time to time; the corporation shall be deemed to have requested a person to serve the corporation for purposes of Section 145 of the DGCL, as administrator of an employee benefit plan where the performance by such person of his duties to the corporation also imposes duties on, or otherwise involves services by, such person to the plan or participants or beneficiaries of the plan; excise taxes assessed on a person with respect to an employee benefit plan pursuant to such Act of Congress shall be deemed "fines."

CERTIFICATE OF INCORPORATION GOVERNS

7.7 **Conflicts with Certificate of Incorporation.** In the event of any conflict between the provisions of the corporation's certificate of incorporation and these bylaws, the provisions of the certificate of incorporation shall govern.

ARTICLE VIII
AMENDMENTS

8.1 These bylaws may be altered, amended or repealed, or new bylaws may be adopted by the stockholders or by the Board of Directors, when such power is conferred upon the Board of Directors by the certificate of incorporation at any regular meeting of the stockholders or of the Board of Directors or at any special meeting of the stockholders or of the Board of Directors if notice of such alteration, amendment, repeal or adoption of new bylaws be contained in the notice of such special meeting. If the power to adopt, amend or repeal bylaws is conferred upon the Board of Directors by the certificate of incorporation, it shall not divest or limit the power of the stockholders to adopt, amend or repeal bylaws.

ARTICLE IX
RIGHT OF FIRST REFUSAL

9.1 In addition to the applicable restrictions set forth in Section 6.4 of Article VI hereof, no stockholder shall sell, assign, pledge, or in any manner transfer any of the shares of Common Stock of the corporation or any right or interest therein (excluding, however, any Preferred Stock of the corporation and any Common Stock issued upon the conversion of such Preferred Stock), whether voluntarily or by operation of law, or by gift or otherwise, except by a transfer which meets the requirements hereinafter set forth in this Article IX:

(a) *Notice of Proposed Transfer*. If the stockholder desires to sell or otherwise transfer any of his shares of Common Stock, then the stockholder shall first give written notice thereof to the corporation. The notice shall name the proposed transferee and state the number of shares to be transferred, the proposed consideration and all other terms and conditions of the proposed transfer.

(b) *Corporate Option to Purchase*. For forty-five (45) days following receipt of such notice, the corporation shall have the option to purchase all or any part of the shares specified in the notice at the price and upon the terms set forth in such notice. In the event the corporation elects to purchase all the shares, it shall give written notice to the selling stockholder of its election and settlement for said shares shall be made as provided below in paragraph (d).

(c) *Stockholder Option to Purchase*. In the event the corporation does not elect to acquire all of the shares specified in the selling stockholder's notice, the corporation may, at its discretion, within forty-five (45) days of receipt of said selling stockholder's notice, give written notice thereof to other stockholders of the corporation other than the selling stockholder. Said written notice shall state the number of shares that the corporation has elected to purchase (if any) and the number of shares remaining available for purchase (which shall be the same as the number contained in said selling stockholder's notice, less any such shares that

the corporation has elected to purchase). Each of the other stockholders shall have the option to purchase that proportion of the shares available for purchase as the number of shares owned by each of said other stockholders (calculated on an as-converted basis) bears to the total issued and outstanding shares of the corporation (calculated on an as-converted basis), excepting those shares owned by the selling stockholder. A stockholder electing to exercise such option shall, within ten (10) days after receipt of the corporation's notice, give notice to the corporation specifying the number of shares such stockholder will purchase. Within such ten (10) day period, each of said other stockholders shall give written notice stating how many additional shares such stockholder will purchase if additional shares are available. Failure to respond in writing to the notice given by the corporation within such ten (10) day period shall be deemed a waiver of such stockholder's right to acquire its proportionate part of the shares of the selling stockholder. In the event one or more stockholders do not elect to acquire the shares available to them, said shares shall be allocated on a pro rata basis to the stockholders who requested shares in addition to their pro rata allotment.

(d) *Closing of Corporate or Stockholder Purchase.* In the event the corporation and/or stockholders, other than the selling stockholder, elect to acquire any of the shares of the selling stockholder as specified in said selling stockholder's notice, the corporation shall so notify the selling stockholder and settlement thereof shall be made in cash within thirty (30) days after the corporation receives said selling stockholder's notice; provided that if the terms of payment set forth in said selling stockholder's notice were other than cash against delivery, the corporation and/or its other stockholders shall pay for said shares on the same terms and conditions set forth in said selling stockholder's notice.

(e) *Sale by Selling Stockholder.* In the event the corporation and/or its other stockholders do not elect to acquire all of the shares specified in the selling stockholder's notice, said selling stockholder may, within the thirty (30) day period following the expiration of the option rights granted to the corporation and other stockholders herein, sell elsewhere the shares specified in said selling stockholder's notice which were not acquired by the corporation and/or its other stockholders, in accordance with the provisions of paragraph (d) of this Section 9.1, provided that said sale shall not be on terms and conditions more favorable to the purchaser than those contained in said selling stockholder's notice. All shares so sold by said selling stockholder shall continue to be subject to the provisions of this bylaw in the same manner as before said transfer. Notwithstanding the foregoing, (i) unless and until the corporation and/or its other stockholders have elected not to purchase the shares, no stockholder shall enter into a legally binding obligation to sell, transfer or assign the shares to a third party, and (ii) the selling stockholder shall comply and abide by any confidentiality obligations it has with the corporation.

(f) *Permitted Transactions.* Anything to the contrary contained herein notwithstanding, the following transactions shall be exempt from the provisions of this bylaw:

(1) A stockholder's transfer of any or all shares held either during such stockholder's lifetime or on death by will or intestacy to such stockholder's immediate family or to any custodian or trustee for the account of such stockholder or such stockholder's immediate family. "Immediate family" as used herein shall mean spouse, lineal descendant, father, mother, brother, or sister of the stockholder making such transfer;

(2) A stockholder's bona fide pledge or mortgage of any shares with a commercial lending institution, provided that any subsequent transfer of said shares by said institution shall be conducted in the manner set forth in this bylaw;

(3) A stockholder's transfer of any or all of such stockholder's shares to the corporation;

(4) A stockholder's transfer of any or all of such stockholder's shares to a person who at the time of such transfer is an officer or director of the corporation;

(5) A corporate stockholder's transfer of any or all of its shares pursuant to and in accordance with the terms of any merger, consolidation, reclassification of shares or capital reorganization of the corporate stockholder or pursuant to a sale of all or substantially all of the stock or assets of a corporate stockholder;

(6) A corporate stockholder's transfer of any or all of its shares to any or all of its stockholders;

(7) A transfer by a stockholder which is a limited or general partnership to any or all of its partners or former partners; or

(8) A distribution by INBONE Technologies, Inc. ("INBONE") of the shares of Series 1 Common Stock held by INBONE to the stockholders of INBONE.

In any such case, the transferee, assignee or other recipient shall receive and hold such stock subject to the provisions of this bylaw, and there shall be no further transfer of such stock except in accord with this bylaw.

(g) *Waiver of Right of First Refusal*. The provisions of this bylaw may be waived with respect to any transfer either by the corporation upon duly authorized action of the Board of Directors, or by the stockholders upon the express written consent of the owners of a majority of the voting power of the corporation (excluding the votes represented by those shares to be transferred by the transferring stockholder). This bylaw may be amended or repealed either by a duly authorized action of the Board of Directors or by the stockholders, upon the express written consent of the owners of a majority of the voting power of the corporation.

(h) *Void Transfers*. Any sale or transfer, or purported sale or transfer, of securities of the corporation shall be null and void unless the terms, conditions and provisions of this bylaw are strictly observed and followed.

(i) *Termination of Right of First Refusal*. The foregoing right of first refusal shall terminate on either of the following dates, whichever shall first occur:

(1) Upon the date of (i) the consummation of the corporation's first firm commitment underwritten public offering of its common stock registered under the Securities Act of 1933, as amended or (ii) the consummation of a Liquidation Event, as that term is defined in the Company's Restated Certificate of Incorporation (as amended from time to time).

(j) *Legends*. The certificates representing shares of stock of the corporation shall bear on their face the following legend so long as the foregoing right of first refusal remains in effect:

"THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A RIGHT OF FIRST REFUSAL OPTION IN FAVOR OF THE CORPORATION AND/OR ITS ASSIGNEE(S), AS PROVIDED IN THE BYLAWS OF THE CORPORATION."

ARTICLE X
LOANS TO OFFICERS

10.1 The corporation may lend money to, or guarantee any obligation of or otherwise assist any officer or other employee of the corporation or of its subsidiaries, including any officer or employee who is a director of the corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the corporation. The loan, guarantee or other assistance may be with or without interest and may be unsecured or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the corporation. Nothing in these bylaws shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the corporation at common law or under any statute.

ARTICLE XI
RECORDS AND REPORTS

11.1 The application and requirements of Section 1501 of the California General Corporation Law are hereby expressly waived to the fullest extent permitted thereunder.

CERTIFICATE OF SECRETARY OF

SI-BONE, INC.

The undersigned, Robert E. Johnson, hereby certifies that he is the duly elected and acting Secretary of **SI-BONE, Inc.**, a Delaware corporation (the "Corporation"), and that the Bylaws attached hereto constitute the Second Amended and Restated Bylaws of said Corporation as duly adopted at a meeting of the Corporation's Board of Directors on March 20, 2014.

IN WITNESS WHEREOF, the undersigned has hereunto subscribed his name this 20th day of March, 2014.

/s/ Robert E. Johnson

Robert E. Johnson, Secretary

Exhibit 10.1

INDEMNITY AGREEMENT

THIS INDEMNITY AGREEMENT (this "**Agreement**") dated as of , 2018, is made by and between **SI-BONE, INC.,** a Delaware corporation (the "**Company**"), and ("**Indemnitee**").

RECITALS

A. The Company desires to attract and retain the services of highly qualified individuals as directors, officers, employees and agents.

B. The Company's amended and restated bylaws (the "**Bylaws**") require that the Company indemnify its directors and officers, and empowers the Company to indemnify its employees and agents, as authorized by the Delaware General Corporation Law, as amended (the "**Code**"), under which the Company is organized and such Bylaws expressly provide that the indemnification provided therein is not exclusive and contemplates that the Company may enter into separate agreements with its directors, officers and other persons to set forth specific indemnification provisions.

C. Indemnitee does not regard the protection currently provided by applicable law, the Bylaws, the Company's other governing documents, and available insurance as adequate under the present circumstances, and the Company has determined that Indemnitee and other directors, officers, employees and agents of the Company may not be willing to serve or continue to serve in such capacities without additional protection.

D. The Company desires and has requested Indemnitee to serve or continue to serve as a director, officer, employee or agent of the Company, as the case may be, and has proffered this Agreement to Indemnitee as an additional inducement to serve in such capacity.

E. Indemnitee is willing to serve, or to continue to serve, as a director, officer, employee or agent of the Company, as the case may be, if Indemnitee is furnished the indemnity provided for herein by the Company.

AGREEMENT

NOW THEREFORE, in consideration of the mutual covenants and agreements set forth herein, the parties hereto, intending to be legally bound, hereby agree as follows:

1. Definitions.

(a) Agent. For purposes of this Agreement, the term "Agent" of the Company means any person who: (i) is or was a director**,** officer, employee, agent, or other fiduciary of the Company or a subsidiary of the Company; or (ii) is or was serving at the request or for the convenience of, or representing the interests of, the Company or a subsidiary of the Company, as a director, officer, employee, agent, or other fiduciary of a foreign or domestic corporation, partnership, joint venture, trust or other enterprise.

(b) Change in Control. For purposes of this Agreement, a "**Change in Control**" shall be deemed to have occurred if (i) any "person" (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended), other than a trustee or other fiduciary holding securities under an employee benefit plan of the Company or a corporation owned directly or indirectly by the stockholders of the Company in substantially the same proportions as their ownership of stock of the Company, is or becomes the "beneficial owner" (as defined in Rule 13d-3 under said Act), directly or indirectly, of securities of the Company representing 20% or more of the total voting power represented by the Company's then outstanding Voting Securities, (ii) individuals who on the date of this Agreement are members of the Board (the "**Incumbent Board**") cease for any reason to constitute at least a majority of the members of the Board (*provided, however,* that if the appointment or election (or nomination for election) of any new Board member was approved or recommended by a majority vote of the members of the Incumbent Board then still in office, such new member shall be considered as a member of the Incumbent Board), or (iii) the stockholders of the Company approve a merger or consolidation of the Company with any other corporation, other than a merger or consolidation which would result in the Voting Securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into Voting Securities of the surviving entity) at least 80% of the total voting power represented by the Voting Securities of the Company or such surviving entity outstanding immediately after such merger or consolidation, or the stockholders of the Company approve a plan of complete liquidation of the Company or an agreement for the sale or disposition by the Company of (in one transaction or a series of transactions) all or substantially all of the Company's assets.

(c) Expenses. For purposes of this Agreement, the term "Expenses" shall be broadly construed and shall include, without limitation, all direct and indirect costs of any type or nature whatsoever (including, without limitation, all attorneys', witness, or other professional fees and related disbursements, and other out-of-pocket costs of whatever nature, actually and reasonably incurred by Indemnitee in connection with the investigation, defense or appeal of a proceeding or establishing or enforcing a right to indemnification under this Agreement, the Code or otherwise, The term "Expenses" shall also include reasonable compensation for time spent by Indemnitee for which he or she is not compensated by the Company or any subsidiary or third party: (i) for any period during which Indemnitee is not an Agent, in the employment of, or providing services for compensation to, the Company or any subsidiary; and (ii) if the rate of compensation and estimated time involved is approved by the directors of the Company who are not parties to any action with respect to which Expenses are incurred, for Indemnitee while an Agent of, employed by, or providing services for compensation to, the Company or any subsidiary.

(d) Independent Counsel. For purposes of this Agreement, the term "Independent Counsel" means a law firm, or a partner (or, if applicable, member) of such a law firm, that is experienced in matters of corporation law and neither presently is, nor in the past five (5) years has been, retained to represent: (i) the Company or Indemnitee in any matter material to either such party, or (ii) any other party to the proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee's rights under this Agreement. The Company will pay the reasonable fees and expenses of the Independent Counsel referred to above and to fully indemnify such counsel against any and all expenses, claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto.

(e) Liabilities. For purposes of this Agreement, the term "Liabilities" shall be broadly construed and shall include, without limitation, judgments, damages, deficiencies, liabilities, losses, penalties, excise taxes, fines, assessments and amounts paid in settlement, including any interest and any federal, state, local or foreign taxes imposed as a result of the actual or deemed receipt of any payment under this Agreement.

(f) Proceedings. For purposes of this Agreement, the term "proceeding" shall be broadly construed and shall include, without limitation, any threatened, pending, or completed action, suit, claim, counterclaim, cross claim, arbitration, mediation, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing, or any other actual, threatened or completed proceeding, whether brought in the right of the Company or otherwise and whether of a civil, criminal, administrative or investigative nature, and whether formal or informal in any case, in which Indemnitee was, is or will be involved as a party, potential party, non-party witness, or otherwise by reason of: (i) the fact that Indemnitee is or was a director or officer of the Company; (ii) the fact that any action taken by Indemnitee (or a failure to take action by Indemnitee) or of any action (or failure to act) on Indemnitee's part while acting as an Agent; or (iii) the fact that Indemnitee is or was serving at the request of the Company as a director, officer, employee or agent of another corporation, partnership, joint venture, trust, employee benefit plan, or other enterprise, and in any such case described above, whether or not serving in any such capacity at the time any liability or Expense is incurred for which indemnification, reimbursement, or advancement of Expenses may be provided under this Agreement. If the Indemnitee believes in good faith that a given situation may lead to or culminate in the institution of a proceeding, this shall be considered a proceeding under this paragraph.

(g) Subsidiary. For purposes of this Agreement, the term "subsidiary" means any corporation, limited liability company, or other entity, of which more than 50% of the outstanding voting securities or equity interests are owned, directly or indirectly, by the Company and one or more of its subsidiaries, and any other corporation, limited liability company, partnership, joint venture, trust, employee benefit plan or other enterprise of which Indemnitee is or was serving at the request of the Company as an Agent.

(h) Voting Securities. For purposes of this Agreement, "***Voting Securities***" shall mean any securities of the Company that vote generally in the election of directors.

2. Agreement to Serve. Indemnitee will serve, or continue to serve, as the case may be, as an Agent, faithfully and to the best of his or her ability, at the will of such entity designated by the Company and at the request of the Company (or under separate agreement, if such agreement exists), in the capacity Indemnitee currently serves such entity, so long as Indemnitee is duly appointed or elected and qualified in accordance with the applicable provisions of the governance documents of such entity, or until such time as Indemnitee tenders his or her resignation in writing; provided, however, that nothing contained in this Agreement is intended as an employment agreement between Indemnitee and the Company or any of its subsidiaries or to create any right to continued employment of Indemnitee with the Company or any of its subsidiaries in any capacity.

The Company acknowledges that it has entered into this Agreement and assumes the obligations imposed on it hereby, in addition to and separate from its obligations to Indemnitee under the Bylaws, to induce Indemnitee to serve, or continue to serve, as an Agent, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as an Agent.

3. Indemnification.

(a) Indemnification in Third Party Proceedings. Subject to Section 10 below, the Company shall indemnify Indemnitee to the fullest extent permitted by the Code, as the same may be amended from time to time (but, to the fullest extent of the law, only to the extent that such amendment permits Indemnitee to broader indemnification rights than the Code permitted prior to adoption of such amendment), if Indemnitee is a party to or threatened to be made a party to or otherwise involved in any proceeding, other than a proceeding by or in the right of the Company to procure a judgment in its favor, for any and all Expenses and Liabilities (including all interest, assessments and other charges paid or payable in connection with or in respect of such Expenses and Liabilities) incurred by Indemnitee in connection with the investigation, defense, settlement or appeal of such proceeding, if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company and, in the case of a criminal proceeding had no reasonable cause to believe that Indemnitee's conduct was unlawful. The parties hereto intend that this Agreement shall provide to the fullest extent permitted by law for indemnification in excess of that expressly permitted by statute, including, without limitation, any indemnification provided by the Certificate of Incorporation of the Company, the Bylaws, vote of its stockholders or disinterested directors, or applicable law.

(b) Indemnification in Derivative Actions and Direct Actions by the Company. Subject to Section 10 below, the Company shall indemnify Indemnitee to the fullest extent permitted by the Code, as the same may be amended from time to time (but, fullest extent permitted by applicable law, only to the extent that such amendment permits Indemnitee to broader indemnification rights than the Code permitted prior to adoption of such amendment), if Indemnitee is a party to or threatened to be made a party to or otherwise involved in any proceeding by or in the right of the Company to procure a judgment in its favor, against any and all Expenses actually and reasonably incurred by Indemnitee in connection with the investigation, defense, settlement, or appeal of such proceedings, if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company. No indemnification for Expenses shall be made under this Section 3(b) in respect of any claim, issue or matter as to which Indemnitee shall have been finally adjudged by a court competent jurisdiction to be liable to the Company, unless and only to the extent that the Chancery Court of the State of Delaware or any court in which the proceeding was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnification.

4. Indemnification of Expenses of Successful Party. Notwithstanding any other provision of this Agreement, in circumstances where indemnification is not available under Section 3(a) or 3(b), as the case may be, to the fullest extent permitted by law and to the extent that Indemnitee is a party to (or a participant in) any proceeding and has been successful on the merits or otherwise in defense of any proceeding or in defense of any claim, issue or matter therein, in whole or part, including the dismissal of any action without prejudice, the Company shall indemnify Indemnitee against all Expenses and Liabilities in connection with the investigation, defense or appeal of such proceeding. If Indemnitee is not wholly successful in such proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such proceeding, the Company shall indemnify Indemnitee against all Expenses and Liabilities incurred by Indemnitee or on Indemnitee's behalf in connection with or related to each successfully resolved claim, issue or matter to the fullest extent permitted by law.

5. Partial Indemnification; Witness Indemnification. If Indemnitee is entitled under any provision of this Agreement to indemnification by the Company for some or a portion of any Expenses and Liabilities incurred by Indemnitee in the investigation, defense, settlement or appeal of a proceeding, but is precluded by applicable law or the specific terms of this Agreement to indemnification for the total amount thereof, the Company shall nevertheless indemnify Indemnitee for the portion thereof to which Indemnitee is entitled. Notwithstanding any other provision of this Agreement, to the fullest extent permitted by applicable law and to the extent that Indemnitee is, by reason of Indemnitee's acting as an Agent, a witness or otherwise asked to participate in any proceeding to which Indemnitee is not a party, Indemnitee shall be indemnified against all Expenses incurred by Indemnitee or on Indemnitee's behalf in connection therewith.

6. Advancement of Expenses. To the extent not prohibited by law, the Company shall advance the Expenses incurred by Indemnitee in connection with any proceeding, and such advancement shall be made within twenty (20) days after the receipt by the Company of a statement or statements requesting such advances (which shall include invoices received by Indemnitee in connection with such Expenses but, in the case of invoices in connection with legal services, any references to legal work performed or to expenditures made that would cause Indemnitee to waive any privilege accorded by applicable law shall not be included with the invoice) and upon request of the Company, an undertaking to repay the advancement of Expenses if and to the extent that it is ultimately determined by a court of competent jurisdiction in a final judgment, not subject to appeal, that Indemnitee is not entitled to be indemnified by the Company. Advances shall be unsecured, interest free and without regard to Indemnitee's ability to repay the Expenses. Advances shall include any and all Expenses incurred by Indemnitee pursuing an action to enforce Indemnitee's right to indemnification under this Agreement or otherwise and this right of advancement, including expenses incurred preparing and forwarding statements to the Company to support the advances claimed. Indemnitee acknowledges that the execution and delivery of this Agreement shall constitute an undertaking providing that Indemnitee shall, to the fullest extent required by law, repay the advance (without interest) if and to the extent that it is ultimately determined by a court of competent jurisdiction in a final judgment, not subject to appeal, that Indemnitee is not entitled to be indemnified by the Company. The right to advances under this Section shall continue until final disposition of any proceeding, including any appeal therein. This Section 6 shall not apply to any claim made by Indemnitee for which indemnity is excluded pursuant to Section 10(b).

7. Notice and Other Indemnification Procedures.

(a) Notification of Proceeding. Indemnitee will notify the Company in writing promptly upon being served with any summons, citation, subpoena, complaint, indictment, information or other document relating to any proceeding or matter which may be subject to indemnification or advancement of Expenses covered hereunder. The written notification to the Company shall include a description of the nature of the proceeding and the facts underlying the proceeding. The failure of Indemnitee to so notify the Company shall not relieve the Company of any obligation which it may have to Indemnitee under this Agreement or otherwise and any delay in so notifying the Company shall not constitute a waiver by Indemnitee of any rights under this Agreement.

(b) Request for Indemnification Payments. To obtain indemnification under this Agreement, Indemnitee shall submit to the Company a written request, including therein or therewith such documentation and information as is reasonably available to Indemnitee and is reasonably necessary to determine whether and to what extent Indemnitee is entitled to indemnification under the terms of this Agreement, and shall request payment thereof by the Company.

(c) Determination of Right to Indemnification Payments. Upon written request by Indemnitee for indemnification pursuant to the Section 7(b) hereof, a determination with respect to Indemnitee's entitlement thereto shall be made in the specific case by one of the following four methods, which shall be at the election of the Board of Directors: (1) by a majority vote of the disinterested directors, even though less than a quorum, (2) by a committee of disinterested directors designated by a majority vote of the disinterested directors, even though less than a quorum, (3) if there are no disinterested directors or if the disinterested directors so direct, by Independent Counsel in a written opinion to the Board of Directors, a copy of which shall be delivered to the Indemnitee, or (4) if so directed by the Board of Directors, by the stockholders of the Company; *provided, however*, that if there has been a Change in Control, then such determination shall be made by Independent Counsel selected by Indemnitee and approved by the Company (which approval shall not be unreasonably withheld). For purposes hereof, disinterested directors are those members of the board of directors of the Company who are not parties to the action, suit or proceeding in respect of which indemnification is sought by Indemnitee. Indemnification payments requested by Indemnitee under Section 3 hereof shall be made by the Company no later than sixty (60) days after receipt of the written request of Indemnitee. Claims for advancement of Expenses shall be made under the provisions of Section 6 herein.

(d) Application for Enforcement. In the event the Company fails to make timely payments as set forth in Sections 6 or 7(b) above, Indemnitee shall have the right to apply to any court of competent jurisdiction for the purpose of enforcing Indemnitee's right to indemnification or advancement of Expenses pursuant to this Agreement. In such an enforcement hearing or proceeding, the burden of proof shall be on the Company to prove that indemnification or advancement of Expenses to Indemnitee is not required under this Agreement or permitted by applicable law. Any determination by the Company (including its Board of Directors, a committee thereof, Independent Counsel) or stockholders**,** that Indemnitee is not entitled to indemnification hereunder, shall not be a defense by the Company to the action nor create any presumption that Indemnitee is not entitled to indemnification or advancement of Expenses hereunder.

(e) Indemnification of Certain Expenses. The Company shall indemnify Indemnitee against all Expenses incurred in connection with any hearing or proceeding under this Section 7 unless the Company prevails in such hearing or proceeding on the merits in all material respects.

8. Assumption of Defense. In the event the Company shall be requested by Indemnitee to pay the Expenses of any proceeding, the Company, if appropriate, shall be entitled to assume the defense of such proceeding, or to participate to the extent permissible in such proceeding, with counsel reasonably acceptable to Indemnitee. Upon assumption of the defense by the Company and the retention of such counsel by the Company, the Company shall not be liable to Indemnitee under this Agreement for any fees of counsel subsequently incurred by Indemnitee with respect to the same proceeding, provided that Indemnitee shall have the right to employ separate counsel in such proceeding at Indemnitee's sole cost and expense. Notwithstanding the foregoing, if Indemnitee's counsel delivers a written notice to the Company stating that such counsel has reasonably concluded that there may be a conflict of interest between the Company and Indemnitee in the conduct of any such defense or the Company shall not, in fact, have employed counsel or otherwise actively pursued the defense of such proceeding within a reasonable time, then in any such event the fees and Expenses of Indemnitee's counsel to defend such proceeding shall be subject to the indemnification and advancement of Expenses provisions of this Agreement.

9. Insurance. To the extent that the Company maintains an insurance policy or policies providing liability insurance for Agents or for agents of any other Enterprise, Indemnitee shall be covered by such policy or policies in accordance with its or their terms to the maximum extent of the coverage available for any such Agent or agent under such policy or policies. If, at the time of the receipt of a notice of a claim pursuant to the terms hereof, the Company has director and officer liability insurance in effect or otherwise potentially available, the Company shall give prompt notice of the commencement of such proceeding to the insurers in accordance with the procedures set forth in the respective policies. The Company shall thereafter take all necessary or desirable action to cause such insurers to pay, on behalf of the Indemnitee, all amounts payable as a result of such proceeding in accordance with the terms of such policies.

10. Exceptions.

(a) Certain Matters. Any provision herein to the contrary notwithstanding, the Company shall not be obligated pursuant to the terms of this Agreement to indemnify Indemnitee on account of any proceeding with respect to: (i) remuneration paid to Indemnitee if it is determined by final judgment or other final adjudication that such remuneration was in violation of law (and, in this respect, both the Company and Indemnitee have been advised that the Securities and Exchange Commission believes that indemnification for liabilities arising under the federal securities laws is against public policy and is, therefore, unenforceable and that claims for indemnification should be submitted to appropriate courts for adjudication, as indicated in Section 10(d) below); (ii) a final judgment rendered against Indemnitee for an accounting, disgorgement or repayment of profits made from the purchase or sale by Indemnitee of securities of the Company against Indemnitee pursuant to the provisions of Section 16(b) of the Securities Exchange Act of 1934, as amended, or other provisions of any federal, state or local statute or rules and regulations thereunder; or (iii) a final judgment or other final adjudication that Indemnitee's conduct was in bad faith, knowingly fraudulent or deliberately dishonest or constituted willful misconduct (but only to the extent of such specific determination); or (iv) on account of conduct that is established by a final judgment as constituting a breach of Indemnitee's duty of loyalty to the Company or resulting in any personal profit or advantage to which Indemnitee is not legally entitled. For purposes of the foregoing sentence, a final judgment or other adjudication may be reached in either the underlying proceeding or action in connection with which indemnification is sought or a separate proceeding or action to establish rights and liabilities under this Agreement.

(b) Claims Initiated by Indemnitee. Any provision herein to the contrary notwithstanding, the Company shall not be obligated to indemnify or advance Expenses to Indemnitee with respect to proceedings or claims initiated or brought by Indemnitee against the Company or its Agents and not by way of defense, except (i) with respect to proceedings brought to establish or enforce a right to indemnification or advancement under this Agreement or under any other agreement, provision in the Bylaws or Certificate of Incorporation or applicable law, or (ii) with respect to any other proceeding initiated by Indemnitee that is either approved by the Board of Directors or Indemnitee's participation is required by applicable law. However, indemnification or advancement of Expenses may be provided by the Company in specific cases if the Board of Directors determines it to be appropriate.

(c) Unauthorized Settlements. Any provision herein to the contrary notwithstanding, the Company shall not be obligated pursuant to the terms of this Agreement to indemnify Indemnitee under this Agreement for any amounts paid in settlement of a proceeding effected without the Company's written consent. Neither the Company nor Indemnitee shall unreasonably withhold consent to any proposed settlement; provided, however, that the Company may in any event decline to consent to (or to otherwise admit or agree to any liability for indemnification hereunder in respect of) any proposed settlement if the Company is also a party in such proceeding and determines in good faith that such settlement is not in the best interests of the Company and its stockholders.

(d) Securities Act Liabilities. Any provision herein to the contrary notwithstanding, the Company shall not be obligated pursuant to the terms of this Agreement to indemnify Indemnitee or otherwise act in violation of any undertaking appearing in and required by the rules and regulations promulgated under the Securities Act of 1933, as amended (the "**Act**"), or in any registration statement filed with the SEC under the Act. Indemnitee acknowledges that paragraph (h) of Item 512 of Regulation S-K currently generally requires the Company to undertake in connection with any registration statement filed under the Act to submit the issue of the enforceability of Indemnitee's rights under this Agreement in connection with any liability under the Act on public policy grounds to a court of appropriate jurisdiction and to be governed by any final adjudication of such issue. Indemnitee specifically agrees that any such undertaking shall supersede the provisions of this Agreement and to be bound by any such undertaking.

(e) Prior Payments Any provision herein to the contrary notwithstanding, the Company shall not be obligated pursuant to the terms of this Agreement to indemnify or advance Expenses to Indemnitee under this Agreement for which payment has actually been made to or on behalf of Indemnitee under any insurance policy or other indemnity provision, expect with respect to any excess beyond the amount paid under any insurance policy or indemnity policy.

11. Nonexclusivity and Survival of Rights. The provisions for indemnification and advancement of Expenses set forth in this Agreement shall not be deemed exclusive of any other rights which Indemnitee may at any time be entitled under any provision of applicable law, the Company's Certificate of Incorporation, Bylaws or other agreements, both as to action in Indemnitee's official capacity and Indemnitee's action as an Agent, in any court in which a proceeding is brought, and Indemnitee's rights hereunder shall continue after Indemnitee has ceased acting as an Agent and shall inure to the benefit of the heirs, executors, administrators and assigns of Indemnitee. The obligations and duties of the Company to Indemnitee under this Agreement shall be binding on the Company and its successors and assigns until terminated in accordance with its terms. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company, expressly to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform if no such succession had taken place.

No amendment, alteration or repeal of this Agreement or of any provision hereof shall limit or restrict any right of Indemnitee under this Agreement in respect of any action taken or omitted by such Indemnitee in his or her corporate status prior to such amendment, alteration or repeal. To the extent that a change in the Code, whether by statute or judicial decision, permits greater indemnification or advancement of Expenses than would be afforded currently under the Company's Certificate of Incorporation, Bylaws and this Agreement, it is the intent of the parties hereto that Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, by Indemnitee shall not prevent the concurrent assertion or employment of any other right or remedy by Indemnitee.

12. Term. This Agreement shall continue until and terminate upon the later of: (a) five (5) years after the date that Indemnitee shall have ceased to serve as an Agent; or (b) one (1) year after the final termination of any proceeding, including any appeal then pending, in respect to which Indemnitee was granted rights of indemnification or advancement of Expenses hereunder.

No legal action shall be brought and no cause of action shall be asserted by or in the right of the Company against an Indemnitee or an Indemnitee's estate, spouse, heirs, executors or personal or legal representatives after the expiration of five (5) years from the date of accrual of such cause of action, and any claim or cause of action of the Company shall be extinguished and deemed released unless asserted by the timely filing of a legal action within such five-year period; provided, however, that if any shorter period of limitations is otherwise applicable to such cause of action, such shorter period shall govern.

13. Subrogation. In the event of payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who, at the request and expense of the Company, shall execute all papers required and shall do everything that may be reasonably necessary to secure such rights, including the execution of such documents necessary to enable the Company effectively to bring suit to enforce such rights.

14. Interpretation of Agreement. It is understood that the parties hereto intend this Agreement to be interpreted and enforced so as to provide indemnification and advancement of Expenses to Indemnitee to the fullest extent now or hereafter permitted by law.

15. Severability. If any provision of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever, (a) the validity, legality and enforceability of the remaining provisions of the Agreement (including without limitation, all portions of any paragraphs of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that are not themselves invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; and (b) to the fullest extent possible, the provisions of this Agreement (including, without limitation, all portions of any paragraph of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that are not themselves invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested by the provision held invalid, illegal or unenforceable and to give effect to Section 14 hereof.

16. Amendment and Waiver. No supplement, modification, amendment, or cancellation of this Agreement shall be binding unless executed in writing by the parties hereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provision hereof (whether or not similar) nor shall such waiver constitute a continuing waiver.

17. Notice. Except as otherwise provided herein, any notice or demand which, by the provisions hereof, is required or which may be given to or served upon the parties hereto shall be in writing and, if by electronic transmission, shall be deemed to have been validly served, given or delivered when sent, if by overnight delivery, courier or personal delivery, shall be deemed to have been validly served, given or delivered upon actual delivery and, if mailed, shall be deemed to have been validly served, given or delivered three (3) business days after deposit in the United States mail, as registered or certified mail, with proper postage prepaid and addressed to the party or parties to be notified at the addresses set forth on the signature page of this Agreement (or such other address(es) as a party may designate for itself by like notice). If to the Company, notices and demands shall be delivered to the attention of the Secretary of the Company.

18. Governing Law. This Agreement shall be governed exclusively by and construed according to the laws of the State of Delaware, as applied to contracts between Delaware residents entered into and to be performed entirely within Delaware.

19. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute but one and the same Agreement. Only one such counterpart need be produced to evidence the existence of this Agreement.

20. Headings. The headings of the sections of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction hereof.

21. Entire Agreement. Subject to Section 11 hereof, this Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements, understandings and negotiations, written and oral, between the parties with respect to the subject matter of this Agreement; provided, however, that this Agreement is a supplement to and in furtherance of the Company's Certificate of Incorporation, Bylaws, the Code and any other applicable law, and shall not be deemed a substitute therefor, and does not diminish or abrogate any rights of Indemnitee thereunder.

22. Contribution. To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for Expenses, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such proceeding in order to reflect (i) the relative benefits received by the Company and Indemnitee as a result of the event(s) and/or transaction(s) giving cause to such proceeding; and/or (ii) the relative fault of the Company and Indemnitee in connection with such event(s) and/or transaction(s).

23. Consent to Jurisdiction. This Agreement and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. The Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Chancery Court of the State of Delaware (the "Delaware Court"), and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) agree to appoint, to the extent such party is not otherwise subject to service of process in the State of Delaware, an agent in the State of Delaware as such party's agent for acceptance of legal process in connection with any such action or proceeding against such party with the same legal force and validity as if served upon such party personally within the State of Delaware, (iv) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court, and (v) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

[Signature Page to Follow]

IN WITNESS WHEREOF, the parties hereto have entered into this Agreement effective as of the date first above written.

COMPANY

By: _____

Name: _____

Title: _____

INDEMNITEE

_____

Signature of Indemnitee

_____

Print or Type Name of Indemnitee

Exhibit 10.5

Quality and Manufacturing Agreement

by and between

CEP Bio-Coat, LLC dba Orchid Detroit

and

SI-BONE, Inc.

This Quality and Manufacturing Agreement (this "Agreement"), effective April 18, 2016 ("Effective Date"), is by and between Orchid MPS Holdings, LLC ("Supplier") with its principal office at 1489 Cedar Street, Holt, MI 48842, and **SI-BONE, Inc.,** a Delaware corporation with its principal office at 3055 Olin Ave., Suite 2200, San Jose, CA 95128 ("Purchaser").

WHEREAS, the Purchaser develops and designs medical devices and from time to time may seek to have such devices manufactured for it by the Supplier; and

WHEREAS, the Supplier has expertise in the manufacture of medical devices and components and desires to provide manufacturing services for the Purchaser.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Definitions. Unless otherwise defined in this Agreement, as used herein, the following defined terms shall have the meanings given them below.

1.1. "Affiliate" means any entity which directly or indirectly controls, is controlled by, or is under common control with the referenced party. For purposes of this Section 1.1, "control," when used with respect to any entity, means the power to direct or cause the direction of the management and policies of such entity, directly or indirectly, whether through ownership of voting securities or by contract or otherwise, and the terms and "controlled by" and "under common control" have meanings correlative to the foregoing.

1.2. "Bankruptcy Event" means the institution of voluntary or involuntary proceedings by or against a person or entity in bankruptcy or under any insolvency law, or the appointment of a receiver or custodian for such person or entity, or the institution of proceedings by or against such person or entity for corporate reorganization or the dissolution of such person or entity, which proceedings, if involuntary, shall not have been dismissed within sixty (60) days after the date of filing, or an assignment by such person or entity for the benefit of its creditors.

1.3. "Default" has the meaning given in Section 10.3.

1.4. "Forecast" has the meaning given in Section 3.4.

1.5. "Intellectual Property" means any inventions, improvements, developments, or innovations (including all rights to patents, copyrights, trademarks, and trade secrets and know-how inherent therein and appurtenant thereto) and other creative works (whether or not patentable or copyrightable, conceived or made or reduced to practice), know-how, technical

information, pending patent applications, registrations, divisions and continuations thereof, registered and unregistered copyrights, and all associated goodwill, designs, drawings, specifications, vendor lists, manufacturing methods and processes, and all other information pertinent to this Agreement, which is proprietary to a party.

1.6. "Order" has the meaning given in Section 3.5.

1.7. "Process" means the methods and all referenced procedures used in the manufacture of any Product.

1.8. "Product" means the product or products to be manufactured hereunder pursuant to mutual agreement of the parties and as described in the Specifications for such Product.

1.9. "Product Device Master Record" means the Product Device Master Record for the Product required by the Regulatory Authorities, as it may be revised and in effect from time to time.

1.10. "Purchase Price" has the meaning given in Section 3.1.

1.11. "Regulatory Authority" means the Food and Drug Administration of the United States (the "FDA") or, any successor agency or, if applicable in the context, the government agency performing the same regulatory functions as the FDA in another country.

1.12. "Specifications" means the specifications for the Product as provided in the Product Device Master Record.

2. Supply Rights.

2.1. Manufacture and Supply. Subject to the terms and conditions of this Agreement, the Supplier shall manufacture the Products for and supply them to the Purchaser.

2.2. Third Party Supplier. All Products must be manufactured and assembled solely by the Supplier. Supplier will not engage any third parties to provide services or goods relating to this Agreement without Purchaser's prior written approval. If use of a third party supplier is agreed upon by the Purchaser, the Supplier shall have a Quality Agreement, giving effect to each of the affirmative obligations regarding quality assurance set forth herein, with any third party supplier used for production, packaging, testing, sterilization, processing, or release. Upon the Customer's request, the Supplier will provide a copy of the Quality Agreement.

3. Orders, Prices, Terms, Delivery, Forecast and Inventory.

3.1. Purchase Price. Purchaser shall pay the amounts set forth on Purchase Orders (as described below), and specifying in reasonable detail the Product(s) covered thereby, the applicable pricing ("Purchase Price"). Pricing shall be in US dollars. Supplier shall pay all contributions, taxes and premiums payable under federal, state and local laws measured upon the payroll of employees and agents engaged in the performance of work under this Agreement. Except as otherwise agreed to in writing by the parties, adjustments to the Price shall be made no more than once every twelve (12) months. The parties will meet annually to review changes in production costs, and Supplier shall share a reasonably detailed analysis of Supplier's direct and indirect costs incurred in the manufacture of the Products. In connection with such annual cost review meeting, Supplier may submit a written request for a price increase if is direct costs have increased by more than [*] from its direct costs over the preceding supply year. Purchaser may submit a written request for a price decrease if Supplier's direct costs have decreased by more than [*] from its direct costs over the preceding supply year. New prices will be effective immediately upon being agreed to in writing by both parties or at such other time as may be agreed to in writing by both parties. Pricing may be modified upon any changes to the Specifications of the Products made by Purchaser.

3.2. Orders, Shipping Terms, and Inconsistencies. All shipments of Products shall be F.O.B. Origin, and shall be accompanied by a packing slip that describes the Products and states the Order number. Purchaser shall pay all shipping costs. Title to and all risk of loss or damage shall pass to Purchaser upon shipment of the Products from the Supplier to Purchaser's designated point of delivery. If there is any conflict or inconsistency between this Agreement and any Purchase Order, Order release, confirmation, acceptance or any similar document, the terms of this Agreement shall govern and control.

3.3. Payment. Supplier shall invoice Purchaser for each Product no earlier than its date of shipment. Purchaser shall pay the Purchase Price shown on each undisputed invoice within [*] of its receipt of the same.

3.4. Forecasts. Purchaser shall provide to the Supplier no later than the fifteenth day of each calendar quarter, a non-binding (except as otherwise specified herein) rolling estimate by month of the Purchaser's requirements for orders and deliveries of the Products for [*] period ("Forecast"). Each Forecast shall update prior Forecasts as well as provide estimates for the time period added to the Forecast over the prior Forecast.

3.5. Orders. The Purchaser will submit binding firm purchase orders (the "Order(s)" or "Purchase Order(s)") for Products to the Supplier by mail, facsimile, or electronically. Each Order shall contain the following information: (i) a description of the Product by part and revision number; (ii) the quantity of the Product to be delivered to the Purchaser; (iii) the current applicable Purchase Price for such Products, (iv) the delivery date or shipping schedule; (v) the location to which the Product is to be shipped; and (vi) transportation instructions. Each Order shall provide an Order number for billing purposes, and may include other instructions and terms as may be appropriate under the circumstances. The lead times for each Product ("Product Specific Lead Times") shall be determined by mutual agreement of the parties upon delivery of the Specifications and agreement by the Supplier to supply the applicable Product.

3.6. Emergency Deliveries. Notwithstanding Section 3.5, in the event that Purchaser desires to place Orders for Products requiring delivery within a shorter period than the Product Specific Lead Time(s) ("Emergency Purchase Orders"), Purchaser shall notify Supplier and Supplier shall provide the Purchaser with a commercially reasonable written estimate of any additional costs (the "Emergency Quote") that would be incurred to manufacture Products to meet the delivery schedule in an Emergency Purchase Order. Supplier will be obligated to supply such Products in the manner specified in an Emergency Purchase Order only if the Purchaser agrees in writing to pay the additional costs set forth in the Emergency Quote. Upon Purchaser's written acceptance of the Emergency Quote, the Supplier agrees to meet such delivery schedules specified in such Emergency Purchase Orders.

3.7. Excess and Obsolete Inventory. If Purchaser cancels or materially changes any Order, Supplier shall make good faith efforts to mitigate any costs which may be incurred with such Order changes. Notwithstanding the foregoing, should any inventory (including finished goods, works-in-process, components, or raw materials) be rendered excess or obsolete (as agreed upon by both Purchaser and Supplier) due to (i) the cancellation by Purchaser of any Orders, or (ii) changes or modifications to Orders, and that cannot reasonably and without extra cost to the Supplier be utilized on other Supplier products or returned to its suppliers, or such damages otherwise mitigated, the impact of such changes will be the financial responsibility of the Purchaser, at the Supplier's documented actual costs (including, but not limited to, restocking charges paid by the Supplier to its suppliers, labor, and component costs). Notwithstanding the foregoing, Supplier will accept all financial responsibility for inventory purchased in excess of the then-current Forecast

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

4. Quality.

4.1. Manufacturing Processes and Approvals. Supplier will manufacture Products that fully conform with: (i) Product Specifications supplied by Purchaser, (ii) applicable regulations relating to 21 CFR Part 820 Quality System Regulations, Good Manufacturing Practices, including device and lot history records, (iii) quality system requirements of ISO 13485 and MDD 93/42/EEC, and (iv) in accordance with a risk management system conforming to the requirements of ISO 14971.

4.2. Changes by Supplier: Manufacturing. Supplier shall make no change to the Specifications, Process, Product tooling design, processing conditions, materials or manufacturing location without Purchaser's prior written approval. Supplier shall provide a written request for any such change. Such request must include a description of the specific proposed change, the reason for the proposed change, the perceived benefit that will be derived from the proposed change, the perceived potential loss that may arise from failure to make the proposed change, and the anticipated lead time that will be necessary to make the proposed change. For accepted changes, the Supplier and Purchaser will work together to develop an implementation plan.

4.3. Changes by Supplier: Deviations. Supplier shall provide a written request for any deviation from a document, specification, drawing, etc. Such request must explain the specific proposed deviation, the reason for the proposed deviation, and the period (time, lots, etc.) the proposed deviation is to be in effect. Supplier shall not proceed with a deviation without Purchaser's prior written approval.

4.4. Disposition of Non-Conforming Material. The Supplier shall identify, segregate and investigate all nonconforming material. The Supplier may make scrap dispositions without Purchaser's prior written approval. Suppler shall not make concession ("use as is") or rework dispositions without Purchaser's prior written approval. Supplier shall provide a written request for any concession ("use as is") or rework disposition. Such request must include the inspection or test conducted, the actual results, and if applicable, the proposed disposition or repair. In the event a disposition is approved, Supplier shall update the production-monitoring portion of the ISO 14971 Risk Management File to include information on the nonconformity. If the Supplier performs rework, a written history of all rework and/or corrective actions shall accompany the Product shipped to Purchaser.

4.5. Corrective Action. Supplier shall initiate corrective action for all detected nonconforming material regardless of disposition. Corrective action shall include (1) Investigation (including impact to product already released) and determination of root cause, (2) Proposed corrective action to prevent recurrence, (3) Implementation of corrective actions, and (4) Verification of the effectiveness of the corrective action. The Supplier shall report the results of the corrective action to the Purchaser within fifteen (15) working days of initiation. The Supplier shall keep records of these activities and make them available to the Purchaser upon request.

4.6. Device History Record. The Supplier and Purchaser will maintain the following portions of the Device History Record required by 21 CFR §820.181. Supplier shall keep records of these activities and make them available to the Purchaser within one business day of request.

a. Device specifications (Purchaser)

b. Production process specifications (Supplier)

c. Quality assurance procedures and specifications (Supplier)

d. Labeling specifications (Purchaser)

e. Packaging specifications (Supplier)

f. Maintenance procedures and methods records (Supplier)

4.7. Labeling Operations. Supplier shall control all labeling operations to prevent labeling errors. Supplier shall record all labeling activities on the Device/Lot History Record.

4.8. Packaging Operations. Supplier shall pack and package Product using best practices to protect Product from deterioration or damage during processing, storage, handling, and shipment. Supplier shall record all packaging activities on the Device/Lot History Record.

4.9. Environmental Controls. If environmental conditions could reasonably be expected to have an adverse effect on product quality, the Supplier shall establish and maintain procedures, including maintenance, adjustment, and inspection to adequately control these environmental conditions. The Supplier shall keep records of these activities and make them available to the Purchaser upon request.

4.10. Personnel. If contact between personnel and the product could reasonably be expected to have an adverse effect on product quality, the Supplier shall establish and maintain requirements for the health, cleanliness, personal practices, and clothing of personnel to adequately control this contact. The Supplier shall keep records of these activities and make them available to the Purchaser upon request.

4.11. Equipment. The Supplier shall ensure that all equipment used in the manufacturing process for product is appropriately designed, constructed, placed, and installed. The Supplier shall establish and maintain schedules for the calibration, adjustment, cleaning, and other maintenance of equipment to ensure that manufacturing specifications are met. The Supplier shall keep records of these activities and make them available to the Purchaser upon request.

4.12. Inspection, Measuring, and Test Equipment. The Supplier shall ensure that all inspection, measuring, and test equipment (IM&TE) used in the manufacturing process for product is suitable for its intended purposes and is capable of producing valid results. Suitability includes limits for accuracy and precision. The Supplier shall establish and maintain schedules for the calibration, adjustment, cleaning, and other maintenance of equipment to ensure that manufacturing specifications are met. Calibration standards used for IM&TE shall be traceable to national or international standards. The Supplier shall keep records of these activities and make them available to the Purchaser upon request.

4.13. Process Validation. If the output of a Supplier's process is not fully verified by subsequent inspection or test, the Supplier shall validate the process with a high degree of assurance, [*].

The validation process shall create a validation protocol (describing the planned activities) and a validation report (documenting the outcome of the planned activities). All validated process changes shall be similarly validated prior to use. The Supplier shall keep records of these activities and make them available to the Purchaser upon request. When the Supplier ships products produced using a validated process, the Supplier shall include process documentation showing the date the process was operated, the name of the operator, the identity of major equipment used, the identity and calibration date of the IM&TE used in the process, and the setting of each input process parameter.

4.14. Facility Inspections by Purchaser. Purchaser shall have the right, upon reasonable advance written notice and during regular business hours, to inspect the facilities being used by the Supplier for production and storage of the Products. If any such inspection reveals that the facilities do not satisfy Purchaser's requirements, then Purchaser shall provide written notification, which notice shall contain in reasonable detail the identified deficiencies and, if practicable, remedial efforts the Supplier should undertake. Supplier shall remedy all

identified deficiencies within [*] days following Purchaser's written notification. In the event the deficiencies are not remedied within such [*] day period, Supplier shall be in material breach of this Agreement and Purchaser shall have the right to immediately terminate this Agreement.

4.15. Facility Inspections by Regulatory Authorities. Supplier shall notify Purchaser within 24 hours of any communication, correspondence, inquiry, inspection, audit or investigation by any regulatory authority or notified body in relation to the services provided under this Agreement or Purchaser's Products. Supplier shall consult and cooperate with Purchaser in responding to the regulatory authority, which shall include providing Purchaser access to all related documents and other information received from any regulatory authority or notified body. If requested, the Supplier will allow regulatory authorities and/or the Purchaser to inspect Product, storage locations, inventory and records. In the event a regulatory authority requests an inspection, Supplier will immediately contact Purchaser and inform the Purchaser of the inspection. In any event, Supplier shall neither make any commitments nor provide any undertakings, which, in either case, relate directly to the Products, to any regulatory authority or notified body without the prior written approval of Purchaser. Supplier's failure to comply with this Article "Inspection by Regulatory Authorities" shall be a material breach of this Agreement and Purchaser shall have the right to immediately terminate this Agreement.

4.16. Quality System Audits. Purchaser shall have the right, upon reasonable advance written notice and during regular business hours, to perform audits of Supplier's systems, documentation, and other requirements related to this Agreement. Audits shall be conducted at mutually agreed dates and times.

4.17. Records. Supplier will maintain records with respect to the manufacture of the Products for [*] after the last Product has been manufactured, at which time such records will be returned to Purchaser for maintenance or destruction.

4.18. Product Complaints. With respect to Product complaints, Purchaser shall be considered the "manufacturer" for regulatory purposes and is responsible for filing all required Medical Device Reports. If Purchaser reasonably believes that a complaint relates to a breach by the Supplier of the warranty contained in Section 5.1, Purchaser will forward the complaint to the Supplier and Supplier shall be responsible to remedy the noncompliance as provided in Section 5.2. If the Supplier receives a complaint related to the product, or any similar product, the Supplier provides to the Purchaser, the Supplier shall promptly notify the Purchaser. Purchaser will enter the complaint into the Purchaser's Complaint Management System (21 CFR §820.198) and review and evaluate the complaint to determine whether an investigation is necessary. The Supplier shall provide assistance in a complaint investigation as requested by the Purchaser.

4.19. Corrections and Removals. If the Supplier files a Corrections or Removals for the product, or any similar product that the Supplier provides to the Purchaser, the Supplier shall promptly notify the Purchaser. The Purchaser is responsible for managing corrections or removals of SI-BONE product.

4.20. Sterilization Services. Sterilization will be provided and managed by Supplier. Supplier and Purchaser will jointly review the sterilization validation protocol and report, which will include the results of sterilization validation and revalidation. Supplier will provide all sterilization documentation to Purchase upon request.

4.21. Manufacturing Process Documentation. The supplier shall provide the following documentation with each product lot shipped to the Purchaser:

a. Sterilization Certificate

b. Package Labeling Documentation

c. Job Order Pick List

d. Line Clearance Forms

e. Supplier Certificate of Conformance

f. Material Certificates

g. Supplier Inspection Sheets

h. Copy of any related Non-Conforming Material Reports

4.22. Storage and Shipment.

4.22.1. Storage. The Supplier shall establish and maintain procedures to control storage areas and stock rooms to prevent mix-ups, damage, deterioration, contamination, or other adverse effects. The Supplier shall ensure that all products are stored to facilitate proper stock rotation and that product is retrieved from stock using First In, First Out (FIFO) methodology.

4.22.2. Shipment. The Supplier shall ship products to the Purchaser using shipping methods that will prevent the damage or deterioration of the product.

5. Product Warranty and Limited Remedies.

5.1. Warranty. Supplier represents and warrants that the Products furnished under this Agreement shall be free from all defects in workmanship and materials and shall conform to the Specifications for a period of [*] after delivery to Purchaser.

5.2. Remedies. If Supplier fails to meet the warranty stated in Section 5.1 with respect to any Product, the Supplier shall, at the Purchaser's option, either (i) repair or replace such Product at the Supplier's own expense, and ship such repaired or replacement Product to either the Purchaser or the applicable customer at the Supplier's own expense, or (ii) credit to the Purchaser the Purchase Price for the non-conforming Product. If reasonably possible, all defective Products covered by the foregoing warranty shall be shipped to the Supplier at Supplier's expense for such repair or replacement.

5.3. Exclusions from Warranty. The warranty set forth in Section 5.1 above does not include Products that have defects or failures resulting from Purchaser's design of Products as set forth in the Specifications, including, but not limited to, design functionality failures, Specification inadequacies, failures relating to the functioning of Products in the manner for the intended purpose or failures resulting from unauthorized modification of the Products. To the extent that all Product designs have been provided by Purchaser to Supplier, Purchaser bears all design responsibility for the Product.

5.4. Disputes. If the Supplier disagrees with a claim that a Product does not conform to the warranty provided in Section 5.1, then the parties agree to submit the disputed Product to a mutually agreed-upon independent party to test the Product to determine whether it conforms. The cost of such testing shall be borne by the party against whom the testing party finds.

5.5. Limitation of Liability. EXCEPT FOR THE PARTIES' INDEMNIFICATION OBLIGATIONS UNDER SECTION 6 AND OBLIGATIONS OF CONFIDENTIALITY UNDER SECTION 9, NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY PUNITIVE, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, PERSONAL INJURY AND PROPERTY DAMAGE, EQUIPMENT DAMAGE, LOSS OF PROFITS OR REVENUES OR BUSINESS, COST OF CAPITAL, COST OF PURCHASE, COST OF RECALL, OR COST OF THIRD PARTY REPLACEMENT GOODS. IN NO EVENT SHALL PURCHASER'S TOTAL AGGREGATE LIABILITY UNDER THIS AGREEMENT, WHETHER BASED UPON CONTRACT, TORT, OR OTHERWISE EXCEED [*].

6. Indemnification.

6.1. By Supplier. Supplier agrees to indemnify and hold Purchaser, its affiliates, officers, directors, agents and employees ("Purchaser Indemnitees") harmless from and against all actions, liabilities, losses, damages, claims and demands whatsoever, including, but not limited to, attorney fees and other expenses ("Claims") that are brought or threatened against the Purchaser Indemnitees and related to Supplier's or Supplier Indemnitee's: (a) breach of this Agreement; (b) violation of applicable laws and regulations; (c) breach of representations and warranties; (d) any claim of Intellectual Property infringement brought by third parties arising from Supplier's manufacturing processes or Supplier's services provided hereunder, provided such infringement is not a direct result of specifications or instructions provided by Purchaser; or (e) negligence, recklessness or willful misconduct. The duty to indemnify will not apply to the extent that any Claim arises from the negligence, recklessness, or willful misconduct of a Purchaser Indemnitee.

6.2. By Purchaser. Purchaser agrees to indemnify and hold Supplier, its affiliates, officers, directors, agents and employees ("Supplier Indemnitees") harmless from and against all Claims that are brought or threatened against the Supplier Indemnitees and related to: (a) Purchaser's breach of this Agreement; (b) Purchaser's violation of applicable laws and regulations; (c) defects or alleged defects in the design of the Products, provided such design defects are a result of specifications or instructions provided by Purchaser; (d) infringement upon the Intellectual Property rights of third parties, provided such infringement is a direct result of specifications or instructions provided by Purchaser; or (e) Purchaser's negligence, recklessness or willful misconduct. The duty to indemnify will not apply to the extent that any Claim arises from the negligence, recklessness, or willful misconduct of a Supplier Indemnitee.

6.3. General. The party claiming indemnity (the "Indemnified Party") shall provide the party from whom indemnity is being sought (the "Indemnifying Party") with reasonable assistance, at the Indemnifying Party's expense, in connection with the defense of the claim for which indemnity is being sought. The Indemnifying Party shall have the right to assume sole control over the defense of such claim and conduct the defense of the claim with counsel of its choice. The Indemnifying Party shall not settle any claim without the prior written consent of the Indemnified Party, not to be unreasonably withheld, unless the settlement involves only the payment of money.

6.4. Insurance. Each party agrees to procure and maintain in full force and effect during the term of this Agreement collectible insurance policies in connection with the manufacture, supply and sale of Products pursuant to this Agreement and provide: (i) for commercial general liability coverage in the amount of [*] per occurrence and [*] in the aggregate, excluding Products and Completed Operations coverage and written on either an occurrence or a claims made basis; and (ii) Products and Completed Operations coverage in the amount of [*] per occurrence and [*] in the aggregate and written on a claims-made basis. Each party shall endeavor to provide the other party with thirty (30) days written notice of cancellation or ten (10) days' notice for non-payment of premium or termination of any such policy. Upon either party's request, the other party shall provide to the requesting party a certificate of insurance coverage.

7. License, Ownership; Tooling.

7.1. Limited License Grant. Purchaser grants Supplier a non-exclusive, nontransferable, worldwide license, without the right to sublicense, to use all designs, materials, information,

know-how and documentation, including the Specifications, provided by Purchaser to Supplier, solely in connection with manufacturing the Products hereunder for supply of such Products to Purchaser or parties designated by Purchaser. This license shall not include the right to modify, make derivative works of or improvements to the Products and shall terminated upon the termination or expiration of this Agreement.

7.2. Ownership of Intellectual Property. All Intellectual Property of Purchaser existing on or prior to the execution of this Agreement shall be and remain the property of Purchaser, and Supplier shall not acquire any rights therein, except as expressly provided in Section 7.1 of this Agreement or in the License Agreement. Purchaser shall own, and Supplier hereby assigns to Purchaser, all worldwide right, title and interest in and to the Products, all Intellectual Property conceived or reduced to practice by Supplier, its employees or agents in the course of performing Supplier's duties hereunder, or as a result of access to Purchaser's Intellectual Property, and any modification, derivative work of or improvement to the Products and/or Purchaser's Intellectual Property. All rights not expressly granted herein are reserved. Supplier shall execute all papers, including patent applications, invention assignments and copyright assignments, and otherwise shall assist Purchaser as reasonably required to perfect in the Purchaser the rights, title and other interests held by Purchaser under this Agreement. Purchaser shall pay for reasonable costs related to such assistance. If Purchaser is unable for any reason, after reasonable effort, to secure Supplier's signature on any document needed in connection with the actions specified above, Supplier hereby irrevocably designates and appoints Purchaser and its duly authorized officers and agents as its agent and attorney in fact, which appointment is coupled with an interest, to act for and in its behalf to execute, verify and file any such documents and to do all other lawfully permitted acts to further the purposes of the preceding paragraph with the same legal force and effect as if executed by Supplier. Notwithstanding anything contained in this Agreement to the contrary,

7.3. Tooling and Equipment. All tooling and equipment used by the Supplier to manufacture the Products shall be the property of the Supplier, unless any such tooling and equipment is specifically provided by the Purchaser or purchased by the Purchaser from the Supplier over and above the Purchase Price for the Products. The agreement of the parties concerning any tooling and equipment so provided or purchased by the Purchaser shall be set forth in a separate document that is agreeable to both parties.

8. Confidentiality; Publicity.

8.1. Confidentiality. The Purchaser and the Supplier will have access to each other's Confidential Information (as defined herein). "Confidential Information" means any trade secret, other information viewed by the party disclosing it (the "Disclosing Party") as confidential and/or proprietary, and any and all information or proprietary materials (in every form and media) not generally known in the relevant trade or industry made available by either party to the party receiving such information (in such case, the "Receiving Party") in connection with the efforts contemplated hereunder and which the Disclosing Party designates as confidential or may reasonably be understood as confidential, including, but not limited to (i) all Intellectual Property of either Party; (ii) existing or contemplated products, services, designs, inventions, technology, processes, technical data, engineering, techniques, methodologies and concepts and any information related thereto; and (iii) information relating to business plans, sales, consultants, employees, or marketing methods and customer lists or requirements. The Receiving Party will maintain the information in confidence using the same standard of care it uses to maintain its own Confidential Information in confidence, but in any case, no less than reasonable commercial diligence, and will not use such information for itself or others except as provided in this Agreement. Such obligation of confidentiality and non-use shall not apply to information which (a) is known to the Receiving Party prior to the disclosure as demonstrated by documentary evidence, (b) is publicly known as of the date of the

disclosure, (c) becomes publicly known after the date of disclosure through no fault of the Receiving Party, (d) is received by the Receiving Party from a third party who has, to the Receiving Party's knowledge, no obligation of confidentiality to the Disclosing Party, or (v) is developed independently by the Receiving Party without reference to the Disclosing Party's Confidential Information as demonstrated by documentary evidence. Such obligation of confidentiality and non-use shall survive any expiration or termination of this Agreement. The restrictions on disclosure contained in this Section 9.1 shall not apply to any information which is required to be disclosed by a valid court rule or governmental law or regulation, provided that the Receiving Party gives the Disclosing Party prompt notice of any such requirement and cooperates with the Disclosing Party, at the Disclosing Party's expense, in attempting to limit such disclosure and obtain confidential treatment thereof.

8.2. Publicity. Neither party will originate any publicity, news release, or other public announcement, written or oral, whether to the public, press or otherwise, relating to this Agreement or any amendment hereto or to performance hereunder or the existence of an arrangement between the parties, without the prior written approval of the other party, such approval not to be unreasonably withheld.

8.3. Use of Names in Promotions. Neither party shall use the name of the other for advertising or promotional claims without the prior written consent of the other party.

8.4. Damages Inadequate. The parties acknowledge that monetary damages may be an inadequate remedy for any breach by a party of its obligations under Section 9.1 and that the non-breaching party shall be entitled to seek injunctive relief and specific performance to enforce the breaching party's obligations, in addition to any other remedies the non-breaching party may be entitled to at law.

9. Term and Termination.

10.1. Term. Unless sooner terminated as provided in Section 10.2 below or in Section 12.6, this Agreement shall have a term commencing on the Effective Date and expiring the date three (3) years thereafter.

10.2. Termination. This Agreement may be terminated:

(i) upon written notice by either party to the other party, if the other party is in Default (as defined in Section 10.3 below);

(ii) By written notice from the Purchaser to the Supplier in accordance with Section 4; or

(iii) By either party upon twelve (12) months written notice to the other party.

10.3. Default. A party shall be in "Default" (i) if such party becomes the subject of a Bankruptcy Event; (ii) with respect to Purchaser, if Purchaser fails to make full payment of the Purchase Price when due and such failure continues for [*] after notification of non-payment by Supplier; or (iii) if such party breaches any other material provision of this Agreement and fails to remedy such default within [*] after receipt of written notice thereof, which notice shall state, with particularity, the grounds for such claimed default.

10.4. Effect of Termination. Upon any expiration or termination of this Agreement, each party shall either return to the other or destroy, upon the other party's request, all Confidential Information, Intellectual Property and any other proprietary materials of such requesting party. The provisions of Sections 4.6, 4.11, 4.17, 4.18, 5, 6, 7, 8, 9, 10.4, 11, and 12 shall survive any termination or expiration of this Agreement.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

10. Risk Management.

11.1. Contingency Plan. Supplier shall create and maintain a contingency plan to prevent an interruption of Product supply in the event that normal business is disrupted ("Contingency Plan"), which shall be approved in advance in writing by Purchaser. Changes to the Contingency Plan may not be made without Purchaser's prior written approval. Supplier will review the Contingency Plan on a semi-annual basis to ensure the necessary components remain in place. The Contingency Plan shall contain adequate provisions for each of the following:

a. Off-site storage for tools and tool drawings;

b. Raw material acquisition;

c. Back-up site(s) for manufacturing capability; and

d. Assurance that, given an interruption in the normal business process, Products could be produced within [*] of such interruption.

11. Miscellaneous.

11.1. Independent Contractor Status. The relationship between the Supplier and the Purchaser is that of independent contractors, and nothing contained herein shall be deemed to create a relationship of employer and employee, principal and agent, partners, or otherwise. Neither party shall have any authority to obligate the other in any respect nor hold itself out as having any such authority. All personnel of the Supplier shall be solely employees of the Supplier and shall not represent themselves as employees of the Purchaser, and all personnel of the Purchaser shall be solely employees of the Purchaser and shall not represent themselves as employees of the Supplier.

11.2. Assignment. Neither party may assign, delegate or subcontract its obligations without the other party's prior express written consent. Notwithstanding the foregoing, either party shall be permitted to assign all or part of this Agreement to a purchaser of all of, or the applicable portion of, such Party's business (whether through asset sale, merger, consolidation, reorganization or other form of transaction) with written notice to the other party, except that Supplier may not assign this Agreement to any party that competes with Purchaser.

11.3. Entire Agreement; Amendments. This Agreement is the full, complete, and exclusive agreement between the parties and supersedes and cancels any and all previous or contemporaneous agreements of whatever nature, whether written or oral, between them with respect to the matters covered herein. This Agreement may only be modified or amended in a writing signed by both parties.

11.4. Severability. In the event that any provision of this Agreement would be held in any jurisdiction to be invalid, prohibited or unenforceable for any reason, such provision, as to such jurisdiction, shall be ineffective, without invalidating the remaining provisions of this Agreement or affecting the validity or enforceability of such provision in any other jurisdiction. Notwithstanding the foregoing, if such provision could be more narrowly drawn so as not to be invalid, prohibited or unenforceable in such jurisdiction, it shall, as to such jurisdiction, be so narrowly drawn, without invalidating the remaining provisions of this Agreement or affecting the validity or enforceability of such provision in any other jurisdiction.

11.5. Remedies. Unless otherwise expressly provided, all remedies hereunder are cumulative, are in addition to any other remedies provided for by law and may, to the extent permitted by law, be exercised concurrently or separately, and the exercise of any one remedy shall not be deemed to be an election of such remedy or to preclude the exercise of any other remedy.

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11.6. Force Majeure. The obligations of the Supplier and the Purchaser hereunder (except for the Purchaser's obligations to make payment in full for Products) shall be subject to any delays or non-performance caused in whole or part by any contingency or event beyond either party's reasonable control, including, without limitation, any act of God; acts of any government or any agency or subdivision thereof; fire; strikes; war; machinery breakage; failure of a communications or internet provider; transportation delays; shortage of or inability to secure labor, fuel, energy, materials or supplies at reasonable prices or from regular sources; riots or acts of a public enemy; terrorist acts; and any existing or future laws or regulations with which Supplier, in its judgment and discretion, deems it advisable to comply as its legal duty. The party which is not performing its obligations under this Agreement as a result of an event of force majeure shall use diligent efforts to resume compliance with this Agreement as soon as possible. Should the event of force majeure continue unabated for a period of sixty (60) days or more, the party who's performance has not been delayed or prevented may terminate this Agreement upon notice to the other party.

11.7. Notices. Any notice, request, consent or communication (collectively, a "Notice") under this Agreement shall be effective if it is in writing and (i) personally delivered, (ii) sent by certified or registered mail, postage prepaid, return receipt requested, (iii) sent by an internationally recognized overnight delivery service, with delivery confirmed, or (iv) telexed or telecopied, with receipt confirmed, addressed as set forth in this Section or to such address as shall be furnished by either party hereto to the other party hereto. A Notice shall be deemed to have been given as of (a) the date when personally delivered, (b) when received if delivered by the United States Postal Service, certified or registered mail, properly addressed, return receipt requested, postage prepaid, or by overnight delivery service, or (c) immediately, upon confirmation of receipt of the telex or telecopy, as the case may be. All Notices shall specifically state: the provision (or provisions) of this Agreement with respect to which such Notice is given and shall be addressed as follows:

If to the Supplier:	If to the Purchaser:
Orchid MPS Holdings, LLC 1489 Cedar St. Holt, MI 48842 ATTN: VP Sales	SI-BONE, Inc. 3055 Olin Ave. Suite 2200 San Jose, CA 95128 ATTN: CFO

11.8. Permits and Compliance. Supplier agrees to procure all necessary permits or licenses and abide by all applicable laws, regulations and ordinances of the United States and of the state, territory and political subdivision in which the work under this Agreement is performed. Supplier hereby represents and warrants that it and its personnel: (i) are not currently excluded, debarred, or otherwise ineligible to participate in federal health care programs as defined in 42 U.S.C. § 1320a-7b(f) (the "Federal Health Care Programs"); (ii) are not convicted of a criminal offense related to providing health care items or services but have not yet been excluded, debarred, or otherwise declared ineligible to participate in the Federal Health Care Programs, and (iii) are not under investigation or otherwise aware of any circumstances that may result in being excluded, debarred, or otherwise declared to participate in Federal Health Care Programs

11.9. Governing Law. This Agreement will be governed by and constructed in accordance with the laws of California without regard to the conflicts of the law principles thereof. Any dispute between the Parties in relation to or in connection with this Agreement (including those relevant to the validity, construction, execution and termination of the same) shall be submitted to the exclusive jurisdiction of courts located in San Jose, Santa Clara County, California.

11.10. Waivers. The failure of either party to assert a right hereunder or to insist upon compliance with any term or condition of this Agreement shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other party.

11.11. Counterparts. This Agreement may be executed in any number of counterparts, and execution by each of the parties of any one of such counterparts will constitute due execution of this Agreement. Each such counterpart hereof shall be deemed to be an original instrument, and all such counterparts together shall constitute but one agreement.

11.12. Headings. The article and section headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

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[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date set forth beneath such person's name.

SI-BONE, INC.

/s/ Jeffrey W. Dunn
(Signature)

Jeffrey W. Dunn
(Print Name)

President, CEO
(Title)

Date April 20, 2016

ORCHID MPS HOLDINGS, LLC

/s/ Matthew K. Burba
(Signature)

Matthew K. Burba
(Print Name)

EVP, Operations
(Title)

Date 4/18/2016

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Addendum No. 1 to
Quality and Manufacturing Agreement by and between
Orchid MPS Holdings, LLC and SI-BONE, Inc.

This **Addendum No. 1 to Quality and Manufacturing Agreement** ("***Addendum No. 1***") evidences agreements between Orchid MPS Holdings, LLC together with its subsidiaries and affiliates on the one hand ("***Supplier***") and SI-BONE, Inc. and its subsidiaries and affiliates on the other hand ("***Purchaser***") and modifies and supplements that certain Quality and Manufacturing Agreement by and between the parties with an effective date of April 18, 2016 (the "***Original Agreement***", and together with this Addendum No. 1, the "***Agreement***"). This Addendum No. 1 is intended to, among other things, allow Supplier to hold a specified level of inventory to better support Purchaser's business. Capitalized terms used and not defined in this Addendum No. 1 shall have the meaning given them in the Original Agreement.

I. Interpretation. Should any conflict exist between this Addendum No. 1 and the Original Agreement, the terms of this Addendum No. 1 will control.

II. Supplier agrees to:

1) Hold the equivalent of [*] of machined implants and [*] of finished goods, in each case based on the then current Forecast. For purposes hereof, "machined implants" shall mean implants ready for TPS-coating and "finished goods" shall mean implants coated, packaged, sterilized and ready for shipment. Supplier will use [*] of the then current Forecast to make inventory determinations where [*] of finished goods inventory is required hereby. The inventory and lead time requirements set forth in this Addendum No. 1 shall apply only to items set forth on Schedule A.

2) Maintain a lead time not to exceed [*] for finished goods.

3) Hold pricing per Schedule A to the Amendment for at least one year from the date of this Addendum No. 1. Thereafter, price adjustments shall be subject to the mechanism set forth in Section 3.1 of the Original Agreement.

4) Keep purchaser informed of any significant changes in its business which could reasonably be foreseen to impact Supplier's inventory, lead time, volume limitations or any other aspect of its performance under the Original Agreement or this Addendum No. 1.

5) Not to assess any lot charges for one document change each [*]; thereafter, Supplier shall charge Purchaser only at its reasonable and customary hourly rates for engineering and other administrative time necessary to effectuate documentation changes.

6) Participate in [*] Kanban review meetings to discuss:

    a. Adding parts to the Original Agreement, provided there shall be no obligation on the part of Supplier to accept such additional parts;

    b. Removing parts from the Original Agreement; and

    c. Changing the levels held in inventory for various part numbers.

III. Purchaser agrees to:

1) Provide a rolling [*] Forecast by part number and month; Purchaser shall make good faith efforts to provide such Forecast with [*] detail.

2) Provide a blanket purchase order for the [*] Forecast no less than [*] prior to the first required delivery date.

3) Release against such blanket purchase order ("Orders" as described in the Original Agreement) shall be provided at least [*]. Such releases shall be in multiples of the bin size set forth on Schedule A to this Addendum No. 1.

4) Provide releases against the then current blanket order for any parts that remain in Supplier's Detroit inventory of finished goods for more than [*]; provided, however, that Purchaser shall have no obligation to purchase in excess of [*] worth of inventory based on the Forecast at the time of its original procurement by Supplier.

5) Purchase any inventory throughout Supplier's supply chain obsoleted by a revision change or obsoleting of a part, including packaging materials, at material cost (including Supplier's standard labor rates) unless assembly processing has been completed.

6) Participate in [*] Kanban review meetings to discuss:

   a. Adding parts to the Original Agreement, provided Purchaser shall have no obligation to add parts to the Original Agreement;

   b. Removing parts from the Original Agreement; and

   c. Changing the levels held in inventory for various part numbers.

IV. Miscellaneous.

1) Ratification. The parties take this opportunity to ratify the Original Agreement and confirm all of their respective obligations set forth therein, including the representations and warranties made to one another.

2) Severability. If any provision of the Original Agreement will be declared invalid, illegal or unenforceable, such provision will be severed and all remaining provisions will continue in full force and effect.

3) Entire Agreement. The Original Agreement, including this Addendum No. 1, is the full, complete, and exclusive agreement between the parties and supersedes and cancels any and all previous or contemporaneous agreements of whatever nature, whether written or oral, between Supplier and Purchaser and their respective subsidiaries and affiliates with respect to its subject matter. The Agreement may only be modified or amended in a writing signed by both parties. Subject headings are for convenience of reference only and will in no way affect interpretation of the Agreement.

4) Counterparts. This Addendum No. 1 may be executed in separate counterparts, and by facsimile, each of which will be deemed an original, and when executed separately or together, will constitute a single original instrument, effective in the same manner as if the parties had executed one and the same instrument.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

IN WITNESS WHEREOF, the parties have executed this Addendum No. 1 as of the date set forth beneath such person's name.

PURCHASER:	**SUPPLIER:**
SI-BONE, Inc.	**Orchid MPS Holdings, LLC**
By: /s/ Laura Francis	By: /s/ Patrick Davidson
Name: Laura Francis	Name: Patrick Davidson
Title: CFO	Title: General Manager
Dated: 3/1/2017	Dated: 3/1/2017

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Schedule A to Addendum No. 1
to
Quality and Manufacturing Agreement by and between Orchid MPS Holdings, LLC and SI-BONE, Inc.

Part Number	Price	Bin Size	Weeks Inventory (finished goods)	Weeks Inventory (machined)
[*]	[*]	[*]	[*]	[*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

MANUFACTURING, QUALITY AND SUPPLY AGREEMENT

THIS MANUFACTURING, QUALITY AND SUPPLY AGREEMENT ("***Agreement***") is entered into as of **January 31, 2017** (the "***Effective Date***"), between **SI-BONE, INC.**, a Delaware corporation having an address of 3055 Olin Ave., Ste. 2200, San Jose, CA 95128 (including its Affiliates, "***SI-BONE***") and **rms COMPANY** a Minnesota corporation having an address of 8600 Evergreen Blvd., Coon Rapids, MN 55433 ("***Supplier***").

RECITALS

WHEREAS, SI-BONE desires to engage the services of Supplier to perform the Manufacture of the Products (as those terms are defined below) for use and sale by SI-BONE, on the terms and conditions set forth below, and

WHEREAS, Supplier desires to perform Services for SI-BONE on the terms and conditions set forth below.

AGREEMENT

The parties, intending to be legally bound, agree as follows:

1. AGREEMENT TO SUPPLY; FORECASTS.

1.1 **Agreement to Supply**. Except as provided in this Agreement, during the Term Supplier shall supply on a non-exclusive basis and pursuant to this Agreement Product to SI-BONE to be sold, distributed or used otherwise as provided by SI-BONE. The parties acknowledge and agree that the accessories used in connection with the Product may be purchased by SI-BONE from Supplier or a third-party vendor or manufactured directly by, or otherwise obtained through, SI-BONE.

1.2 **Forecasts**. Within **ten days** after the Effective Date, SI-BONE shall deliver to Supplier a forecast of its requirements for the Product for each of the calendar quarters ending June 30, 20XX, September 30, 20XX, December 31, 20XX, and March 31, 20XX (with the period ending March 31, 2017 including the period starting with the Effective Date) (the "***Forecast***"). No later than **ten days** following the end of each [*] during the Term, SI-BONE shall update the Forecast in writing by providing to Supplier an updated Forecast for the following [*] (or such fewer number of [*] remaining in the Term). Except as provided in this Section 1.2, Forecasts shall be nonbinding and used and relied upon by Supplier only for Supplier's internal capacity planning purposes.

1.3 **Purchase Orders**. All purchases shall be pursuant to purchase orders submitted by SI-BONE to Supplier (an "***Order***"), which shall specify a delivery date no less than [*] after submission of the Order. SI-BONE shall submit Orders for the number of Products. If Supplier cannot satisfy such order, then Supplier shall provide written notice to SI-BONE no later than [*] after receipt of the Order specifying its alternative delivery date which may not be more than [*] after submission of the Order, unless otherwise agreed by the parties, provided that the Order quantities required are reasonably consistent with the current Forecast. An Order shall specify the Products ordered (including part numbers and revision levels if applicable), quantities of each Product ordered, price, requested delivery date and requested Product recipient, all of which shall be subject to Article 5. Orders may be changed only by the mutual written agreement of the parties.

1.4 **Vendors and Subcontractors**. Supplier shall not (i) change the vendors from whom Supplier sources components of the Products as of the Effective Date or (ii) subcontract its obligations to manufacture Products to subcontractors in each case without the prior written consent of SI-BONE;

provided, that SI-BONE hereby acknowledges its consent to Supplier's purchase of Product components from vendors identified in **Exhibit B** ("***Approved Vendors***") and use of subcontractors identified in **Exhibit C** ("***Approved Subcontractors***"). SI-BONE may order through Supplier components sourced from Supplier's approved vendors (which vendors may include affiliates of SI-BONE) and Supplier agrees to provide those components to SI-BONE at Supplier's cost [*]. Subject to the requirements of Section 4.7 of this Agreement, SI-BONE may request or otherwise require Supplier to approve and utilize alternative sources including the Approved Vendors and Approved Subcontractors.

2. PRICING AND PAYMENT TERMS.

2.1 During the Term, Supplier's sales price to SI-BONE for each Product unit shall be based on the forecasted estimated annual unit ("***EAU***") volumes of Product to be purchased by SI-BONE during the Term in accordance with the pricing described in **Exhibit A** (the "***Pricing Addendum***"). From time to time, the parties may mutually agree to add additional Products to this Agreement.

2.2 The pricing set forth in **Exhibit A** shall be firm for the Initial Term, as defined on the Pricing Addendum, unless the volumes vary from the forecasted EAU volume by more than [*] in either direction during the initial twelve months or during subsequent twelve month periods during the Term. In this case the Supplier or SI-BONE may request a price review based on the volume changes and the parties shall negotiate in good faith any price changes, with reference to changes in input costs and variance from EAU forecast, prior to implementation provided that there will not be more than [*]. If the parties are unable to agree on the change in pricing through a process of good faith negotiation, then either of the parties may terminate this Agreement provided that, if the Supplier terminates the Agreement, SI-BONE will have the option of making Last Purchase per Section 9.5. **Exhibit A** will be amended to reflect any mutually agreed changes to the pricing and/or EUA volumes. Supplier may also re-price the items listed in **Exhibit A** in accordance with Section 6 if there are any changes made by SI-BONE to the Specifications or materials which affect the unit costs.

2.3 Supplier will invoice SI-BONE for all quantities of Products delivered in accordance with this Agreement. Payment terms shall include a [*] discount to the Agreement price if paid within [*], and otherwise net cash [*], paid in US dollars from the date of SI-BONE's receipt of Supplier's invoice.

3. CAPACITY.

Supplier shall maintain capacity adequate to fulfill the Product requirements of SI-BONE as specified in the most recent [*] rolling Forecast. Supplier hereby agrees to give timely notice to SI-BONE of any event that would reasonably be expected to adversely affect Supplier's capacity. Without limiting Article 1, Supplier shall use commercially reasonable efforts to assure that adequate capacity is available to fulfill future Product requirements of SI-BONE (as determined by SI-BONE's then-current Forecast, historical purchasing patterns and written communications to Supplier regarding anticipated requirements). Supplier shall obtain and maintain all equipment and resources required to fulfill its obligations under this Agreement at Supplier's sole cost, unless such equipment or resources were purchased by Supplier exclusively to supply SI-BONE.

4. SPECIFICATIONS; QUALITY CONTROL MATTERS.

4.1 **Compliance with Laws**. The parties shall comply with all applicable federal, state and local statutes, regulations, rules, ordinances and policies that pertain to the activities for which Supplier and SI-BONE are responsible under this Agreement, including those enforced by the FDA. With respect to the Products, SI-BONE shall be the "finished device manufacturer" (as such term is used by the FDA).

4.2 **Specifications**. SI-BONE shall define the specifications for the product to be manufactured by Supplier, by way of drawings, reference to commercial specifications and standards (the "***Specifications***"), which shall be set forth on the applicable Pricing Addendum or Order and updated from time to time in accordance herewith. References to the initial Specifications for Product to be purchased hereunder are set forth on **Exhibit E** hereto and shall have been delivered to Supplier by or promptly following the Effective Date of this Agreement. The Specifications may be paper documents, electronic documents or other appropriate media. Supplier shall deliver the Product in full conformance to the Specifications. The parties may change the Specifications from time to time by mutual written agreement. A Product that does not conform with the Specifications and applicable laws at the time it is delivered to SI-BONE is referred to in this Agreement as a "***Nonconforming Product***," and such Product shall be regarded as having a "***Nonconformity***." SI-BONE may amend or modify the Specifications from time to time in accordance with Section 6 and shall give prompt written notice of such change(s) to the Supplier provided that Supplier will have the right to reasonably adjust the Product price to the extent that the changes made by SI-BONE affect the material, manufacturing or quality costs.

4.3 **Implementation of Quality Control and Risk Management Program**. At all times during the Term, Supplier shall comply with SI-BONE's vendor qualification requirements ("***Qualification Requirements***"), a copy of which has been provided to Supplier. In addition, Supplier shall maintain and comply with a quality control program that conforms with all applicable laws and is consistent with current good manufacturing practices applicable to Products ("***GMPs***") and as effective during the remainder of the Term and as required by any governmental or quasi-governmental agency having regulatory authority over the Products, including, without limitation, 21 CFR Part 820, the current released versions of ISO 13485 and 14971 (collectively, the "***Quality Management System***"). In addition, Supplier shall maintain a risk management system which is integrated into its Quality Management System (the "***RMS***"). Supplier shall notify SI-BONE of revisions to its manufacturing procedures to the extent necessary to remain in compliance with the Qualification Requirements, GMPs or RMS, as applicable, in accordance with this Section 4.3; provided, however, that Supplier may not make any changes to its manufacturing procedures that are inconsistent with the Specifications without the prior written consent of SI-BONE. Upon SI-BONE's request, Supplier will provide a copy of such quality agreement(s).

4.4 **Notification of Nonconformity**. Supplier agrees to promptly notify SI-BONE in writing after Supplier obtains knowledge of its delivery to SI-BONE of any Nonconforming Product. In addition to the foregoing, Supplier shall notify SI-BONE within (a) [*] of learning of any situation which may require a recall of Products and (b) [*] of obtaining knowledge of any failure of any batch of Products to meet the standards set forth in this Section 4.4.

4.5 **Acceptance; Remedy for Nonconforming Products**. All Products are subject to SI-BONE's inspection prior to acceptance. SI-BONE shall have [*] from delivery to reject Nonconforming Products. Upon detection of any Nonconformity, SI-BONE shall give written notice (which may be given by e-mail) to Supplier specifying the nature and type of alleged Nonconformity and Supplier will evaluate the alleged Nonconformity including samples of the Nonconforming Product if requested by the Supplier. Upon agreement between the parties that the Product is Nonconforming to the Specification, Supplier shall replace such Product free of charge, and Supplier shall cover expenses including freight, if any, in connection with (a) shipment of replacement Product to the same location and (b) shipment of the Nonconforming Product back to Supplier (if so requested by Supplier). In the absence of such agreement between the parties or if the Supplier is unable to

replace properly rejected Nonconforming Products within [*], SI-BONE may request a credit, or if payment has been made reimbursement for, the Nonconforming Product and may, at its discretion, discontinue the purchase of the Product from Supplier and terminate this Agreement.

4.6 **Latent Nonconformities**. Within the Warranty Period defined in 4.11, latent Nonconformities and Nonconformities not discovered by SI-BONE pursuant to Section 4.4 through the use of reasonable inspection methods and procedures will be reported to the Supplier by SI-BONE within [*] following detection of any Nonconformity specifying the nature and type of alleged Nonconformity. Supplier will evaluate the alleged Nonconformity including samples of the Nonconforming Product if requested by the Supplier. Upon agreement between the parties that the Product is Nonconforming to the Specification, Supplier will replace such Product free of charge, and Supplier shall cover expenses including freight, if any, in connection with (a) shipment of replacement Product to the same location and (b) shipment of the Nonconforming Product back to Supplier (if so requested by Supplier). In the absence of such agreement between the parties or if the Supplier is unable to replace properly rejected Nonconforming Products within [*], Supplier shall issue a credit if payment has already been made for the Nonconforming Product, and SI-BONE may, at its discretion, discontinue the purchase of the Product from Supplier and terminate this Agreement.

4.7 **Qualification of Approved Vendors and Approved Subcontractors**. When requested to do so by SI-BONE, or otherwise required to do so by this Agreement, Supplier shall utilize its Purchasing Control/Vendor Qualification processes and procedures in effect at the time, to qualify third party suppliers and/or third party manufacturers to manufacture and provide components, parts or sub-assemblies for the Product, or to manufacture and supply the Product to SI-BONE. Supplier may, but is not necessarily required to, qualify the Approved Vendors and Approved Subcontractors.

4.8 **Audits**. SI-BONE shall have the right, but not the obligation, at its expense, to audit, or have audited, Supplier's facilities, and plants that are used to manufacture and store the Products. Such audits will be conducted during Supplier's normal business hours by SI-BONE or its designee. Supplier shall issue a plan to determine the correction, cause, and corrective action for any negative finding of any audit report issued by SI-BONE within [*] of such audit report's issue date. Supplier shall facilitate SI-BONE, or its authorized representative, to perform audits of any third-party supplier's facilities, systems, documentation, and other requirements related to this Agreement at mutually agreed dates and times. Supplier, SI-BONE, any outside auditor, and such third-party supplier shall agree on reasonable methods to protect intellectual property, such as non-disclosure agreement or the like.

4.9 **Inspections**. Supplier shall promptly notify SI-BONE of any inspections, audits, formal visits, etc. of any regulator, notified body, or certification body acting in a formal capacity that are related directly to the Product. In the US this includes the Food and Drug Administration. Supplier shall promptly notify SI-BONE of any inspection or audit findings that impact the safety, effectiveness, conformity, or availability of Product Supplier provides to SI-BONE. Supplier agrees that SI-BONE's notified body may conduct unannounced audits of Supplier in accordance with Annex III of the 24 September 2013 Commission Recommendations, on the audits and assessments performed by notified bodies in the field of medical devices (2013/473/EU), provided that SI-BONE will be responsible for any out-of-pocket costs incurred by Supplier and associated with third party audits performed on SI-BONE's behalf.

4.10 **Insurance**. During the term and for [*] after termination for any reason, the Supplier shall maintain commercial general and product liability insurance adequate to cover any liability (including any alleged manufacturing defect or breach of warranty in Section 4.11) arising in connection with any Product manufactured by or on behalf of Supplier and supplied to SI-BONE

under this Agreement in coverage amounts consistent with normal business practices of prudent companies similarly situated. The insurance coverage shall in no event be less than [*] per loss and [*] in the aggregate. Supplier shall provide SI-BONE with written evidence of such insurance upon request. Supplier shall provide SI-BONE with written notice at least [*] prior to the cancellation, nonrenewal or material change in such insurance which materially adversely affects the scope or amount of such insurance coverage.

4.11 **Warranty**. Supplier represents and warrants that all Products will conform to the Specifications and will be free from defects in manufacture, workmanship and materials for a period of [*] ("***Warranty Period***") from the date of delivery. Except as otherwise specifically provided in this Section 4 and Section 11, whatever the basis for the claim, Suppliers obligations under this warranty are limited solely to the repair or replacement of Non-conforming Products. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES REGARDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, RELATING TO THE USE OR PERFORMANCE OF THE PARTS. No other express or implied warranty or guaranty shall bind Supplier. Supplier shall not be liable for its failure to conform with any requirements not adequately identified by SI-BONE in the specifications, or for personal injury or property damage, loss of revenue or profit, failure to realize savings or other benefits, expenditures for substitute goods or services, storage charges or other special, incidental or consequential damages caused by the use, misuse or inability to use the goods, regardless of the legal theory on which the claim is based and even if Supplier has been advised of the possibility of such damages. Without limiting the foregoing, SI-BONE assumes all risk and liability for loss, damage or injury to persons and property of SI-BONE or others arising out of use, misuse, or inability to use any goods sold by Supplier not caused directly by the willful acts or omissions of Supplier. This warranty shall not extend to anyone other than the SI-BONE and states SI-BONE's exclusive remedy. The foregoing sentence shall not be interpreted to limit Supplier's indemnification obligations set forth in Section 11 below. All claims under this warranty must be made within the Warranty Period.

4.12 **Process Improvements**. As required by 21 CFR Part 820 Sec. 820.50, Supplier shall not make significant changes to the Specifications, manufacturing process, tooling design, processing conditions, materials or manufacturing location of the Products without SI-BONE's prior written consent. Notwithstanding the foregoing, SI-BONE will consider in good faith reasonable written requests by Supplier to change the materials or manufacturing process of the Products, provided SI-BONE shall make final determination on such change(s) in its sole discretion.

4.13 **Complaint Handling and Adverse Event Reporting**. Each party shall cooperate fully with the other party in dealing with customer complaints concerning the Product(s) and shall take such action to promptly resolve such complaints as may be reasonably requested by the other party. SI-BONE is responsible for complying with all FDA and applicable foreign regulatory requirements pertaining to the receipt, review, evaluation, and where applicable, investigation of all complaints received pertaining to the Products, and for the reporting of adverse device events, including FDA's Medical Device Reporting requirements, codified at 21 C.F.R Part 803. Supplier shall reasonably cooperate with SI-BONE to enable SI-BONE to fulfill such requirements. Supplier shall promptly, but in no event more than [*] after receipt of such information, provide complaint information regarding the Products to SI-BONE.

5. PACKAGING; LABELING; DELIVERY.

5.1 **Packaging and Labeling**. Supplier shall be responsible for labeling and packaging Product for shipment to SI-BONE or to its designee(s), in accordance with applicable laws, SI-BONE requirements and instructions and the additional specifications included in the Specifications, which labeling shall include "Manufactured for SI-BONE." SI-BONE may request changes to the packaging and labeling requirements and Specifications upon reasonable prior written notice to

Supplier. To the extent that Supplier provides input on the Product labeling or Specifications, it is understood by the parties that such activity is not intended to make Supplier a "Specifications developer" or a "finished device manufacturer" as such terms are used by FDA. Supplier is responsible for release of product labeling, provided, however, that in the case of initial release of any new label or labeling change, Supplier shall obtain SI-BONE's consent to such release. SI-BONE is responsible for compliance with applicable FDA product labeling requirements.

5.2 **Delivery**. Supplier shall deliver Products by, and no more than [*] prior to, SI-BONE's requested dates of delivery indicated in the Order or as agreed between the Supplier and SI-BONE as indicated on the Supplier Order acknowledgement. Requested delivery dates may be changed only by mutual written agreement of the parties, which agreement shall not be unreasonably withheld or delayed. In the event that Supplier has reason to believe that it will be unable to meet the agreed upon delivery dates, Supplier will notify SI-BONE promptly and state the reasons for the anticipated delay. All shipments of Products pursuant to this Agreement shall be shipped by Supplier FOB Supplier's facility. Delivery shall be deemed to have occurred, and therefore risk of loss transferred from Supplier to SI-BONE, when Products are delivered to the freight forwarder.

5.3 **Packing**. Products shall be packed at Supplier's sole cost and expense in accordance with SI-BONE's reasonable written instructions and reasonable commercial practices. Each shipment of Product shall be clearly marked as per SI-BONE's instructions.

6. PRODUCT IMPROVEMENTS.

6.1 **General**. In the event that SI-BONE notifies Supplier that it desires to have Supplier incorporate changes or improvements to a Product to (a) address a Product defect, integrity, safety or quality concern or compliance matter (each a "***Required Improvement***") or (b) incorporate a feature enhancement or other improvement that is a not a Required Improvement (each an "***Optional Improvement***," and together with the Required Improvements, an "***Improvement***"), the parties shall promptly discuss in good faith the feasibility of implementing such Improvement.

6.2 **Implementation of Required Improvements**. Immediately following receipt of such a request from SI-BONE regarding a Required Improvement, Supplier shall use best efforts to implement the Required Improvement as soon as possible at SI-BONE's sole cost and shall provide reports regarding Supplier's implementation progress to SI-BONE upon SI-BONE's request. All such improvements shall be evaluated and implemented in accordance SI-BONE's applicable design control processes and procedures that are in effect at the time that the improvements are made. SI-BONE shall update the Design History File and Device Master Record, as applicable, and provide copies of such documentation to SI-BONE upon implementation of the Required Improvement. To the extent that Supplier provides input on Required Improvements and changes to the Specifications, it is understood by the parties that such activity does not intend to make Supplier a "Specifications Developer" or a "finished device manufacturer" as such terms are used by FDA. Supplier will have the right to reasonably adjust the Product price to the extent that the changes requested by SI-BONE affect the material, manufacturing or quality costs. In the event that any Required Improvements result in a change in costs to Supplier, the parties shall negotiate in good faith a pricing change commensurate with the change in costs. If the parties are unable to agree on the change in pricing, then either of the parties may terminate this Agreement provided that, if the Supplier terminates the Agreement, SI-BONE will have the option of making Last Purchase per Section 9.5.

6.3 **Implementation of Optional Improvements**. In evaluating and implementing Optional Improvements, Supplier shall use commercially reasonable efforts to minimize SI-BONE's cost of implementing the Optional Improvements. Supplier shall provide SI-BONE with a detailed analysis (together with supporting documentation) of the estimated costs (if any) and effect on the supply

price for the applicable Product (if any) of implementing such Optional Improvement. Supplier shall implement such Optional Improvement only with SI-BONE's prior written consent. If Supplier notifies SI-BONE that implementation of an Optional Improvement will require any modification to the pricing set forth on the Pricing Addendum or in the applicable Order and SI-BONE agrees, the parties will negotiate in good faith an appropriate modification to the pricing in an amendment to this Agreement. If the parties are unable to agree on the change in pricing, then Supplier may delay implementation of the Optional Improvement until a reasonable price change is agreed; provided, however, that if the parties are unable to agree on such reasonable change in pricing, SI-BONE will have the option of terminating this Agreement provided that this termination will not relieve SI-BONE of its obligations with respect to any open Orders or outstanding payments. All such improvements shall be evaluated and implemented in accordance with SI-BONE's applicable design control processes and procedures that are in effect at the time that the improvements are made. Supplier shall update the Design History File and Device Master Record, as applicable, and provide copies of such documentation to SI-BONE upon implementation of the Optional Improvement. To the extent that Supplier provides input on Optional Improvements and changes to the Specifications, it is understood by the parties that such activity does not intend to make Supplier a "Specifications Developer" or a "finished device manufacturer" as such terms are used by FDA.

6.4 **Regulatory Determination**. SI-BONE shall be responsible for making the final decision as to whether a proposed design or manufacturing change may be implemented for the Product(s). Supplier is not permitted to make any modification that affects the Product(s) without notifying SI-BONE. SI-BONE shall be responsible for making the final determination as to whether such changes require regulatory approval or clearance prior to implementation and shall be responsible for filing and obtaining any required approvals and/or clearances, as necessary.

6.5 **Registration and Listing**. Supplier shall comply with applicable establishment registration requirements of the US FDA applicable to the Products and the manufacture of the Products.

7. INTELLECTUAL PROPERTY.

7.1 **Limited License**. SI-BONE hereby grants Supplier a non-exclusive, nontransferable, worldwide license, without the right to sublicense, to use all designs, materials, information, know-how and documentation, including the Specifications, provided by SI-BONE to Supplier, solely in connection with manufacturing the Products hereunder for supply of such Products to SI-BONE or parties designated by SI-BONE. This license shall not include the right to modify, make derivative works of or improvements to the Products and shall terminate upon the termination or expiration of this Agreement. For purposes of this Agreement, "***Intellectual Property***" means any inventions, improvements, developments, or innovations (including all rights to patents, copyrights, trademarks, and trade secrets and know-how inherent therein and appurtenant thereto) and other creative works (whether or not patentable or copyrightable, conceived or made or reduced to practice), know-how, technical information, pending patent applications, registrations, divisions and continuations thereof, registered and unregistered copyrights, and all associated goodwill, designs, drawings, specifications, vendor lists, manufacturing methods and processes, and all other information pertinent to this Agreement, which is proprietary to SI-BONE. SI-BONE's Intellectual Property as of the date hereof includes, but is not limited to the list set forth on **Exhibit D**.

7.2 **Ownership of Intellectual Property**. All Intellectual Property of SI-BONE existing on or prior to the execution of this Agreement shall be and remain the property of SI-BONE, and Supplier shall not acquire any rights therein, except as expressly provided in Section 7.1 of this Agreement.

7.3 **Inventions**. All Intellectual Property conceived or reduced to practice by Supplier, its employees or agents in the course of performing Supplier's duties hereunder and related to the Products, or as a result of access to SI-BONE's Intellectual Property, shall be owned solely by SI-BONE and Supplier

agrees to irrevocably assign all of its interests in such Intellectual Property to SI-BONE. Supplier shall execute all papers, including patent applications, invention assignments and copyright assignments, and otherwise shall assist SI-BONE as reasonably required to perfect in SI-BONE the rights, title and other interests held by SI-BONE under this Agreement. SI-BONE shall pay for reasonable costs related to such assistance. If SI-BONE is unable for any reason, after reasonable effort, to secure Supplier's signature on any document needed in connection with the actions specified above, Supplier hereby irrevocably designates and appoints SI-BONE and its duly authorized officers and agents as its agent and attorney in fact, which appointment is coupled with an interest, to act for and in its behalf to execute, verify and file any such documents and to do all other lawfully permitted acts to further the purposes of the preceding paragraph with the same legal force and effect as if executed by Supplier.

7.4 **Trade Names**. Each of SI-BONE and Supplier hereby acknowledges and agrees that it does not have, and shall not acquire, any interest in the other party's trademarks except as expressly provided herein. Any violation of this Section 7 shall constitute a material breach of this Agreement.

8. NON-INTERFERENCE.

During the Term of this Agreement and for a period of [*] thereafter (the "***Restricted Period***"), neither party shall, directly or indirectly, solicit for hiring, hire or accept any services or work from the other party's employees or consultants. This restriction shall not apply to employees responding to commercially reasonable employment advertisements in common national or regional recruiting media. The parties further agree that during the Restricted Period, the parties shall not in any way discourage any of the other party's clients, customers or distributors or prospective clients, customers or distributors from purchasing products, or solicit or influence or attempt to solicit or influence any client, customer, distributor or other person, either directly or indirectly, to direct any purchase of products to any other entity in competition with the business of the other party.

9. TERM; TERMINATION.

9.1 **Term; Renewal**. Unless earlier terminated in accordance with this Section 9, the term of this Agreement shall commence on the Effective Date and continue for an initial term of **three years** (the "***Initial Term***"). This Agreement shall automatically renew for successive **one year** periods (each, a "***Renewal Term***" and collectively, together with Initial Term, the "***Term***") unless terminated by either party with [*] written notice prior to the beginning of such Renewal Term.

9.2 **Material Breach**. Either party may terminate this Agreement in the event the other party commits a material breach of this Agreement and has not cured such breach within [*] of written notice thereof from the non-breaching party.

9.3 **Termination by SI-BONE**. SI-BONE may terminate this Agreement upon written notice to Supplier:

a. if Supplier fails to deliver a shipment of conforming Products in the quantities and within [*] of the mutually agreed delivery date for a SI-BONE Order submitted in accordance with this Agreement and such failure results in a delay or Product backorder of an aggregate total (together with any other delays during the same Supply Period) of more than [*] (a "***Supply Failure***");

b. if Supplier changes the site of manufacture of any Products to a site that has not been previously approved by SI-BONE in writing;

c. in the event of a Change in Control of Supplier or Supplier sells all or substantially all of its assets relating to the manufacturing of the Products; or

d. if Supplier breaches Section 8 hereof (Non-Interference Covenant).

9.4 **Insolvency**. Either party may terminate this Agreement if the other party files, or has filed against it, a petition for voluntary or involuntary bankruptcy or pursuant to any other insolvency law, or the other party makes or seeks to make a general assignment for the benefit of its creditors or applies for or consents to the appointment of a trustee, receiver or custodian for it or a substantial part of its property, and, in the case of an involuntary bankruptcy, such situation is not cured within [*] from its occurrence, such termination to take effect upon delivery of notice of termination to the other party.

9.5 **Last Purchase.** If this agreement is terminated by SI-BONE in accordance with 9.3, SI-BONE will have the option of placing a last purchase with the Supplier equal to the amount of the demand for up to a [*] period based on the then current forecast and unit prices, to be delivered by the Supplier within a mutually agreed upon time frame or a maximum of [*].

9.6 **Effect of Termination**. Immediately upon expiration or termination of this Agreement, Supplier will discontinue manufacturing the Products and the license under Section 7.1 shall terminate; provided, that expiration or termination of this Agreement shall not relieve the parties of any obligation accruing prior of such expiration or termination. Upon termination or expiration of this Agreement, SI-BONE shall take delivery of and pay for all Products under any Order outstanding as of the date of termination only in the event of a termination by SI-BONE under Section 9.1 unless SI-BONE terminated the Agreement for cause, and Supplier will (i) fulfill all Orders submitted to Supplier prior to the effective date of termination and (ii) promptly return all SI-BONE documentation and property in Supplier's possession.

9.7 **Survival**. All of the representations, warranties, and indemnifications made in this Agreement, and all terms and provisions hereof intended to be observed and performed by the parties after the termination hereof, including Sections 4.1, 4.3, 4.4, 4.5, 4.6, 4.8, 4.9, 4.10, 4.11, 4.13, 7.2, 7.3, 7.4, 8, 9, 10, 11 and 12 shall survive such termination and continue thereafter in full force and effect, subject to applicable statutes of limitations.

10. CONFIDENTIALITY; PUBLICITY.

10.1 **Confidential and Proprietary Information**. SI-BONE and the Supplier will have access to each other's Confidential and Proprietary Information. "***Confidential and Proprietary Information***" means any trade secret as defined by the Uniform Trade Secrets Act ("***Trade Secret***"), other information viewed by the party disclosing it (the "***Disclosing Party***") as confidential and/or proprietary, and any and all information or proprietary materials (in every form and media) not generally known in the relevant trade or industry made available by either party to the party receiving such information (in such case, the "***Receiving Party***") in connection with the efforts contemplated hereunder and which the Disclosing Party designates as confidential or may reasonably be understood as confidential, including, but not limited to (i) all Intellectual Property of either party; (ii) existing or contemplated products, services, designs, inventions, technology, processes, technical data, engineering, techniques, methodologies and concepts and any information related thereto; and (iii) information relating to business plans, sales, consultants, employees, or marketing methods and customer lists or requirements. The Receiving Party will maintain the information in confidence using the same standard of care it uses to maintain its own Confidential and Proprietary Information in confidence, but in any case, no less than reasonable commercial diligence, and will not use such information for itself or others except as provided in this Agreement. Such obligation of confidentiality and non-use shall not apply to information which (a) is known to the Receiving Party prior to the disclosure as demonstrated by documentary evidence, (b) is publicly known as of the date of the disclosure, (c) becomes publicly known after the date of disclosure through no fault of the Receiving Party, (d) is received by the Receiving Party from a

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

third party who has, to the Receiving Party's knowledge, no obligation of confidentiality to the Disclosing Party, or (v) is developed independently by the Receiving Party without reference to the Disclosing Party's Confidential and Proprietary Information as demonstrated by documentary evidence. Such obligation of confidentiality and non-use shall survive any expiration or termination of this Agreement for a period of [*]; *provided*, *however*, that such restrictions shall survive indefinitely, or until public disclosure of the secret occurs through no fault or breach of the other party, for any information which is Trade Secret information of a party. The restrictions on disclosure contained in this Section 10.1 shall not apply to any information which is required to be disclosed by a valid court order or governmental law or regulation, provided that the Receiving Party gives the Disclosing Party prompt notice of any such requirement and cooperates with the Disclosing Party, at the Disclosing Party's expense, in attempting to limit such disclosure and obtain confidential treatment thereof.

10.2 **Misuse of Confidential and Proprietary Information**. Each party understands and agrees that this provision prohibits it from rendering services to another party to the extent that such party would use, disclose, or rely upon the other party's trade secrets in the course of rendering such services or use disclose or rely upon Confidential and Proprietary Information in any way other than for the other party's benefit and in the furtherance of the objectives of this Agreement.

10.3 **Publicity**. Except as otherwise provided in this Agreement or required by Law, neither party shall use the other's name or refer to it directly or indirectly in an advertisement, news release or release to any professional or trade publication without written approval from such party, which approval may not be unreasonably withheld or delayed. Neither party shall use the name of the other for advertising or promotional claims without the prior written consent of the other party.

10.4 **Damages Inadequate**. The parties acknowledge that monetary damages may be an inadequate remedy for any breach by a party of its obligations under this Section 10 and that the non-breaching party shall be entitled to seek injunctive relief and specific performance to enforce the breaching party's obligations, in addition to any other remedies the non-breaching party may be entitled to at law.

11. REMEDIES; INDEMNIFICATION.

11.1 **Remedies for Nonconforming Products**. In addition to any other remedies available to SI-BONE at law, in equity or hereunder, in the event Supplier delivers Nonconforming Products to SI-BONE, SI-BONE may select, and Supplier shall provide, one of the following remedies: (a) the refund of the purchase price of the Nonconforming Products, (b) replacement with Products that conform to the Specifications, or (c) the cost of reconditioning or reworking any Nonconforming Products to conform in all material respects with the Specifications.

11.2 **Indemnification by Supplier**. Supplier agrees to indemnify, defend and hold SI-BONE, its affiliates, officers, directors, agents and employees ("***SI-BONE Indemnitees***") harmless from and against all actions, liabilities, damages, claims and demands whatsoever, including, but not limited to, reasonable attorney fees and other expenses ("***Claims***") that are brought or threatened against the SI-BONE Indemnitees and related to Supplier's or Supplier Indemnitee's: (a) breach of this Agreement; (b) violation of applicable laws and regulations; (c) breach of representations and warranties; (d) any claim of Intellectual Property infringement brought by third parties as a direct result of Supplier's manufacturing processes or Supplier's services provided hereunder, provided such infringement is not a direct result of the Specifications provided by SI-BONE; or (e) gross negligence, recklessness or willful misconduct. The duty to indemnify will not apply to the extent that any Loss arises from the gross negligence, recklessness, or willful misconduct of a SI-BONE Indemnitee or SI-BONE's breach of this Agreement.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

11.3 **Indemnification by SI-BONE**. SI-BONE agrees to indemnify, defend and hold Supplier, its affiliates, officers, directors, agents and employees ("***Supplier Indemnitees***") harmless from and against all Claims that are brought or threatened against the Supplier Indemnitees and related to: (a) SI-BONE's breach of this Agreement; (b) SI-BONE's violation of applicable laws and regulations; (c) defects or alleged defects in the design of the Products, provided such design defects are a result of specifications or instructions provided by SI-BONE and not Supplier's manufacturing process; (d) infringement upon the Intellectual Property rights of third parties, provided such infringement is a direct result of the Specifications or instructions provided by SI-BONE; or (e) SI-BONE's gross negligence, recklessness or willful misconduct. The duty to indemnify will not apply to the extent that any Claim arises from the gross negligence, recklessness, or willful misconduct of a Supplier Indemnitee or Supplier's breach of this Agreement.

11.4 **Indemnification Procedure**. The party claiming indemnity (the "***Indemnified Party***") shall provide the party from whom indemnity is being sought (the "***Indemnifying Party***") with reasonable assistance, at the Indemnifying Party's expense, in connection with the defense of the claim for which indemnity is being sought. The Indemnifying Party shall have the right to assume sole control over the defense of such claim and conduct the defense of the claim with counsel of its choice. The Indemnifying Party shall not settle any claim without the prior written consent of the Indemnified Party, not to be unreasonably withheld, unless the settlement involves only the payment of money.

11.5 **Limitations of Damages**. Notwithstanding anything to the contrary contained in this Agreement, neither party shall be liable to the other party or its Affiliates (except with respect to either party's breach of its obligations of Article 10, or indemnification obligations of Section 11.2 or 11.3 with respect to third party claims) for any indirect, special, incidental (including, without limitation, lost profits) or punitive damages of the other party or its Affiliates from any breach or default of a party's obligations hereunder or the breach of any representation or warranty made hereunder. Except with respect to either party's breach of its obligations of Article 10, or indemnification obligations of Section 11.2 or 11.3 with respect to third party claims, the collective liability of either party to the other under this Agreement shall be limited on an aggregate basis (not per claim or occurrence) to [*], except that with respect to damages or liabilities [*]. Upon payment(s) by the they indemnifying party to the indemnified party Supplier and/or Supplier Indemnitees to the SI-BONE and/or SI-BONE Indemnitees, or payment(s) by SI-BONE and/or the SI-BONE Indemnitees to Supplier and/or the Supplier Indemnitees, the party having made such payments shall be relieved and discharged from any further liability to the other party and/or its Indemnitees under this Agreement, or otherwise for contribution or to defend, indemnify, and/or hold harmless the other party and/or its Indemnitees .

12. MISCELLANEOUS.

12.1 **Assignment; Binding Effect**. This Agreement shall not be assignable or otherwise transferable by Supplier without the prior written consent of SI-BONE and shall be binding upon and inure to the benefit of the parties and their respective successors and permitted assigns. This Agreement shall not be assignable or otherwise transferable by SI-BONE without the prior written consent of Supplier, provided that SI-BONE may assign this Agreement to any Affiliate of SI-BONE without Supplier's consent or in connection with a merger, acquisition or sale of the stock of, or all or substantially all of the assets of, SI-BONE. Notwithstanding anything in this Agreement, the parties acknowledge and agree that SI-BONE may perform its obligations under this Agreement through an Affiliate of SI-BONE.

12.2 **Notices**. All notices, requests, claims, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given (a) when received if delivered personally, including by recognized overnight delivery service, (b) when transmitted by facsimile or electronic

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mail (email), with confirmation of successful transmission, provided that such delivery is followed by physical delivery, (c) upon receipt, if sent by registered or certified mail (postage prepaid, return receipt requested) and (d) the next business day after it is sent, if sent for next-day delivery to a domestic address by overnight mail or courier, to the parties at the following addresses:

If to SI-BONE, to:	SI-BONE, Inc. 3055 Olin Ave. Suite 2200 San Jose, CA 95128 ATTN: CFO legal@si-bone.com
If to Supplier, to:	rms Company 8600 Evergreen Blvd. Coon Rapids, MN 55433 ATTN: Director of Sales

provided, *however*, that if any party shall have designated a different address by notice to the others, then to the last address so designated.

12.3 **Severability**. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction or other authority to be invalid, void, unenforceable or against its regulatory policy such determination shall not affect the enforceability of any others or of the remainder of this Agreement; and in connection with such term, provision, covenant or restriction of this Agreement which is held invalid, void, unenforceable or against regulatory policy, the parties shall negotiate in good faith with a view to the substitution therefor of a suitable and equitable solution in order to carry out, so far as may be valid and enforceable, the intent and purpose of such invalid term, provision, covenant or restriction and, absent any agreement by the parties, such court of competent jurisdiction or other authority shall substitute therefore such term, provision, covenant or restriction as is legal, valid and enforceable but otherwise similar to the invalid term, provision, covenant or restriction.

12.4 **Entire Agreement**. This Agreement may not be amended, supplemented or otherwise modified except by an instrument in writing signed by SI-BONE and Supplier. This Agreement contains the entire agreement of the parties hereto with respect to its subject matter, superseding all negotiations, prior discussions and preliminary agreements made prior to the date hereof.

12.5 **No Third-Party Beneficiaries**. This Agreement is solely for the benefit of the parties hereto and their respective Affiliates and no provision of this Agreement shall be deemed to confer upon any third parties (other than permitted assigns) any remedy, claim, liability, reimbursement, claim of action or other right in excess of those existing without reference to this Agreement.

12.6 **Waiver**. The failure of any party to enforce any condition or part of this Agreement at any time shall not be construed as a waiver of that condition or part, nor shall it forfeit any rights to future enforcement thereof.

12.7 **Governing Law; Jurisdiction**. This Agreement (including any claim or controversy arising out of or relating to this Agreement) shall be governed by the law of the State of Delaware without regard to conflict of law principles that would result in the application of any Law other than the Laws of the State of Delaware. Any proceeding to interpret or enforce this Agreement will be brought exclusively in the state and federal courts situated in the state of Delaware.

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12.8 **Injunctive Relief**. The parties acknowledge that damages would be an inadequate remedy for any material breach of Sections 7, 8, or 10. Accordingly, notwithstanding anything to the contrary in this Agreement, either party will have the right to obtain injunctive relief in any court of competent jurisdiction to enforce Sections 7, 8, or 10 in the event of a party's failure to perform its obligations thereunder, as well as the right to pursue any and all other rights and remedies available at law or in equity for such a breach. The breaching party hereby expressly waives the defense that a remedy in damages will be adequate and any requirement in an action for specific performance or injunction for the posting of a bond by the party seeking injunctive relief.

12.9 **Counterparts**. This Agreement may be executed manually or by facsimile by the parties, in any number of counterparts, each of which shall be considered one and the same agreement and shall become effective when a counterpart hereof shall have been signed by each of the parties and delivered to each of the other parties.

12.10 **Construction**. The language in all parts of this Agreement shall be construed, in all cases, according to its fair meaning. The parties acknowledge that each party and its counsel have reviewed and revised this Agreement and that any rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement.

12.11 **Other Terms and Conditions**. Other terms and conditions not inconsistent with terms and conditions in this Agreement covering Products to be supplied under this Agreement will be provided in Orders by SI-BONE and in order acknowledgments and invoices issued by Supplier. In the event of any conflict of terms in these documents, SI-BONE and Supplier agree to negotiate in good faith to resolve such differences, unless such terms conflict with the terms of this Agreement, in which case the terms of this Agreement shall control.

12.12 **Further Assurances**. SI-BONE and Supplier covenant and agree that subsequent to the execution and delivery of this Agreement and without any additional consideration, each of SI-BONE and Supplier shall execute and deliver any further legal instruments and perform such acts which are or may become necessary to effectuate the purposes of this Agreement.

12.13 **Relationship**. Supplier is an independent contractor engaged by SI-BONE for the provision of the Products. Nothing in this Agreement shall constitute either party as an employee, agent or general representative of the other, nor shall either SI-BONE or Supplier have the right or authority to assume, create or incur any liability or any obligation of any kind, express or implied, against, or in the name of or on behalf of, the other.

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IN WITNESS WHEREOF, the parties hereto have caused this Manufacturing, Quality and Supply Agreement to be executed by their respective duly authorized officers as of the date set forth below their names.

By:	/s/ Laura Francis	By:	/s/ Richard Riddle
Name:	Laura Francis	Name:	Richard Riddle
Title:	Chief Financial Officer	Title:	Director of Sales
Date:	2/1/2017	Date:	2/1/2017

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EXHIBIT A

PRICING ADDENDUM

[*]

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EXHIBIT B

APPROVED VENDORS

[*]

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EXHIBIT C

APPROVED SUBCONTRACTORS

[*]

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EXHIBIT D

INTELLECTUAL PROPERTY

[*]

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EXHIBIT E

PRODUCT SPECIFICATIONS

Item	Part Number	Document Title	Document Type
[*]	[*]	[*]	[*]

Note: Future revision updates to be applied through mutual signed agreement of both parties through the change control process.

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Addendum No. 1 to
Quality and Manufacturing Agreement by and
between rms COMPANY and SI-BONE, Inc.

This **Addendum No. 1 to Quality and Manufacturing Agreement** ("***Addendum No. 1***") is entered into between rms COMPANY ("***Supplier***") and SI-BONE, Inc. ("***SI-BONE***") and modifies and supplements that certain Manufacturing, Quality and Supply Agreement by and between the parties with an effective date of January 31, 2017 (the "***Original Agreement***", and together with this Addendum No. 1, the "***Agreement***"). This Addendum No. 1 is intended to, among other things, allow Supplier to hold a specified level of inventory to better support SI-BONE's business. Capitalized terms used and not defined in this Addendum No. 1 shall have the meaning given them in the Original Agreement.

I. **Amendment.** The following provisions of the Original Agreement are amended and restated in their entirety as set forth below:

a. Section 1.2 of the Original Agreement is hereby amended and restated as set forth below:

"1.2 Forecasts. Within ten days after the Effective Date, SI-BONE shall deliver to Supplier a forecast of its requirements for the Product for each of the calendar quarters ending June 30, 20XX, September 30, 20XX, December 31, 20XX, and March 31, 20XX (with the period ending March 31, 2017 including the period starting with the Effective Date) (the "***Forecast***"). Such Forecast shall include requirements for Product by part number (as set forth on Schedule A to this Addendum No. 1) and by calendar month for the applicable period, and at the elected of SI-BONE, by calendar week. No later than ten days following the end of each [*] during the Term, SI-BONE shall update the Forecast in writing by providing to Supplier an updated Forecast for the following [*] (or such fewer number of [*] remaining in the Term). Except as provided in this Section 1.2 and this Addendum No. 1, Forecasts shall be nonbinding and used and relied upon by Supplier only for Supplier's internal capacity planning purposes."

b. Section 1.3 of the Original Agreement is hereby amended and restated as set forth below:

"**1.3 Purchase Orders**. SI-BONE shall deliver to Supplier a blanket purchase order for all Product specified in each Forecast no later than [*] prior to the first anticipated delivery date of any Product under such Forecast (a "***Blanket PO***") for the purpose of Supplier's maintenance of Inventory (as defined in Section 1.5 below). All purchases shall be pursuant to purchase orders submitted by SI-BONE to Supplier (an "***Order***"), which, other than Orders made against the Blanket PO (a '***Drawdown Order***"), shall specify a delivery date no less than [***]** after submission of the Order, provided that any Drawdown Order shall specify a deliver date no less than [***]** after submission of such Order. SI-BONE shall submit Orders for the number of Products. If Supplier cannot satisfy any Order that is not a Drawdown Order, then Supplier shall provide written notice to SI- BONE no later than [***]** after receipt of the Order specifying its alternative delivery date which may not be more than [***]** after submission of the Order, unless otherwise agreed by the parties, provided that the Order quantities required are reasonably consistent with the current Forecast. SI- BONE shall deliver Drawdown Orders to Supplier on a monthly basis and any Product ordered pursuant to such Drawdown Order shall be based on the minimum release lot sizes as

set forth on Schedule A to this Addendum No. 1. Any Product ordered pursuant to a Drawdown Order shall be shipped within [*] of Supplier's receipt of such Drawdown Order. An Order shall specify the Products ordered (including part numbers and revision levels if applicable), quantities of each Product ordered, price, requested delivery date and requested Product recipient, all of which shall be subject to Article 5. Orders may be changed only by the mutual written agreement of the parties."

c. The Original Agreement is hereby amended to include the following Section 1.5:

"**1.5 Inventory**. Supplier shall maintain available Inventory of "machined Product" and "finished Product", in each case based on the then current Forecast, for delivery pursuant to Sections 1.3 and 5.2, as set forth on Schedule A to this Addendum No. 1. For purposes hereof, (i) "machined Products" shall mean Product additively manufactured and machined but unpackaged, and (ii) "finished Products" shall mean machined additively manufactured Product, packaged and sterilized pursuant to the Agreement. The terms "machined Products" and "finished Products" are collectively referred to here as "Inventory". Supplier and SI-BONE agree to meet on a quarterly basis for the purpose of adding or removing Products, or adjusting Inventory levels of the Products, listed on Schedule A. In the event Supplier maintains any "finished Product" in Inventory for more than [*], upon notice from Supplier of such event, SI-BONE shall deliver a Drawdown Order against any such "finished Product", provided, however, that SI-BONE shall have no obligation to purchase in excess of [*] of Inventory based on the original Forecast delivered to Supplier. Supplier shall be solely responsible for maintaining sufficient Inventory to satisfy the delivery requirements under the Agreement and for any loss, damage or replacement to any Inventory."

d. The second sentence of Section 4.3 of the Original Agreement is hereby amended and restated as set forth below:

"Supplier shall maintain and comply with a quality control program that conforms with all applicable laws and is consistent with current good manufacturing practices applicable to Products ("***GMPs***") and as effective during the remainder of the Term and as required by any governmental or quasigovernmental agency having regulatory authority over the Products, including, without limitation, 21 CFR Part 820, the current released versions of ISO 13485 and 14971, and shall establish and maintain procedures for identifying with a control number each unit, lot, or batch of "finished Products" and where appropriate components of such "finished Products" (collectively, the "***Quality Management System***")."

e. Section 5.2 of the Original Agreement is hereby amended and restated as set forth below:

"5.2 Delivery. Supplier shall deliver Products by, and no more than [*] prior to, SIBONE's requested dates of delivery indicated in the Order or as agreed between the Supplier and SIBONE as indicated on the Supplier Order acknowledgement, *provided however,* Products ordered pursuant to any Drawdown Order shall be shipped within [*] of Supplier's receipt of such Drawdown Order. Requested delivery dates may be changed only by mutual written agreement of the parties, which agreement shall not be unreasonably withheld or delayed. In the event that Supplier has reason to believe that it will be unable to meet the agreed upon delivery dates, Supplier will notify SI-BONE promptly and state the reasons for the anticipated delay. All shipments of Products pursuant to this Agreement shall be shipped by Supplier FOB Supplier's facility. Delivery shall be deemed to have occurred, and therefore risk of loss transferred from Supplier to SI-BONE, when Products are delivered to the freight forwarder. All Product ordered pursuant to a Drawdown Order from Inventory shall be shipped in a "first in – first out" basis in order minimize the amount of time any Product is maintained by Supplier in Inventory."

II. Miscellaneous.

1) Severability. If any provision of the Original Agreement, including this Addendum No. 1, will be declared invalid, illegal or unenforceable, such provision will be severed and all remaining provisions will continue in full force and effect.

2) Entire Agreement. The Original Agreement, including this Addendum No. 1, is the full, complete, and exclusive agreement between the parties and supersedes and cancels any and all previous or contemporaneous agreements of whatever nature, whether written or oral, between Supplier and SI-BONE and their respective subsidiaries and affiliates with respect to its subject matter. The Original Agreement, including this Addendum No. 1, may only be modified or amended in writing signed by both parties. Subject headings are for convenience of reference only and will in no way affect interpretation of the Original Agreement.

3) Counterparts. This Addendum No. 1 may be executed in separate counterparts, and by facsimile, each of which will be deemed an original, and when executed separately or together, will constitute a single original instrument, effective in the same manner as if the parties had executed one and the same instrument.

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IN WITNESS WHEREOF, the parties have executed this Addendum No. 1 as of the date set forth beneath such person's name.

SI-BONE:	**SUPPLIER:**
SI-BONE, Inc.	**rms Company**
By: /s/ Laura Francis	By: /s/ Richard S. Riddle
Name: Laura Francis	Name: Richard S. Riddle
Title: Chief Financial Officer	Title: Director of Sales
Dated: July 7, 2017	Dated: July 6, 2017

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Schedule A to Addendum No. 1

Part Number	Minimum Release Lot Size	Weeks Inventory (finished Products)	Weeks Inventory (machined Products)
[*]	[*]	[*]	[*]

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Exhibit 10.7

SI-BONE, INC.
SUITE 1F
20045 STEVENS CREEK BLVD
CUPERTINO, CA 95014

December 15, 2009

Jeffrey W. Dunn
[Address intentionally omitted.]

Dear Jeff,

SI-BONE, Inc. (the "Company") is pleased to offer you employment on the following terms. In consideration for receiving this offer of employment, you acknowledge and agree that, effective as of January 1, 2010, the consulting agreement between you and the Company is terminated and of no further force and effect.

1. **Position**. Your initial title will be President and CEO, and you will initially report to the Company's Board of Directors. While you render services to the Company, you will not engage in any other employment, consulting or other business activity (whether full-time or part-time) that would create a conflict of interest with the Company. By signing this letter agreement, you confirm to the Company that you have no contractual commitments or other legal obligations that would prohibit you from performing your duties for the Company.

2. **Cash Compensation**. The Company will pay you a starting salary at the rate of $360,000 per year, payable in accordance with the Company's standard payroll schedule. This salary will be subject to adjustment pursuant to the Company's employee compensation policies in effect from time to time.

3. **Employee Benefits**. As a regular employee of the Company, you will be eligible to participate in a number of Company-sponsored benefits. In addition, you will be entitled to paid vacation in accordance with the Company's vacation policy, as in effect from time to time.

4. **Equity**. On June 20, 2009 and October 7, 2009, the Company's Board of Directors granted you options to purchase 1,668,963 shares of the Company's Series 1 Common Stock and 953,693 shares of the Company's Series 1 Common Stock, respectively (the "Options"). The Options are subject to the terms and conditions applicable to options granted under the Company's 2008 Stock Plan (the "Plan"), as described in the Plan and the applicable Stock Option Agreements.

5. **Severance Benefits**.

A. General. If you are subject to an Involuntary Termination, then you will be entitled to the benefits described in this Section 5. However, this Section 5 will not apply unless you (i) have returned all Company property in your possession, (ii) have resigned as a member of the Boards of Directors of the Company and all of its subsidiaries, to the extent applicable, and (iii) have executed a general release of all claims that you may have against the Company or persons affiliated with the Company. The release must be in the form prescribed by the Company, without alterations. You must execute and return the release on or before the date specified by the Company in the prescribed form (the "Release Deadline"). The Release Deadline will in no event be later than 60 days after your Separation. If you fail to return the release on or before the Release Deadline, or if you revoke the release, then you will not be entitled to the benefits described in this Section 5.

B. Salary Continuation. If you are subject to an Involuntary Termination, then the Company will continue to pay your base salary for a period of 12 months after your Separation. Your base salary will be paid at the rate in effect at the time of your Separation and in accordance with the Company's standard payroll procedures. The salary continuation payments will commence within 30 days after the Release Deadline and, once they commence, will be retroactive to the date of your Separation.

C. COBRA. If you are subject to an Involuntary Termination and you elect to continue your health insurance coverage under the Consolidated Omnibus Budget Reconciliation Act ("COBRA") following your Separation, then the Company will pay the same portion of your monthly premium under COBRA as it pays for active employees until the earliest of (i) the close of the 12-month period following your Separation, (ii) the expiration of your continuation coverage under COBRA or (iii) the date when you become eligible for substantially equivalent health insurance coverage in connection with new employment or self-employment.

"Cause" means (a) your unauthorized use or disclosure of the Company's confidential information or trade secrets, which use or disclosure causes material harm to the Company, (b) your material breach of any agreement between you and the Company, (c) your material failure to comply with the Company's written policies or rules, (d) your conviction of, or your plea of "guilty" or "no contest" to, a felony under the laws of the United States or any State, (e) your gross negligence or willful misconduct, (f) your continuing failure to perform assigned duties after receiving written notification of the failure from the Company's Board of Directors or (g) your failure to cooperate in good faith with a governmental or internal investigation of the Company or its directors, officers or employees, if the Company has requested your cooperation.

"Change in Control" means (a) the consummation of a merger or consolidation of the Company with or into another entity or (b) the dissolution, liquidation or winding up of the Company. The foregoing notwithstanding, a merger or consolidation of the Company does not constitute a "Change in Control" if immediately after the merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of the continuing or surviving entity, will be owned by the persons

who were the Company's stockholders immediately prior to the merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to the merger or consolidation.

"Good Reason" means that you resign within 12 months after one of the following conditions has come into existence without your consent:

1. A reduction in your base salary by more than 10%;
2. A change in your position with the Company that materially reduces your level of authority or responsibility; or
3. A relocation of your principal workplace by more than 30 miles.

A condition will not be considered "Good Reason" unless you give the Company written notice of the condition within 90 days after the condition comes into existence and the Company fails to remedy the condition within 30 days after receiving your written notice.

"Involuntary Termination" means a Separation resulting from either (a) your involuntary discharge by the Company for reasons other than Cause or Permanent Disability or (b) within 12 months after a Change in Control of the Company, your voluntary resignation for Good Reason.

"Permanent Disability" means that you are unable to perform the essential functions of your position, with or without reasonable accommodation, for a period of at least 120 consecutive days because of a physical or mental impairment.

"Separation" means a "separation from service," as defined in the regulations under Section 409A of the Internal Revenue Code of 1986, as amended (the "Code")

6. **Proprietary Information and Inventions Agreement**. Like all Company employees, you will be required, as a condition of your employment with the Company, to sign the Company's standard Proprietary Information and Inventions Agreement, a copy of which is attached hereto as **Exhibit A**.

7. **Employment Relationship**. Employment with the Company is for no specific period of time. Your employment with the Company will be "at will," meaning that either you or the Company may terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this letter agreement. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at will" nature of your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company (other than you).

8. **Tax Matters**.

(a) **Withholding**. All forms of compensation referred to in this letter agreement are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law.

(b) **Section 409A**. For purposes of Section 409A of the Code, each salary continuation payment under Section 5(b) is hereby designated as a separate payment. If the Company determines that you are a "specified employee" under Section 409A(a)(2)(B)(i) of the Code at the time of your Separation, then (i) the salary continuation payments under Section 5(b), to the extent that they are subject to Section 409A of the Code, will commence during the seventh month after your Separation and (ii) the installments that otherwise would have been paid during the first six months after your Separation will be paid in a lump sum when the salary continuation payments commence.

(c) **Tax Advice**. You are encouraged to obtain your own tax advice regarding your compensation from the Company. You agree that the Company does not have a duty to design its compensation policies in a manner that minimizes your tax liabilities, and you will not make any claim against the Company or its Board of Directors related to tax liabilities arising from your compensation.

9. **Interpretation, Amendment and Enforcement**. This letter agreement and Exhibit A constitute the complete agreement between you and the Company, contain all of the terms of your employment with the Company and supersede any prior agreements, representations or understandings (whether written, oral or implied) between you and the Company, including the Consulting Agreement. This letter agreement may not be amended or modified, except by an express written agreement signed by both you and a duly authorized officer of the Company. The terms of this letter agreement and the resolution of any disputes as to the meaning, effect, performance or validity of this letter agreement or arising out of, related to, or in any way connected with, this letter agreement, your employment with the Company or any other relationship between you and the Company (the "Disputes") will be governed by California law. excluding laws relating to conflicts or choice of law. You and the Company submit to the exclusive personal jurisdiction of the federal and state courts located in Santa Clara County in connection with any Dispute or any claim related to any Dispute.

* * * * *

We hope that you will accept our offer to join the Company. You may indicate your agreement with these terms and accept this offer by signing and dating both the enclosed duplicate original of this letter agreement and the enclosed Proprietary Information and Inventions Agreement and returning them to me. This offer, if not accepted, will expire at the close of business on December 25, 2009. As required by law, your employment with the Company is contingent upon your providing legal proof of your identity and authorization to work in the United States. Your employment is also contingent upon your starting work with the Company on January 1, 2010.

If you have any questions, please do not hesitate to contact me.

Very truly yours,

SI-BONE, Inc.

By: /s/ Ted Davis
Title: Ted Davis, BOD Member on behalf of the Board of Directors

I have read and accept this employment offer:

/s/ Jeffrey W. Dunn
Signature of Jeffrey W. Dunn

Dated: 12.30.09

Attachment

Exhibit A: Proprietary Information and Inventions Agreement

SI-BONE, INC.
3055 OLIN AVENUE, SUITE 2200
SAN JOSE, CA 95128

February 19, 2015

Michael A. Pisetsky
[Address intentionally omitted.]

RE: Employment Offer

Dear Michael:

We are pleased to offer you the position of Director, Legal effective March 2, 2015. We believe that you will bring great value to SI-BONE Inc., and that your knowledge, skills and experience will be an asset to the Company and will offer a mutually beneficial opportunity. We are excited about you joining our team and hope that you will accept our offer.

Position. Your title will be Director, Legal. This is a full time, exempt position. You will report directly to Bert Johnson, VP, General Counsel, Chief Compliance Officer.

Cash Compensation. The Company will pay you a base semi-monthly salary of $7,291.67 equivalent to a yearly amount of $175,000, subject to applicable withholdings. SI-BONE paydays are semi-monthly. Based on your level, you will also be eligible under the 2015 Bonus Plan to receive up to an additional 20% of your base salary based on the achievement of certain corporate and individual goals. This Bonus Plan will be available to you in your first full quarter with the Company and beyond. Reasonable and customary business expenses, including the IRS mandated rate for business automobile mileage, will be reimbursed to you by the Company.

Relocation Allowance. The Company will provide you with reasonable relocation assistance to aid in your move. The relocation reimbursement package offered will be available during the first thirty days of your employment. SI-BONE, Inc. will fund actual, reasonable and customary moving expenses (e.g. flights and shipment of household goods) that are submitted for reimbursement up to a maximum of $10,000. You must be fully relocated by April 1, 2015.

Stock Options. You are also eligible to participate in the Company's Stock Option Plan. Subject to the approval of the Company's Board of Directors, you will be granted an initial option to purchase 65,000 shares of the Company's Common Stock. The Board will determine the per-share exercise price when the option is granted. The option will be subject to the terms and conditions set forth in the Company's 2008 Stock Plan and in the applicable Stock Option Agreement. You will vest in 25% of the option shares after 12 months of continuous service, and the balance will vest in equal monthly installments over the next 36 months of continuous service as described in the Stock Option Agreement.

Employee Benefits. As a regular employee of the Company, you will be eligible to participate in a number of Company-sponsored benefits. Participation in the Company's Benefits Program is effective on the first day of the month following your date of hire. Human Resources will give you detailed benefits information during your New Hire Orientation.

Proprietary Information and Inventions Agreement. Your employment is contingent upon your agreement to the terms and signing the Company's Proprietary Information and Inventions Agreement ("PIIA"), attached. The PIIA must be signed and returned prior to the effective date of your employment.

Employment Relationship. Please keep in mind that your employment with SI-BONE is at-will. This means that you are free to terminate your employment with SI-BONE at any time, with or without cause or advance notice. Likewise, SI-BONE has the right to terminate your employment, or otherwise discipline, transfer or demote you at any time, with or without cause, and with or without notice. No one other than the Company CEO or CFO can alter this at-will arrangement and any such agreement must be in writing and must be signed by you and either the CEO or CFO.

Employment Eligibility Verification. Pursuant to the Immigration and Nationality Act, the Company is required to verify the identity and employment eligibility of all new hires. In order to comply with this legal obligation, we can only hire those individuals who are eligible to work in the United States. As a condition of employment, you will be required to provide documents verifying your identity and your eligibility to work in the United States; and to complete an Employment Eligibility Verification form I-9 within three (3) business days from your hire date. To verify your identity, we have enclosed a list of acceptable documents for the 1-9 which you will complete at the New Hire Orientation. Please note that you will need to bring either (i) one document from List A or (ii) one document from List B and one document from List C. If you anticipate having difficulty producing the required documents, please contact the Human Resources department at (408) 207-0700.

To accept this offer, please sign in the space provided below, and return the signed letter to me by close of business on Friday, February 20, 2015.

This employment offer is also contingent upon your starting work with the Company on March 2, 2015, the completion of an application for employment, satisfactory references and background checks.

We look forward to you joining the Company and hope that you find your employment with the Company enjoyable and professionally rewarding.

If you have any questions, please call me at 408-207-0700.

Very truly yours,

SI-BONE, Inc.

By: /s/ Agape Eleftheriadis
Agape Eleftheriadis
Title: Human Resources Director

I have read and accept this employment offer:

Michael Andrew Pisetsky
Printed Name of Employee

/s/ Michael Andrew Pisetsky
Signature of Employee

February 19, 2015
Date

Attachment:

Proprietary Information and Inventions Agreement (PIIA)

SI-BONE® | iFuse Implant System®

SI-BONE, INC.
3055 OLIN AVENUE, SUITE 2200
SAN JOSE, CA 95128

June 20, 2016

Michael Pisetsky
[Address intentionally omitted.]

RE: Change of Terms and Conditions of Employment

Dear Mike:

We are pleased to offer you the position of Vice President of Legal, Corporate Secretary and General Counsel with SI-BONE, Inc. ("SI-BONE" or "the Company") starting August 1, 2016. In this role, you will report directly to Laura Francis, Chief Financial Officer. As of August 1, 2016, the Company will pay you a semi-monthly base salary of $9,375.00, equivalent to a yearly base of $225,000, subject to applicable withholdings. You will also be eligible to receive up to an additional 30% of your base salary under the Company's 2016 Bonus Plan ("the Bonus Plan") based upon the achievement of certain corporate and individual goals in accordance with the terms and conditions of the Bonus Plan.

Subject to the approval of the Company's Board of Directors at its next meeting, you will be granted an option to purchase an additional 635,030 shares[1] of the Company's Common Stock with an exercise price equal to the fair market value of our Common Stock on the date of grant as determined by the Board of Directors. The shares will vest in equal monthly installments over the 48 months following the date of grant. The option will be subject to the terms and conditions set forth in our 2008 Stock Option Plan and the applicable Stock Option Agreement. In addition, we will recommend to the Company's Board of Directors that all shares subject to options held by you will include provisions permitting early exercise, including amendment of prior option grants to the extent necessary.

Your employment with SI-BONE remains at-will. This means that you are free to terminate your employment with SI-BONE at any time, with or without cause or advance notice. Likewise, SI-BONE has the right to terminate your employment, or otherwise discipline, transfer or demote you at any time, with or without cause, and with or without notice. No one other than the Company's CEO can alter this at-will arrangement and any such agreement must be in writing and must be signed by you and the CEO.

Notwithstanding the foregoing, and without any impact upon the at-will nature of your employment, you will be eligible to receive the severance benefits outlined on Exhibit A to this letter.

Except as is expressly set forth in this letter, the remainder of the terms and conditions of your employment, including those outlined in the offer letter between you and the Company dated February 19, 2015 and the mutual covenants set forth in the Proprietary Information and Inventions Agreement between you and the Company that you signed on February 19, 2015 will remain in full force and effect. To acknowledge receipt and acceptance of this letter and Exhibit A, please sign and date both documents and return them to me on or before June 22, 2016.

We look forward having you undertake this role, which we hope you will find enjoyable and professionally rewarding.

[1] This number of option shares includes the option shares you would have otherwise been eligible to receive in connection with the Series 7 employee refresh grants.

If you have any questions, please let me know.

Very truly yours,
SI-BONE, Inc.

By: /s/ Laura Francis
Laura Francis
Title: Chief Financial Officer

I have read and accept the terms set forth above:

Michael Andrew Pisetsky
Printed Name of Employee

/s/ Michael Andrew Pisetsky
Signature of Employee

June 20, 2016
Date

Attachment:

Exhibit A

Exhibit A

This exhibit contains terms and conditions pertaining to separation payments and benefits that SI-BONE, Inc. ("the Company") is offering to you.

1. **Benefits upon Separation from Employment – No Change in Control**. In the event the Company terminates your employment for any reason other than for Cause (as defined below), the Company will tender to you the following benefits (collectively, the "Severance Benefits") within sixty (60) calendar days of the termination date:

    a. A lump-sum payment equal to three (3) months of your then-current base salary; and

    b. A lump-sum payment in the amount of $1,900.00.

2. **Benefits upon Separation from Employment Prior to or Following a Change in Control**. Notwithstanding the foregoing, in the event the Company terminates your employment for any reason other than Cause or if you resign your employment for Good Reason either three (3) months prior to or twelve (12) months following the consummation of a Change in Control, the Company will tender to you the following benefits (collectively, "the Change in Control Severance Benefits") within sixty (60) calendar days of the termination date:

    a. A lump-sum equal to six (6) months of your then-current base salary;

    b. A lump-sum payment in the amount of $3,700.00;

    c. Accelerated vesting of any unvested Company stock options such that 100% of your unvested option shares shall vest as of your termination date; and

    d. A lump-sum equal to your target annual bonus, prorated for partial months of service prior to your separation date.

3. **Definitions**. The following definitions apply to this Exhibit A:

    a. Change of Control: (i) the consummation of a merger or consolidation of the Company with or into another entity; or (ii) the dissolution, liquidation or winding up of the Company. The foregoing notwithstanding, a merger or consolidation of the Company does not constitute a "Change in Control" if immediately after the merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of the continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to the merger or consolidation.

    b. Cause: (i) acts or omissions constituting gross negligence, recklessness or willful misconduct on your part with respect to your obligations or otherwise relating to Company business; (ii) your material breach of this agreement or the Company's Proprietary Information and Inventions Agreement; (iii) your conviction of, entry of or a plea of *nolo contendere* to fraud, misappropriation or embezzlement, or any felony or crime of moral turpitude; (iv) your willful neglect of duties as determined in the sole and exclusive discretion of the Company's Chief Executive Officer or Board of Directors; (v) your failure to perform the essential functions of your position, with or without a reasonable accommodation, due to a mental or physical disability; or (vi) your death.

c. Good Reason: the occurrence of one or more of the following without your express written consent: (i) a reduction in your base salary by more than 10%; (ii) a material diminution of your authority, duties or responsibilities; or (iii) relocation of your principal workplace by more than thirty (30) miles. A condition shall not be considered "Good Reason" unless you give the Company written notice of such condition within ninety (90) days after such condition comes into existence and the Company fails to remedy such condition within thirty (30) days after receiving your written notice.

4. **Contingencies for Receipt of Separation Payment(s)**. Your receipt of the Severance Benefits or the Change in Control Severance Benefits will be contingent upon the following: (a) your return of all Company property in your possession; (b) if applicable, your resignation from your position as a member of the Company's Board of Directors and the Board of Directors of any Company subsidiary; (c) your continued adherence to the terms and conditions of the Proprietary Information and Inventions Agreement between you and the Company, including without limitation the ongoing obligations following the termination of your employment set forth in that agreement; and (d) your execution and non-revocation of a standard form release of claims against the Company in a form proscribed by the Company.

5. **Tax Matters**.

a. Withholding. All benefits referred to in this Exhibit will be subject to applicable tax withholding and deductions.

b. IRC Section 280G Payments. In the event that the Severance Benefits and/or the Change in Control Severance Benefits constitute an "excess parachute payment" under the Sections 280G and 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), the Severance Benefits and/or Change in Control Severance Benefits shall be reduced to the maximum amount that does not trigger the excise tax provisions of the Code unless, in the Company's determination, you would receive greater post-tax payments and benefits in the absence of such reduction.

c. Section 409A. If the Company determines that you are a "specified employee" under Section 409(a)(2)(B)(i) of the Code as such definition shall apply as of your termination date, then, to the extent that any portion of the Severance Benefits and/or Change in Control Severance Benefits are subject to Section 409A of the Code, those payments shall be tendered to you (or your estate) on the first business day following the earlier of: (i) six (6) months following your separation date; or (ii) the date of your death.

d. No Tax Advice. Notwithstanding the foregoing, by your signature below you agree and acknowledge that the Company does not have a duty to tender to you tax advice and has no duty to design compensation policies to minimize your tax liabilities.

6. **At-Will Employment**. Your employment with the Company remains at-will, which means that either you or the Company may end your employment at any time, with or without reason, notice, or cause.

7. **Miscellaneous**. This Exhibit A expressly supersedes and replaces any prior agreements, representations or understandings, written or oral or express or implied, between you and the Company as to the subject matter herein. This Exhibit A may only be modified or amended in a writing signed by both you and a duly-authorized Company officer or member of the Board of Directors. This Exhibit A will bind the heirs, personal representatives, successors and assigns of both you and the Company, and will inure to the benefit of both you and the Company, and your/its heirs, successors and assigns.

If any provision of this Exhibit A is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this agreement and the provision in question will be modified to be rendered enforceable.

To signify your acceptance of these terms and conditions, please sign and return a copy of this Exhibit A to me on or before June 22, 2016.

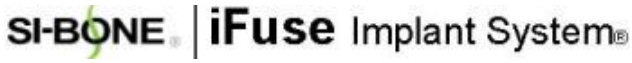
Signed:

Agape Eleftheriadis
Director, Human Resources
SI-BONE, Inc.

ACCEPTED AND AGREED TO:

/s/ Michael Pisetsky
Michael Pisetsky

Date Signed: June 20, 2016



SI-BONE, INC.
3055 OLIN AVENUE, SUITE 2200
SAN JOSE, CA 95128

April 27, 2015

Laura A. Francis
[Address intentionally omitted.]

RE: Employment Offer

Dear Laura:

We are pleased to offer you the position of Chief Financial Officer effective May 26, 2015. We believe that you will bring great value to SI-BONE Inc., and that your knowledge, skills and experience will be an asset to the Company and will offer a mutually beneficial opportunity. We are excited about you joining our team and hope that you will accept our offer.

Position. Your title will be Chief Financial Officer. This is a full time, exempt position. You will report directly to Jeff Dunn, President and CEO.

Cash Compensation. The Company will pay you a base semi-monthly salary of $12,083.34, equivalent to a yearly amount of $290,000, subject to applicable withholdings. This salary will be subject to adjustment pursuant to the Company's employee compensation policies in effect from time to time. SI-BONE paydays are semi-monthly. Based on your level, you will be also be eligible under the 2015 Bonus Plan to receive up to an additional 35% of your base salary based on the achievement of certain corporate and individual goals. This Bonus Plan is available to you in your first full quarter with the Company and beyond.

Stock Options. You are also eligible to participate in the Company's Stock Option Plan. Subject to the approval of the Company's Board of Directors, you will be granted an option to purchase a number of shares of the Company's Common Stock equal to 1.25% of the Company's fully diluted capitalization as of your first day of employment. The Board will determine the per-share exercise price when the option is granted. The option will be subject to the terms and conditions set forth in the Company's 2008 Stock Plan and in the applicable Stock Option Agreement. You will vest in 25% of the option shares after 12 months of continuous service, and the balance will vest in equal monthly installments over the next 36 months of continuous service, as described in the Stock Option Agreement. You will vest in 50% of the remaining unvested option shares if (a) the Company is subject to a Change in Control before your service with the Company terminates and (b) you are subject to an Involuntary Termination within 12 months after that Change in Control.

For the purposes of this letter, Change in Control is defined as (i) the consummation of a merger or consolidation of the Company with or into another entity or (ii) the dissolution, liquidation or winding up of the Company. The foregoing notwithstanding, a merger or consolidation of the Company does not constitute a "Change in Control" if immediately after the merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of the continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to the merger or consolidation.

For purposes of this letter, Involuntary Termination is defined as the termination of your service by reason of: (i) your involuntary discharge by the Company (or the parent or subsidiary employing you) for reasons other than Cause (as defined under "Severance Benefits" below); or (ii) your voluntary resignation for Good Reason.

For purposes of this letter, Good Reason is defined as your resignation within 12 months after one of the following conditions has come into existence without your consent: (i) a reduction in your base salary by more than 10%; (ii) a material diminution of your authority, duties or responsibilities; or (iii) a relocation of your

principal workplace by more than 30 miles. A condition shall not be considered "Good Reason" unless you give the Company written notice of such condition within 90 days after such condition comes into existence and the Company fails to remedy such condition within 30 days after receiving your written notice.

Severance Benefits. In the event that you experience a Separation as a result of a termination of your employment by the Company for any reason other than for Cause, and provided that you (i) have returned all Company property in your possession and (ii) have executed a general release of all claims that you may have against the Company or persons affiliated with the Company, in the form prescribed by the Company then the Company will tender to you a lump-sum payment equal to three months of your then-current base salary, less tax withholding. Such payment will be made to you within 60 days after your Separation, but only if you have returned the release on or before the date specified in such release (which will in no event be later than 50 days after your Separation) and the release has become effective; however, if such 60-day period spans two calendar years, then the payment will be made in the second calendar year. For the purposes of this letter, Cause is defined as: (a) acts or omissions constituting gross negligence, recklessness or willful misconduct on your part with respect to your obligations or otherwise relating to Company business; (b) your material breach of this Agreement or the Company's Proprietary Information and Inventions Agreement (c) your conviction of entry of or a plea of *nolo contendere* to fraud, misappropriation or embezzlement, or any felony or crime of moral turpitude; (d) your willful neglect of duties as determined in the sale and exclusive discretion of the Company's CEO or Board of Directors; (e) your failure to perform the essential functions of your position, with or without a reasonable accommodation, due to a mental or physical disability; or (f) your death. For purposes of this letter, Separation is defined as a "separation from service," as defined in the regulations under Section 409A of the Internal Revenue Code of 1986, as amended (the "Code"). If the Company determines that you are a "specified employee" under Section 409A(a)(2)(B)(i) of the Code at the time of your Separation, then (i) the severance payment under this paragraph, to the extent that it is subject to Section 409A of the Code, will be paid on the first business day following (A) expiration of the six-month period measured from your Separation or (B) the date of your death.

Employee Benefits. As a regular employee of the Company, you will be eligible to participate in a number of Company-sponsored benefits. Participation in the Company's Benefits Program is effective on the first day of the month following your date of hire. Human Resources will give you detailed benefits information during your New Hire Orientation.

Proprietary Information and Inventions Agreement. Your employment is contingent upon your agreement to the terms and signing the Company's Proprietary Information and Inventions Agreement ("PIIA"), attached. The PIIA must be signed and returned prior to the effective date of your employment.

Employment Relationship. Please keep in mind that your employment with SI-BONE is at-will. This means that you are free to terminate your employment with SI-BONE at any time, with or without cause or advance notice. Likewise, SI-BONE has the right to terminate your employment, or otherwise discipline, transfer or demote you at any time, with or without cause, and with or without notice. This is the full and complete agreement between you and the Company on this term, and any contrary representations that may have been made to you are superseded by this letter. No one other than the Company CEO can alter this at-will arrangement and any such agreement must be in writing and must be signed by you and the CEO.

Tax Matters. All forms of compensation referred to in this letter are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law. You are encouraged to obtain your own tax advice regarding your compensation from the Company. You agree that the Company does not have a duty to design its compensation policies in a manner that minimizes your tax liabilities, and you will not make any claim against the Company or its Board of Directors related to tax liabilities arising from your compensation.

Miscellaneous. While you render services to the Company, you will not engage in any other employment, consulting or other business activity (whether full-time or part-time) that would create a conflict of interest with the Company. By signing this letter, you confirm to the Company that you have no contractual commitments or other legal obligations that would prohibit you from performing your duties for the Company. This letter and the PIIA supersede and replace any prior agreements, representations or understandings (whether written, oral,

|implied or otherwise) between you and the Company and constitute the complete agreement between you and the Company regarding the subject matter set forth herein. This letter may not be amended or modified, except by an express written agreement signed by both you and a duly authorized officer of the Company. The terms of this letter and the resolution of any disputes as to the meaning, effect, performance or validity of this letter or arising out of, related to, or in any way connected with, this letter, your employment with the Company or any other relationship between you and the Company (the "Disputes") will be governed by California law, excluding laws relating to conflicts or choice of law. You and the Company submit to the exclusive personal jurisdiction of the federal and state courts located in Santa Clara County, California in connection with any Dispute or any claim related to any Dispute.

Employment Eligibility Verification. Pursuant to the immigration and Nationality Act, the Company is required to verify the identity and employment eligibility of all new hires. In order to comply with this legal obligation, we can only hire those individuals who are eligible to work in the United States. As a condition of employment, you will be required to provide documents verifying your identity and your eligibility to work in the United States; and to complete an Employment Eligibility Verification form I-9 within three (3) business days from your hire date. To verify your identity, we have enclosed a list of acceptable documents for the I-9 which you will complete at the New Hire Orientation. Please note that you will need to bring either (i) one document from List A or (ii) one document from List B and one document from List C. If you anticipate having difficulty producing the required documents, please contact the Human Resources department at (408) 207-0700.

To accept this offer, please sign in the space provided below, and return the signed letter to me by close of business on April 30, 2015.

This employment offer is also contingent upon your starting work with the Company on May 26, 2015, and the completion of an application for employment, satisfactory references and background checks.

We look forward to you joining the Company and hope that you find your employment with the Company enjoyable and professionally rewarding.

If you have any questions, please call me at 408-207-0700.

Very truly yours,
SI-BONE, Inc.

By: /s/ Jeff W. Dunn
Jeff W. Dunn

Title: President and CEO

I have read and accept this employment offer:

/s/ Laura Francis
Printed Name of Employee

Laura Francis
Signature of Employee

4/28/15
Date

Attachment
Proprietary Information and Inventions Agreement (PIIA)

Confidential and Proprietary

March 15, 2016

Ms. Laura A. Francis
[Address intentionally omitted.]

Re: Severance

Dear Laura:

This letter contains terms and conditions pertaining to separation payments and benefits that SI-BONE, Inc. ("the Company") is offering to you.

1. **Benefits upon Separation from Employment - No Change in Control**. In the event that the Company terminates your employment for any reason other than for Cause (as defined below), the Company will tender to you the following benefits (collectively, the "Severance Benefits") within sixty (60) calendar days of the termination date:

    a. A lump-sum payment equal to three (3) months of your then-current base salary; and

    b. A lump-sum payment in the amount of $5,700.00

2. **Benefits upon Separation from Employment Prior to or Following a Change in Control**. Notwithstanding the foregoing, in the event the Company terminates your employment for any reason other than for Cause or if you resign your employment for Good Reason either three (3) months prior to or twelve (12) months following the consummation of a Change in Control, the Company will tender to you the following benefits (collectively, "the Change in Control Severance Benefits") within sixty (60) calendar days of the termination date:

    a. A lump-sum payment equal to six (6) months of your then-current base salary;

    b. A lump-sum payment in the amount of $11,300.00;

    c. Accelerated vesting of any unvested Company stock options such that 100% of your unvested option shares shall vest as of your termination date; and

    d. A lump-sum equal to your target annual bonus, prorated for partial months of service prior to your separation date.

3. **Definitions**. The following definitions apply to this letter agreement:

   a. Change of Control: (i) the consummation of a merger or consolidation of the Company with or into another entity; or (ii) the dissolution, liquidation or winding up of the Company. The foregoing notwithstanding, a merger or consolidation of the Company does not constitute a "Change in Control" if immediately after the merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of the continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to the merger or consolidation.

   b. Cause: (1) acts or omissions constituting gross negligence, recklessness or willful misconduct on your part with respect to your obligations or otherwise relating to Company business; (ii) your material breach of this agreement or the Company's Proprietary Information and Inventions Agreement; (iii) your conviction of, entry of or a plea of nolo contendere to fraud, misappropriation or embezzlement, or any felony or crime of moral turpitude; (iv) your willful neglect of duties as determined in the sole and exclusive discretion of the Company's Chief Executive Officer or Board of Directors; (v) your failure to perform the essential functions of your position, with or without a reasonable accommodation, due to a mental or physical disability; or (vi) your death.

   c. Good Reason: the occurrence of one or more of the following without your express written consent: (i) a reduction in your base salary by more than 10%; (ii) a material diminution of your authority, duties or responsibilities; or (iii) relocation of your principal workplace by more than thirty (30) miles. A condition shall not be considered "Good Reason" unless you give the Company written notice of such condition within ninety (90) days after such condition comes into existence and the Company fails to remedy such condition within thirty (30) days after receiving your written notice.

4. **Contingencies for Receipt of Separation Payment(s)**. Your receipt of the Severance Benefits or the Change in Control Severance Benefits will be contingent upon the following: (a) your return of all Company property in your possession; (b) if applicable, your resignation from your position as a member of the Company's Board of Directors and the Board of Directors of any Company subsidiary; (c) your continued adherence to the terms and conditions of the Proprietary Information and Inventions Agreement between you and the Company, including without limitation the ongoing obligations following the

termination of your employment set forth in that agreement; and (d) your execution and non-revocation of a standard form release of claims against the Company in a form proscribed by the Company.

5. **Tax Matters**.

   a. Withholding. All benefits referred to in this letter agreement will be subject to applicable tax withholding and deductions.

   b. IRC Section 280G Payments. In the event that the Severance Benefits and/or the Change in Control Severance Benefits constitute an "excess parachute payment" under the Sections 280G and 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), the Severance Benefits and/or Change in Control Severance Benefits shall be reduced to the maximum amount that does not trigger the excise tax provisions of the Code unless, in the Company's determination, you would receive greater post-tax payments and benefits in the absence of such reduction.

   c. Section 409A. If the Company determines that you are a "specified employee" under Section 409(a)(2)(B)(i) of the Code as such definition shall apply as of your termination date, then, to the extent that any portion of the Severance Benefits and/or Change in Control Severance Benefits are subject to Section 409A of the Code, those payments shall be tendered to you (or your estate) on the first business day following the earlier of: (i) six (6) months following your separation date; or (ii) the date of your death.

   d. No Tax Advice. Notwithstanding the foregoing, by your signature below you agree and acknowledge that the Company does not have a duty to tender to you tax advice and has no duty to design compensation policies to minimize your tax liabilities.

6. **At-Will Employment**. Your employment with the Company remains at-will, which means that either you or the Company may end your employment at any time, with or without reason, notice, or cause.

7. **Miscellaneous**. This letter agreement expressly supersedes and replaces any prior agreements, representations or understandings, written or oral or express or implied, between you and the Company as to the subject matter herein, including without limitation the Offer Letter dated April 27, 2015 and the Severance Letter dated November 24, 2015. This agreement will be construed and interpreted in accordance with the laws of the State of California. This letter agreement may only be modified or amended in a writing signed by both you and a duly-authorized Company officer or member of the Board of Directors. This agreement will bind the heirs, personal representatives, successors and assigns of both you and the Company, and will inure to the benefit of both you and the Company, and

your/its heirs, successors and assigns. If any provision of this letter agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this agreement and the provision in question will be modified to be rendered enforceable.

To signify your acceptance of these terms and conditions, please sign and return a copy of this letter agreement to me on or before March 22, 2016.

Sincerely,

SI-BONE, Inc

/s/ A. Eleftheriadis

Agape Eleftheriadis
Director, Human Resources

ACCEPTED AND AGREED TO:

/s/ Laura A. Francis
Laura A. Francis

Date Signed: 3/16/16

Exhibit 10.12

SI-BONE, INC.

March 1, 2017

Laura Francis
Chief Financial Officer
SI-BONE, Inc.
3055 Olin Avenue, Suite 2200
San Jose, CA 95128

Re: Amendment and Restatement of Letter Agreement

Dear Laura:

Reference is made to that certain Letter Agreement (the "Previous Letter Agreement") dated August 10, 2015 between you and SI-BONE, Inc. (the "Company"). Pursuant to this Amended and Restated Letter Agreement, you are eligible to earn a bonus if the Company completes a Qualified IPO, as more fully described in this letter agreement.

A. Qualified IPO Bonus. If the Company completes a Qualified IPO and you remain an employee of the Company in good standing through the Determination Date, then you will be eligible to receive a bonus of $200,000, which will be paid within sixty (60) days after the Determination Date. Any such payment will be subject to reduction to reflect all applicable federal and state income and employment withholding taxes and other deductions required by law.

B. At Will Employment. Your employment with the Company will continue to be "at will," meaning that either you or the Company may terminate your employment at any time and for any reason, with or without cause.

C. Entire Agreement. This letter agreement constitutes the complete agreement between you and the Company with respect to the matters set forth herein and supersedes any prior agreements, representations or understandings (whether written, oral or implied), including the Previous Letter Agreement, between you and the Company.

D. Source of Payments. The Company will make all payments under this letter agreement from its general assets. The Company's obligations under this letter agreement are unfunded and unsecured, and you have no rights other than those of general creditors.

E. Miscellaneous. All determinations related to this letter agreement will be made by the Company's Board of Directors or a duly authorized committee of the Company's Board of Directors. The determinations of the Company's Board of Directors with regard to this letter agreement will be final, conclusive, and binding on all parties.

F. Definitions. The following terms used in this letter agreement have the meaning set forth below.

"Common Stock" means the Company's common stock.

"Determination Date" means the date that is thirty (30) trading days after an IPO that results in a Qualified IPO.

"IPO" means the consummation of a firm commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale by the Company of its equity securities, following which the shares of the Company's Common Stock are publicly held.

"Qualified IPO" means an IPO that the Board of Directors of the Company or the Pricing Committee of the Board of Directors of the Company, in its sole discretion, reasonably determines to be satisfactory.

Please indicate your agreement to these terms by signing and dating this amended and restated letter agreement and returning it to me.

Very truly yours,

SI-BONE, INC.

/s/ Jeffrey Dunn
Member of the Board of Directors

ACCEPTED AND AGREED TO:

/s/ Laura Francis
Laura Francis

3/1/17
Date

SI-BONE, INC.
3055 OLIN AVENUE, SUITE 2200
SAN JOSE, CA 95128

February 7, 2012

Dr. W. Carlton Reckling
[Address intentionally omitted.]

Dear Dr. Reckling:

SI-BONE, Inc. (the "Company") is pleased to offer you employment effective March 5, 2012 on the following terms:

1. Position. Your initial title will be Vice President of Medical Affairs, and you will initially report to me, Jeff Dunn, President and CEO. This is a full time position. While you render services to the Company you will not engage in any other employment, consulting or other business activity that would create a conflict of interest with the Company. The only exceptions to this are 1) as specified in Exhibit D regarding the transition from your current medical practice, and 2) for any general orthopedic activities consulting or business activities that you participate in that do not relate directly to lower back and/or SI joint conditions. By signing this letter agreement, you confirm to the Company that you have no contractual commitments or other legal obligations that would prohibit you from performing your duties for the Company.

2. Cash Compensation. The Company will pay you a base salary at the rate of $225,000 per year, payable in accordance with the Company's standard payroll schedule. This salary will be subject to adjustment pursuant to the Company's employee compensation policies in effect from time to time. Reasonable and customary business expenses, including the IRS mandated rate for business automobile mileage, will be reimbursed to you by the Company. You will also be reimbursed by the Company for all reasonable subscriptions, dues and Continuing Medical Education in order to maintain your current medical certifications. As well the Company will reimburse you for your attainment of an MBA that is mutually agreed upon. In addition, the Company will reimburse you for a insurance "tail" coverage for your past medical practice, upon mutual agreement of the arrangement between you and the Company. The estimate of these non-salary costs are summarized in the attached Exhibit E and reimbursement will be within these 10% of these estimates or the excess must be approved by the Company's Compensation Committee of the Board of Directors.

3. Employee Benefits. As a regular employee of the Company, you will be eligible to participate in a number of Company-sponsored benefits. You will be then be eligible for SI¬Bone, Inc. Medical and Dental Benefits on April 1, 2012. In addition, you will be entitled to paid vacation in accordance with the Company's vacation policy, as in effect from time to time.

4. Proprietary Information and Inventions Agreement. Like all Company employees, you will be required, as a condition of your employment with the Company, to sign the Company's standard Proprietary Information and Inventions Agreement, a copy of which is attached hereto as **Exhibit A**.

5. Employment Relationship. Employment with the Company is for no specific period of time. Your employment with the Company will be "at will," meaning that either you or the Company may terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this letter agreement. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at will" nature of your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company (other than you).

6. Non-Competition. During the term of your employment, and for a period of twelve (12) months after termination of your employment, you shall not (i) endorse, promote, sell, distribute, solicit orders for or otherwise dispose of, directly or indirectly, any products which are similar to or competitive with the products of the Company, (ii) consult with, advise or assist in any way, whether or not for consideration, any person or entity to endorse, promote, sell, distribute, solicit orders for or otherwise dispose of, directly or indirectly, any products which are similar to or competitive with the products of the Company, (iii) induce or attempt to induce any customer or supplier of the Company to reduce the business done by such customer or supplier with the Company and/or (iv) engage in any practice the purpose or result of which is to circumvent the provisions of this covenant not to compete.

7. Taxes. All forms of compensation referred to in this letter agreement are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law. You agree that the Company does not have a duty to design its compensation policies in a manner that minimizes your tax liabilities, and you will not make any claim against the Company or its Board of Directors related to tax liabilities arising from your compensation.

8. Indemnification.

a) Indemnification of Expenses. Subject to the provisions of Section 8(b) below, the Company shall indemnify You for Expenses to the fullest extent permitted by law if You were or are or become a party to or witness or other participant in, or are threatened to be made a party to or witness or other participant in, any Claim (whether by reason of or arising in part out of a Covered Event), including all interest, assessments and other charges paid or payable in connection with or in respect of such Expenses.

b) Exceptions. Notwithstanding any other provision of this Agreement, the Company shall not be obligated pursuant to the terms of this Agreement:

1) Excluded Action or Omissions. To indemnify You for Expenses resulting from acts, omissions or transactions for which You are prohibited from receiving indemnification under this letter agreement or applicable law.

2) Claims Initiated by You. To indemnify or make Expense advances to You with respect to Claims initiated or brought voluntarily by You and not by way of defense., counterclaim or cross claim, except (i) with respect to actions or proceedings brought to establish or enforce a right to indemnification under this letter agreement or any other agreement or insurance policy or under the Company's charter documents relating to Claims for Covered Events, (ii) in specific cases if the Board of Directors has approved the initiation or bringing of such Claim, (iii) as otherwise required under Section 145 of the Delaware General Corporation Law (relating to indemnification of officers, directors, employees and agents); and (iv) with respect to actions or proceedings under any insurance policies maintained by the Company to enforce any of the terms thereof, regardless of whether You ultimately are determined to be entitled to such indemnification or insurance recovery, as the case may be.

3) Lack of Good Faith. To indemnify You for any Expenses incurred by You with respect to any action instituted (i) by You to enforce or interpret this letter agreement, if a court having jurisdiction over such action determines that each of the material assertions made by You as a basis for such action was not made in good faith or was frivolous, or (ii) by or in the name of the Company to enforce or interpret this letter agreement, if a court having jurisdiction over such action determines that each of the material defenses asserted by You in such action was made in bad faith or was frivolous.

c) Definitions.

1) "Claim" shall mean with respect to a Covered Event (as defined below): any threatened, pending or completed action, suit, proceeding or alternative dispute resolution mechanism, or any hearing, inquiry or investigation that You in good faith believes might lead to the institution of any such action, suit, proceeding or alternative dispute resolution mechanism, whether civil, criminal, administrative, investigative or other.

2) "Covered Event" shall mean any event or occurrence related to the fact that You are or were an, officer, employee, agent and/or fiduciary of the Company, or any subsidiary of the Company, or is or was serving at the request of the Company as a director, officer, employee, agent and/or fiduciary of another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action or inaction on Your part while serving in such capacity.

3) "Expenses" shall mean any and all expenses (including attorneys' fees and all other costs, expenses and obligations incurred in connection with investigating, defending, being a party to or witness in or participating in (including on appeal), or preparing to defend, to be a party to or witness in or to participate in, any action, suit, proceeding, alternative dispute resolution mechanism, hearing, inquiry or investigation), judgments, fines, penalties and amounts paid in settlement (if such settlement is approved in advance by the Company, which approval shall not be unreasonably withheld, conditioned or delayed), actually and reasonably incurred, of any Claim and any federal, state, local or foreign taxes imposed on You as a result of the actual or deemed receipt of any payments under this letter agreement.

9. Interpretation, Amendment and Enforcement. This letter agreement and Exhibit A constitute the complete agreement between you and the Company, contain all of the terms of

your employment with the Company and supersede any prior agreements, representations or understandings (whether written, oral or implied) between you and the Company. This letter agreement may not be amended or modified, except by an express written agreement signed by both you and a duly authorized officer of the Company. The terms of this letter agreement and the resolution of any disputes OS to the meaning, effect, performance or validity of this letter agreement or arising out of related to or in any way connected with. this letter agreement, your employment with the Company or any other relationship between you and the Company (the -Disputes") will be governed by California law, excluding laws relating to conflicts or choice of law_ You and the Company submit to the exclusive personal jurisdiction of the federal and state courts located in California in connection with any Dispute or any claim related to any Dispute.

*****

We hope that you will accept our offer to join the Company. You may indicate your agreement with these terms and accept this oiler by signing and dating both the enclosed duplicate original of this letter agreement and the enclosed Proprietary information and Inventions Agreement and returning them to me. This offer, if not accepted, will expire at the close of business on 1; February 13, 2012, As required by law, your employment with the Company is contingent upon your providing legal proof of your identity and authorisation to work in the United States, as well as the satisfactory completion of background checks, which you approve of through the acceptance of this offer. Your employment is also contingent upon your starting work with the Company on March 5, 2012.

If you have any questions, please call me at 408-207-0700.

Very truly yours,

SI-BONE

By: */s/ Jeffrey W. Dunn*
Jeffrey W. Dunn
Title: President and Chief Executive Officer

I have read and accept this employment offer

/s/ W. Carlton Reckling
Signature of Employee

Dated: February 14, 2012

Attachments

Exhibit A: Proprietary Information and Inventions Agreement

Exhibit B: California Labor Code Section 2870

Exhibit C: Prior Matter

EXHIBIT D — Transition Plan

It is known and understood by both parties that Dr. Reckling will transition to the Position at SI-BONE from his current medical practice as follows and be paid his base salary at the percentage applicable:

a. Month One: 12 business days out of 20 (60 % of the time for SI-BONE).

b. Month Two: 12 business days out of 20 (60 % of the time for SI-BONE).

c. Month Three and Forward; Full-time with SI-BONE.

Confidential and Proprietary

March 15, 2016

Mr. W. Carlton Reckling, M.D.
[Address intentionally omitted.]

Re: Severance

Dear Carlton:

This letter contains terms and conditions pertaining to separation payments and benefits that SI-BONE, Inc. ("the Company") is offering to you.

1. **Benefits upon Separation from Employment - No Change in Control**. In the event that the Company terminates your employment for any reason other than for Cause (as defined below), the Company will tender to you the following benefits (collectively, the "Severance Benefits") within sixty (60) calendar days of the termination date:

    a. A lump-sum payment equal to three (3) months of your then-current base salary; and

    b. A lump-sum payment in the amount of $5,700.00

2. **Benefits upon Separation from Employment Prior to or Following a Change in Control**. Notwithstanding the foregoing, in the event the Company terminates your employment for any reason other than for Cause or if you resign your employment for Good Reason either three (3) months prior to or twelve (12) months following the consummation of a Change in Control, the Company will tender to you the following benefits (collectively, "the Change in Control Severance Benefits") within sixty (60) calendar days of the termination date:

    a. A lump-sum payment equal to six (6) months of your then-current base salary;

    b. A lump-sum payment in the amount of $11,300.00;

    c. Accelerated vesting of any unvested Company stock options such that 100% of your unvested option shares shall vest as of your termination date; and

    d. A lump-sum equal to your target annual bonus, prorated for partial months of service prior to your separation date.

3. **Definitions**. The following definitions apply to this letter agreement:

    a. Change of Control: (i) the consummation of a merger or consolidation of the Company with or into another entity; or (ii) the dissolution, liquidation or winding up of the Company. The foregoing notwithstanding, a merger or consolidation of the Company does not constitute a "Change in Control" if immediately after the merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of the continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to the merger or consolidation.

b. Cause: (i) acts or omissions constituting gross negligence, recklessness or willful misconduct on your part with respect to your obligations or otherwise relating to Company business; (ii) your material breach of this agreement or the Company's Proprietary Information and Inventions Agreement; (iii) your conviction of, entry of or a plea of *nolo contendere* to fraud, misappropriation or embezzlement, or any felony or crime of moral turpitude; (iv) your willful neglect of duties as determined in the sole and exclusive discretion of the Company's Chief Executive Officer or Board of Directors; [v) your failure to perform the essential functions of your position, with or without a reasonable accommodation, due to a mental or physical disability; or (vi) your death.

c. Good Reason: the occurrence of one or more of the following without your express written consent: (i) a reduction in your base salary by more than 10%; (ii) a material diminution of your authority, duties or responsibilities; or (iii) relocation of your principal workplace by more than thirty (30) miles. A condition shall not be considered ''Good Reason" unless you give the Company written notice of such condition within ninety (90) days after such condition comes into existence and the Company fails to remedy such condition within thirty (30) days after receiving your written notice.

4. **Contingencies for Receipt of Separation Payment(s)**. Your receipt of the Severance Benefits or the Change in Control Severance Benefits will be contingent upon the following: (a) your return of all Company property in your possession; (b) if applicable, your resignation from your position as a member of the Company's Board of Directors and the Board of Directors of any Company subsidiary; (c) your continued adherence to the terms and conditions of the Proprietary Information and Inventions Agreement between you and the Company, including without limitation the ongoing obligations following the termination of your employment set forth in that agreement; and (d) your execution and non-revocation of a standard form release of claims against the Company in a form proscribed by the Company.

5. **Tax Matters**.

a. Withholding. All benefits referred to in this letter agreement will be subject to applicable tax withholding and deductions.

b. IRC Section 280G Payments. In the event that the Severance Benefits and/or the Change in Control Severance Benefits constitute an "excess parachute payment" under the Sections 280G and 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), the Severance Benefits and/or Change in Control Severance Benefits shall be reduced to the maximum amount that does not trigger the excise tax provisions of the Code unless, in the Company's determination, you would receive greater post-tax payments and benefits in the absence of such reduction.

c. Section 409A. If the Company determines that you are a "specified employee" under Section 409(a)(2)(B)(i) of the Code as such definition shall apply as of your termination date, then, to the extent that any portion of the Severance Benefits and/or Change in Control Severance Benefits are subject to Section 409A of the Code, those payments shall be tendered to you (or your estate) on the first business day following the earlier of: (i) six (6) months following your separation date; or (ii) the date of your death.

d. No Tax Advice. Notwithstanding the foregoing, by your signature below you agree and acknowledge that the Company does not have a duty to tender to you tax advice and has no duty to design compensation policies to minimize your tax liabilities.

6. **At-Will Employment**. Your employment with the Company remains at-will, which means that either you or the Company may end your employment at any time, with or without reason, notice, or cause.

7. **Miscellaneous**. This letter agreement expressly supersedes and replaces any prior agreements, representations or understandings, written or oral or express or implied, between you and the Company as to the subject matter herein, including without limitation the Offer Letter dated February 7, 2012, the Severance Letter dated June 28, 2013 and the Severance Letter dated November 24, 2015. This agreement will be construed and interpreted in accordance with the laws of the State of California. This letter agreement may only be modified or amended in a writing signed by both you and a duly-authorized Company officer or member of the Board of Directors. This agreement will bind the heirs, personal representatives, successors and assigns of both you and the Company, and will inure to the benefit of both you and the Company, and your/its heirs, successors and assigns. If any provision of this letter agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this agreement and the provision in question will be modified to be rendered enforceable.

To signify your acceptance of these terms and conditions, please sign and return a copy of this letter agreement to me on or before March 22, 2016.

Sincerely,

SI-BONE, Inc.

/s/ Agape Eleftheriadis

Agape Eleftheriadis
Director, Human Resources

ACCEPTED AND AGREED TO:

/s/ W. Carlton Reckling, M.D.
W. Carlton Reckling, M.D.

Date Signed: 4/8/16

SI-BONE, INC.
3055 OLIN AVENUE, SUITE 2200
SAN JOSE, CA 95128

January 18, 2017

Dr. W. Carlton Reckling
[Address intentionally omitted.]

Dear Carlton:

On behalf of SI-BONE, Inc. (the company) it is our pleasure to offer you a promotion effective February 1, 2017 on the following terms:

Position: Your title will be Chief Medical Officer and VP of Medical Affairs and you will continually report to me.

Cash Compensation: The Company will pay you a base semi-monthly salary of $12,500 equivalent to a yearly amount of $300,000 subject to applicable withholdings. SI-BONE paydays are semi-monthly.

Employment Relationship. The remainder of the terms and conditions of your employment with the Company, including without limitation to the at-will nature of your employment, will remain as set forth in the offer letter between you and the Company dated February 7, 2012.

Carlton, we hope that you will accept this offer of promotion to assume this position within the Company. Please indicate your acceptance by signing this document below and retuning a signed copy at your earliest convenience.

If you have any questions, please call me at 408-207-0700.

Very truly yours,

SI-BONE, INC.

By: /s/ Jeffrey W. Dunn
Jeffrey W. Dunn
President, CEO and Chairman

I have read and accept this employment offer:

/s/ W. Dr. W. Carlton Reckling
Signature of Dr. W. Carlton Reckling

Dated: 2/22/2017

SI-BONE, INC.
550 SOUTH WINCHESTER BLVD., SUITE 620
SAN JOSE, CA 95128

December 16, 2010

Mr. Scott Yerby
[Address intentionally omitted.]

Dear Scott:

SI-BONE, Inc. (the "Company") is pleased to offer you employment effective January 17, 2011 on the following terms:

1. **Position**. Your initial title will be Vice President and Chief Technology Officer, and you will initially report to Jeffrey Dunn, President and CEO. This is a full-time position. While you render services to the Company, you will not engage in any other employment, consulting or other business activity (whether fall-time or part-time) that would create a conflict of interest with the Company. By signing this letter agreement, you confirm to the Company that you have no contractual commitments or other legal obligations that would prohibit you from performing your duties for the Company.

2. **Cash Compensation**. The Company will pay you a starting salary at the rate of $180,000 per year, payable in accordance with the Company's standard payroll schedule. This salary will be subject to adjustment pursuant to the Company's employee compensation policies in effect from time to time.

3. **Employee Benefits**. As a regular employee of the Company, you will be eligible to participate in a number of Company-sponsored benefits. You will be eligible for Medical and Dental Benefits on February 1, 2011. In addition, you will be entitled to paid vacation in accordance with the Company's vacation policy, as in effect from time to time.

4. **Stock Options**. Subject to the approval of the Company's Board of Directors or its Compensation Committee, you will be granted an option to purchase 1,166,556 shares of the Company's Common Stock, which currently represents 1.015% of fully diluted shares outstanding. The exercise price per share will be determined by the Board of Directors or the Compensation Committee when the option is granted. The option will be subject to the terms and conditions applicable to options granted under the Company's 2008 Stock Plan (the "Plan"), as described in the Plan and the applicable Stock Option Agreement. You will vest in 25% of the option shares after 12 months of continuous service, and the balance will vest in equal monthly installments over the next 36 months of continuous service, as described in the applicable Stock Option Agreement. In addition, if the Company is subject to a Change in Control (as defined below), before your service with the Company terminates, the Option will vest an additional 50% of the unvested shares at that time.

"Change in Control" means (a) the consummation of a merger or consolidation of the Company with or into another entity or (b) the dissolution, liquidation or winding up of the Company. The foregoing notwithstanding, a merger or consolidation of the Company does not constitute a "Change in Control" if immediately after the merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of the continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to the merger or consolidation.

5. **Proprietary Information and Inventions Agreement**. Like all Company employees, you will be required, as a condition of your employment with the Company, to sign the Company's standard Proprietary Information and Inventions Agreement, a copy of which is attached hereto as **Exhibit A**.

6. **Employment Relationship**. Employment with the Company is for no specific period of time. Your employment with the Company will be "at will," meaning that either you or the Company may terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this letter agreement. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at will" nature of your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company (other than you).

7. **Taxes**. All forms of compensation referred to in this letter agreement are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law. You agree that the Company does not have a duty to design its compensation policies in a manner that minimizes your tax liabilities, and you will not make any claim against the Company or its Board of Directors related to tax liabilities arising from your compensation.

8. **Interpretation, Amendment and Enforcement**. This letter agreement and Exhibit A constitute the complete agreement between you and the Company, contain all of the terms of your employment with the Company and supersede any prior agreements, representations or understandings (whether written, oral or implied) between you and the Company. This letter agreement may not be amended or modified, except by an express written agreement signed by both you and a duly authorized officer of the Company. The terms of this letter agreement and the resolution of any disputes as to the meaning, effect, performance or validity of this letter agreement or arising out of, related to, or in any way connected with, this letter agreement, your employment with the Company or any other relationship between you and the Company (the "Disputes") will be governed by California law, excluding laws relating to conflicts or choice of law. You and the Company submit to the exclusive personal jurisdiction of the federal and state courts located in California in connection with any Dispute or any claim related to any Dispute.

* * * * *

We hope that you will accept our offer to join the Company. You may indicate your agreement with these terms and accept this offer by signing and dating both the enclosed duplicate original of this letter agreement and the enclosed Proprietary Information and Inventions Agreement and returning them to me. This offer, if not accepted, will expire at the close of business on December 21, 2010. As required by law, your employment with the Company is contingent upon your providing legal proof of your identity and authorization to work in the United States. Your employment is also contingent upon your starting work with the Company on January 17, 2011.

If you have any questions, please call me at 408-207-0700 x2201.

Very truly yours,

SI-BONE, Inc.

By: /s/ Jeffrey W. Dunn
Jeffrey W. Dunn
Title: President and CEO

I have read and accept this employment offer:

/s/ Scott Yerby
Signature of Employee

Dated: 12-16-10

Attachment
Exhibit A: Proprietary Information and Inventions Agreement
Exhibit B: California Labor Code Section 2870
Exhibit C: Prior Matter

Confidential and Proprietary

March 15, 2016

Mr. Scott Yerby
[Address intentionally omitted.]

Re: Severance

Dear Scott:

This letter contains terms and conditions pertaining to separation payments and benefits that SI-BONE, Inc. ("the Company") is offering to you.

1. **Benefits upon Separation from Employment** - No Change in Control. In the event that the Company terminates your employment for any reason other than for Cause (as defined below), the Company will tender to you the following benefits (collectively, the "Severance Benefits") within sixty (60) calendar days of the termination date:
    a. A lump-sum payment equal to three (3) months of your then-current base salary; and
    b. A lump-sum payment in the amount of $5,700.00
2. **Benefits upon Separation from Employment Prior to or Following a Change in Control**. Notwithstanding the foregoing, in the event the Company terminates your employment for any reason other than for Cause or if you resign your employment for Good Reason either three (3) months prior to or twelve (12) months following the consummation of a Change in Control, the Company will tender to you the following benefits (collectively, "the Change in Control Severance Benefits") within sixty (60) calendar days of the termination date:
    a. A lump-sum payment equal to six (6) months of your then-current base salary;
    b. A lump-sum payment in the amount of $11,300.00;
    c. Accelerated vesting of any unvested Company stock options such that 100% of your unvested option shares shall vest as of your termination date; and
    d. A lump-sum equal to your target annual bonus, prorated for partial months of service prior to your separation date.

3. **Definitions**. The following definitions apply to this letter agreement:

   a. Change of Control: (i) the consummation of a merger or consolidation of the Company with or into another entity; or [ii] the dissolution, liquidation or winding up of the Company. The foregoing notwithstanding, a merger or consolidation of the Company does not constitute a "Change in Control" if immediately after the merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of the continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to the merger or consolidation.

   b. Cause: (i) acts or omissions constituting gross negligence, recklessness or willful misconduct on your part with respect to your obligations or otherwise relating to Company business; (ii) your material breach of this agreement or the Company's Proprietary Information and Inventions Agreement; (iii) your conviction of, entry of or a plea of nolo contendere to fraud, misappropriation or embezzlement, or any felony or crime of moral turpitude; (iv) your willful neglect of duties as determined in the sole and exclusive discretion of the Company's Chief Executive Officer or Board of Directors; [v) your failure to perform the essential functions of your position, with or without a reasonable accommodation, due to a mental or physical disability; or (vi) your death.

   c. Good Reason: the occurrence of one or more of the following without your express written consent: (i) a reduction in your base salary by more than 10%; (ii) a material diminution of your authority, duties or responsibilities; or (iii) relocation of your principal workplace by more than thirty (30) miles. A condition shall not be considered ''Good Reason" unless you give the Company written notice of such condition within ninety (90) days after such condition comes into existence and the Company fails to remedy such condition within thirty (30) days after receiving your written notice.

4. **Contingencies for Receipt of Separation Payment(s)**. Your receipt of the Severance Benefits or the Change in Control Severance Benefits will be contingent upon the following: (a) your return of all Company property in your possession; (b) if applicable, your resignation from your position as a member of the Company's Board of Directors and the Board of Directors of any Company subsidiary; (c) your continued adherence to the terms and conditions of the Proprietary information and Inventions Agreement between you and the Company, including without limitation the ongoing obligations following the

termination of your employment set forth in that agreement; and (d) your execution and non-revocation of a standard form release of claims against the Company in a form proscribed by the Company.

5. **Tax Matters**.

   a. Withholding. All benefits referred to in this letter agreement will be subject to applicable tax withholding and deductions.

   b. IRC Section 280G Payments. In the event that the Severance Benefits and/or the Change in Control Severance Benefits constitute an "excess parachute payment" under the Sections 280G and 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), the Severance Benefits and/or Change in Control Severance Benefits shall be reduced to the maximum amount that does not trigger the excise tax provisions of the Code unless, in the Company's determination, you would receive greater post-tax payments and benefits in the absence of such reduction.

   c. Section 409A. If the Company determines that you are a "specified employee" under Section 409(a)(2)(B)(i) of the Code as such definition shall apply as of your termination date, then, to the extent that any portion of the Severance Benefits and/or Change in Control Severance Benefits are subject to Section 409A of the Code, those payments shall be tendered to you (or your estate) on the first business day following the earlier of: (0 six (6) months following your separation date; or (ii) the date of your death.

   d. No Tax Advice. Notwithstanding the foregoing, by your signature below you agree and acknowledge that the Company does not have a duty to tender to you tax advice and has no duty to design compensation policies to minimize your tax liabilities.

6. **At-Will Employment**. Your employment with the Company remains at-will, which means that either you or the Company may end your employment at any time, with or without reason, notice, or cause.

7. **Miscellaneous**. This letter agreement expressly supersedes and replaces any prior agreements, representations or understandings, written or oral or express or implied, between you and the Company as to the subject matter herein, including without limitation the Offer Letter dated December 16, 2010, the Severance Letter dated June 28, 2013 and the Severance Letter dated November 24, 2015. This agreement will be construed and interpreted in accordance with the laws of the State of California. This letter agreement may only be modified or amended in a writing signed by both you and a duly-authorized Company officer or member of the Board of Directors. This agreement will bind the heirs, personal

representatives, successors and assigns of both you and the Company, and will inure to the benefit of both you and the Company, and your/its heirs, successors and assigns. If any provision of this letter agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this agreement and the provision in question will be modified to be rendered enforceable.

To signify your acceptance of these terms and conditions, please sign and return a copy of this letter agreement to me on or before March 22, 2016.

Sincerely,

SI-BONE, Inc.

/s/ Agape Eleftheriadis
Agape Eleftheriadis
Director, Human Resources

ACCEPTED AND AGREED TO:

/s/ Scott Yerby
Scott Yerby

Date Signed: March 16, 2016

SI-BONE, INC.
3055 OLIN AVENUE, SUITE 2200
SAN JOSE, CA 95128

June 19, 2016

Mr. Anthony J. Recupero
[Address intentionally omitted.]

RE: Employment Offer

Dear Tony:

We are pleased to offer you the position of Chief Commercial Officer with SI-BONE, Inc. ("**SI-BONE**" or "the **Company**") We believe that you will bring great value to SI-BONE and that your knowledge, skills and experience will be an asset to the Company and will offer a mutually beneficial opportunity. We are excited about you joining our team and hope that you will accept our offer.

Position. Your title will be Chief Commercial Officer. This is a full time, exempt position. You will report directly to Jeffrey Dunn, President and CEO. We anticipate your start date will be July 5, 2016 or a mutually agreed upon date.

Cash Compensation. The Company will pay you a semi-monthly base salary of $13,125, equivalent to a yearly base of $315,000, subject to applicable withholdings. This salary will be subject to adjustment in the Company's sole discretion. SI-BONE paydays are semi-monthly. Based on your role, you will be also be eligible under the Company's 2016 Bonus Plan ("the **Bonus Plan**") to receive up to an additional 40% of your base salary based on the achievement of certain corporate and individual goals. This Bonus Plan is available to you in your first full quarter with the Company and beyond. In the event of a dispute between the terms and conditions of this offer letter and the Bonus Plan, the Bonus Plan shall control.

Stock Options. You are also eligible to participate in the Company's 2008 Stock Option Plan. Subject to the approval of the Company's Board of Directors, you will be granted an option to purchase a number of shares of the Company's Common Stock equal to 0.7% of the Company's fully diluted capitalization as of your first day of employment, with an exercise price equal to the fair market value of our Common Stock on the date of grant as determined by the Board of Directors. Subject in each case to your continuous service to the Company, you will vest in 25% of the shares on the one-year anniversary of your Start Date, and the balance of the shares will vest In equal monthly installments over the following 36 months. The option will be subject to the terms and conditions set forth in our 2008 Stock Option Plan and the applicable Stock Option Agreement.

Employee Benefits. As a regular employee of the Company, you will be eligible to participate in a number of Company-sponsored benefits. Participation in the Company's benefits programs are generally effective on the first day of the month following your date of hire, subject to the terms and conditions of specific benefit plan documentation. Human Resources will give you detailed benefits information during your new hire orientation.

Proprietary Information and Inventions Agreement. Your employment is contingent upon your execution of the Company's Proprietary information and Inventions Agreement ("PIIA"), which is enclosed and should be signed and returned with this letter.

Employment Relationship. Please keep in mind that your employment with SI-BONE is at-will. This means that you are free to terminate your employment with SI-BONE at any time, with or without cause or advance notice. Likewise, SI-BONE has the right to terminate your employment, or otherwise discipline, transfer or demote you at any time, with or without cause, and with or without notice. This is the full and complete agreement between you and the Company on this term, and any contrary representations that may have been made to you are superseded by this letter. No one other than the Company CEO can alter this at-will arrangement and any such agreement must be in writing and must be signed by you and the CEO.

Severance. Notwithstanding the foregoing, you will be eligible for the severance benefits set forth on Exhibit A to this Agreement, subject to the terms and conditions of that Exhibit A, which is hereby incorporated by reference.

Tax Matters. All forms of compensation referred to in this letter are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law. You are encouraged to obtain your own tax advice regarding your compensation from the Company.

Miscellaneous. While you render services to the Company, you will not engage in any other employment, consulting or other business activity (whether full-time or part-time) that would create a conflict of interest with the Company. By signing this letter, you confirm to the Company that you have no contractual commitments or other legal obligations that would prohibit you from performing your duties for the Company.

Complete Agreement. This letter, inclusive of Exhibit A and the PlIA, supersedes and replaces any prior agreements, representations or understandings (whether written, oral, implied or otherwise) between you and the Company and constitutes the complete agreement between you and the Company regarding the subject matter set forth herein. This letter may not be amended or modified except by an express written agreement signed by both you and a duly-authorized officer of the Company.

Employment Eligibility Verification. Pursuant to the immigration and Nationality Act, the Company is required to verify the identity and employment eligibility of all new hires. In order to comply with this legal obligation, we can only hire those individuals who are eligible to work in the United States. As a condition of employment, you will be required to provide documents verifying your identity and your eligibility to work in the United States, and to complete an Employment Eligibility Verification form I-9 within three (3) business days from your start date. This employment offer is also contingent upon your starting work with the Company on July 1, 2016 and the completion of an application for employment, satisfactory references and background checks.

To accept this offer, please sign in the space provided below and in the space set forth on Exhibit A and return the signed letter, Exhibit and PIIA to me by close of business on June 22, 2016.

We look forward to you joining the Company and hope that you find your employment with the Company enjoyable and professionally rewarding.

If you have any questions, please call me at 408-718-9027.

Very truly yours,
SI-BONE, Inc.

By: /s/ Laura Francis
Laura Francis
Title: CFO

I have read and accept this employment offer.

Anthony J. Recupero
Printed Name of Employee

/s/ Anthony J. Recupero
Signature of Employee

June 20, 2016
Date

Attachments:

Exhibit A
Proprietary Information and Inventions Agreement (PIIA)

This exhibit contains terms and conditions pertaining to separation payments and benefits that SI-BONE, Inc. ("the Company") is offering to you.

1. **Benefits upon Separation from Employment No Change in Control**. In the event that the Company terminates your employment for any reason other than for Cause (as defined below), the Company will tender to you the following benefits (collectively, the 'Severance Benefits") within sixty (60) calendar days of the termination date:

    a. A lump-sum payment equal to three (3) months of your then-current base salary; and

    b. A lump-sum payment in the amount of $4,000.00

2. **Benefits upon Separation from Employment Prior to or Following a Change in Control**. Notwithstanding the foregoing. in the event the Company terminates your employment for any reason other than Cause or if you resign your employment for Good Reason either three (3) months prior to or twelve (12) months following the consummation of a Change in Control, the Company will tender to you the following benefits (collectively, "the Change in Control Severance Benefits") within sixty (60) calendar days of the termination date:

    a. A lump-sum equal to six (6) months of your then-current base salary;

    b. A lump-sum payment in the amount of $8,000.00;

    c. Accelerated vesting of any unvested Company stock options such that 100% of your unvested option shares shall vest as of your termination date; and

    d. A lump-sum equal to your target annual bonus, prorated for partial months of service prior to your separation date.

3. **Definitions**. The following definitions apply to this Exhibit A:

    a. Change of Control: (i) the consummation of a merger or consolidation of the Company with or into another entity; or (ii) the dissolution, liquidation or winding up of the Company. The foregoing notwithstanding, a merger or consolidation of the Company does not constitute a 'Change in Control" if immediately after the merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of the continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to the merger or consolidation.

    b. Cause: (i) acts or omissions constituting gross negligence, recklessness or willful misconduct on your part with respect to your obligations or otherwise relating to Company business; (ii) your material breach of this agreement or the Company's Proprietary Information and inventions Agreement; (iii) your conviction of, entry of or a plea of *nolo contendere* to fraud, misappropriation or embezzlement, or any felony or crime of moral turpitude; (iv) your willful neglect of duties as determined in the sole and exclusive discretion of the Company's Chief Executive Officer or Board of Directors; (v) your failure to perform the essential functions of your position, with or without a reasonable accommodation, due to a mental or. physical disability; or (vi) your death.

    c. Good Reason: the occurrence of one or more of the following without your express written consent: (i) a reduction in your base salary by more than 10%; (ii) a material diminution of your authority, duties or responsibilities; or (iii) relocation of your principal workplace by more than thirty (30) miles. A condition shall not be considered "Good Reason" unless you give the Company written notice of such condition within ninety (90) days after such condition comes into existence and the Company fails to remedy such condition within thirty (30) days after receiving your written notice.

4. **Contingencies for Receipt of Separation Payment(s)**. Your receipt of the Severance Benefits or the Change in Control Severance Benefits will be contingent upon the following: (a) your return of all Company property in your possession; (b) if applicable, your resignation from your position as a member of the Company's Board of Directors and the Board of Directors of any Company subsidiary; (c) your continued adherence to the terms and conditions of the Proprietary information and

Inventions Agreement between you and the Company, including without limitation the ongoing obligations following the termination of your employment set forth in that agreement; and (d) your execution and non-revocation of a standard form release of claims against the Company in a form proscribed by the Company.

5. **Tax Matters**

   a. Withholding. All benefits referred to in this Exhibit will be subject to applicable tax withholding and deductions.

   b. IRC Section 280G Payments. In the event that the Severance Benefits and/or the Change in Control Severance Benefits constitute an "excess parachute payment" under the Sections 280G and 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), the Severance Benefits and/or Change in Control Severance Benefits shall be reduced to the maximum amount that does not trigger the excise tax provisions of the Code unless, in the Company's determination, you would receive greater post-tax payments and benefits in the absence of such reduction.

   c. Section 409A. If the Company determines that you are a "specified employee" under Section 409(a)(2)(B)(i) of the Code as such definition shall apply as of your termination date, then, to the extent that any portion of the Severance Benefits and/or Change in Control Severance Benefits are subject to Section 409A of the Code, those payments shall be tendered to you (or your estate) on the first business day following the earlier of (i) six (6) months following your separation date; or (ii) the date of your death.

   d. No Tax Advice. Notwithstanding the foregoing, by your signature below you agree and acknowledge that the Company does not have a duty to tender to you tax advice and has no duty to design compensation policies to minimize your tax liabilities.

6. **At-Will Employment**. Your employment with the Company remains at-will, which means that either you or the Company. may end your employment at any time, with or without reason, notice, or cause.

7. **Miscellaneous**. This Exhibit A expressly supersedes and replaces any prior agreements, representations or understandings, written or oral or express or implied, between you and the Company as to the subject matter herein. This Exhibit A may only be modified or amended in a writing signed by both you and a duly-authorized Company officer or member of the Board of Directors. This Exhibit A will bind the heirs, personal representatives, successors and assigns of both you and the Company, and will inure to the benefit of both you and the Company, and your/its heirs, successors and assigns. if any provision of this Exhibit A is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this agreement and the provision in question will be modified to be rendered enforceable.

To signify your acceptance of these terms and conditions, please sign and return a copy of this Exhibit A to me on or before June 22, 2016.

Very truly yours,
SI-BONE, Inc.

By: /s/ Laura Francis
Laura Francis
Title: CFO

ACCEPTED AND AGREED TO:

/s/ Anthony J. Recupero
Anthony J. Recupero

Date Signed: June 20, 2016

Exhibit 10.19

SI-BONE, INC.

AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

JUNE 2, 2016

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AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

THIS AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (the "Agreement") is made as of the 2nd day of June, 2016, by and among SI-BONE, Inc., a Delaware corporation (the "Company") and the investors listed on Schedule A hereto, each of which is herein referred to as an "Investor".

RECITALS

WHEREAS, the Company and certain of the Investors (the "Prior Investors") have previously entered into that certain Amended and Restated Investors' Rights Agreement dated as of April 21, 2014 (the "Prior Rights Agreement"), pursuant to which the Company granted the Prior Investors certain rights;

WHEREAS, the Prior Agreement may be amended, and any provision therein waived, with the consent of the Company and the holders of at least a majority of the voting power of the Company's Series 1, 2, 3, 4, 5 and 6 Preferred Stock (collectively with the Series 7 Preferred Stock, the "Preferred Stock") outstanding (voting together as a single class and on an as-converted to common basis);

WHEREAS, the Company and certain of the Investors (the "Series 7 Investors") are parties to that certain Series 7 Preferred Stock Purchase Agreement of even date herewith (the "Series 7 Purchase Agreement") by and among the Company and certain of the Investors, pursuant to which the Series 7 Investors are purchasing shares of the Company's Series 7 Preferred Stock (the "Series 7 Preferred Stock"); and

WHEREAS, in order to induce the Series 7 Investors to purchase Series 7 Preferred Stock pursuant to the Series 7 Purchase Agreement, the Prior Investors and the Company hereby agree that this Agreement shall govern certain rights of the Investors as they relate to the shares Common Stock of the Company (the "Common Stock") issued or issuable to them, including registration rights, financial information rights, rights of first refusal, and certain other matters as set forth herein.

NOW, THEREFORE, in consideration of the mutual promises and covenants set forth herein, the Prior Investors and the Company hereby agree that the Prior Agreement shall be superseded and replaced in its entirety by this Agreement, and the parties hereto further agree as follows:

1. Registration Rights. The Company covenants and agrees as follows:

1.1 Definitions. For purposes of this Agreement:

(a) The term "Act" means the Securities Act of 1933, as amended.

(b) The term "Affiliate" means, with respect to any specified person, any other person who or which, directly or indirectly, controls, is controlled by, or is under common control with such specified person, including, without limitation, any general partner,

officer, director or manager of such person and any venture capital fund now or hereafter existing that is controlled by one or more general partners or managing members of, or is under common investment management with, such person.

(c) The term "Form S-3" means such form under the Act as in effect on the date hereof or any registration form under the Act subsequently adopted by the SEC that permits inclusion or incorporation of substantial information by reference to other documents filed by the Company with the SEC.

(d) The term "Free Writing Prospectus" means a free-writing prospectus, as defined in Rule 405.

(e) The term "Holder" means any person owning or having the right to acquire Registrable Securities or any assignee thereof in accordance with Section 1.11 hereof.

(f) The term "Initial Offering" means the Company's first firm commitment underwritten public offering of its Common Stock under the Act.

(g) The term "1934 Act" means the Securities Exchange Act of 1934, as amended.

(h) The terms "register," "registered," and "registration" refer to a registration effected by preparing and filing a registration statement or similar document in compliance with the Act, and the declaration or ordering of effectiveness of such registration statement or document.

(i) The term "Registrable Securities" means (i) the Common Stock issuable or issued upon conversion of the Preferred Stock and (ii) any Common Stock of the Company issued as (or issuable upon the conversion or exercise of any warrant, right or other security that is issued as) a dividend or other distribution with respect to, or in exchange for, or in replacement of, the shares referenced in (i) above, excluding in all cases, however, any Registrable Securities sold by a person in a transaction in which his rights under this Section 1 are not assigned. In addition, the number of shares of Registrable Securities outstanding shall equal the aggregate of the number of shares of Common Stock outstanding that are, and the number of shares of Common Stock issuable pursuant to then exercisable or convertible securities that are, Registrable Securities.

(j) The term "Restated Certificate" shall mean the Company's Restated Certificate of Incorporation, as amended and/or restated from time to time.

(k) The term "Rule 144" shall mean Rule 144 under the Act.

(l) The term "Rule 144(b)(1)(i)" shall mean subsection (b)(1)(i) of Rule 144 under the Act as it applies to persons who have held shares for more than one (1) year.

(m) The term "Rule 405" shall mean Rule 405 under the Act.

(n) The term "SEC" shall mean the Securities and Exchange Commission.

1.2 Request for Registration.

(a) Subject to the conditions of this Section 1.2, if the Company shall receive at any time after the earlier of (i) five (5) years after the date of this Agreement or (ii) one hundred eighty (180) days after the effective date of the Initial Offering, a written request from the Holders of forty percent (40%) or more of the Registrable Securities then outstanding (for purposes of this Section 1.2, the "Initiating Holders") that the Company file a registration statement under the Act covering the registration of at least twenty percent (20%) of the then outstanding Registrable Securities (or a lesser percentage provided that the anticipated aggregate offering price is at least $10,000,000 (net of any underwriters' discounts or commissions)), then the Company shall, within twenty (20) days of the receipt thereof, give written notice of such request to all Holders, and subject to the limitations of this Section 1.2, use best efforts to effect, as soon as practicable, the registration under the Act of all Registrable Securities that the Holders request to be registered in a written request received by the Company within twenty (20) days of the mailing of the Company's notice pursuant to this Section 1.2(a).

(b) If the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 1.2, and the Company shall include such information in the written notice referred to in Section 1.2(a). In such event the right of any Holder to include its Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting (unless otherwise mutually agreed by a majority in interest of the Initiating Holders and such Holder) to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting by those Initiating Holders holding a majority of the Registrable Securities held by all Initiating Holders (which underwriter or underwriters shall be reasonably acceptable to the Company). Notwithstanding any other provision of this Section 1.2, if the underwriter advises the Company that marketing factors require a limitation on the number of securities underwritten (including Registrable Securities), then the Company shall so advise all Holders of Registrable Securities that would otherwise be underwritten pursuant hereto, and the number of shares that may be included in the underwriting shall be allocated to the Holders of such Registrable Securities pro rata based on the number of Registrable Securities held by all such Holders (including the Initiating Holders). In no event shall any Registrable Securities be excluded from such underwriting unless all other securities are first excluded. Any Registrable Securities excluded or withdrawn from such underwriting shall be withdrawn from the registration.

(c) Notwithstanding the foregoing, the Company shall not be required to effect a registration pursuant to this Section 1.2:

(i) in any particular jurisdiction in which the Company would be required to execute a general consent to service of process in effecting such registration, unless the Company is already subject to service in such jurisdiction and except as may be required under the Act; or

(ii) after the Company has effected two (2) registration pursuant to this Section 1.2, and such registrations have been declared or ordered effective; or

(iii) during the period starting with the date sixty (60) days prior to the Company's good faith estimate of the date of the filing of and ending on a date one hundred eighty (180) days following the effective date of a Company initiated registration subject to Section 1.3 below, provided that the Company is actively employing in good faith all commercially reasonable efforts to cause such registration statement to become effective; or

(iv) if the Initiating Holders propose to dispose of Registrable Securities that may be registered on Form S 3 pursuant to Section 1.4 hereof;

(v) if the Company shall furnish to Holders requesting a registration statement pursuant to this Section 1.2 a certificate signed by the Company's Chief Executive Officer or Chairman of the Board of Directors stating that in the good faith judgment of the Board of Directors of the Company, it would be seriously detrimental to the Company and its stockholders for such registration statement to be effected at such time, in which event the Company shall have the right to defer such filing for a period of not more than ninety (90) days after receipt of the request of the Initiating Holders, provided that such right shall be exercised by the Company not more than once in any twelve (12) month period and provided further that the Company shall not register any securities for the account of itself or any other stockholder during such ninety (90) day period (other than a registration relating solely to the sale of securities of participants in a Company stock plan, a registration relating to a corporate reorganization or transaction under Rule 145 of the Act, a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities, or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered); or

(vi) if the Company, within thirty (30) days of receipt of the request for registration pursuant to this Section 1.2, gives notice to the requesting Holders of its bona fide intention to effect the filing of a registration statement with the SEC within ninety (90) days of receipt of such request (other than a registration effected solely to qualify an employee benefit plan or to effect a business combination pursuant to Rule 145), provided that the Company is actively employing in good faith all commercially reasonable efforts to cause such registration statement to become effective.

1.3 Company Registration.

(a) If (but without any obligation to do so) the Company proposes to register (including for this purpose a registration effected by the Company for stockholders other than the Holders) any of its stock or other securities under the Act in connection with the public offering of such securities (other than (i) a registration relating to a demand pursuant to Section 1.2 or (ii) a registration relating solely to the sale of securities of participants in a Company stock

plan, a registration relating to a corporate reorganization or transaction under Rule 145 of the Act, a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities, or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered), the Company shall, at such time, promptly give each Holder written notice of such registration. In such event, if the Company intends to distribute the securities covered by the registration by means of an underwriting, the right of any Holder to include its Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting (unless otherwise mutually agreed by a majority in interest of the Initiating Holders and such Holder) to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting by the Company (which underwriter or underwriters shall be reasonably acceptable to those Initiating Holders holding a majority of the Registrable Securities held by all Initiating Holders). Upon the written request of each Holder given within twenty (20) days after mailing of such notice by the Company in accordance with Section 3.5, the Company shall, subject to the provisions of Section 1.3(c), use all commercially reasonable efforts to cause to be registered under the Act all of the Registrable Securities that each such Holder requests to be registered.

(b) Right to Terminate Registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 1.3 prior to the effectiveness of such registration whether or not any Holder has elected to include securities in such registration. The expenses of such withdrawn registration shall be borne by the Company in accordance with Section 1.7 hereof.

(c) Underwriting Requirements. In connection with any offering involving an underwriting of shares of the Company's capital stock, the Company shall not be required under this Section 1.3 to include any of the Holders' securities in such underwriting unless they accept the terms of the underwriting as agreed upon between the Company and the underwriters selected by the Company (or by other persons entitled to select the underwriters) and enter into an underwriting agreement in customary form with such underwriters, and then only in such quantity as the underwriters determine in their sole discretion will not jeopardize the success of the offering by the Company. If the total amount of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the amount of securities sold other than by the Company that the underwriters determine in their sole discretion is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, that the underwriters determine in their sole discretion will not jeopardize the success of the offering. In no event shall any Registrable Securities be excluded from such offering unless all other stockholders' securities have been first excluded. In the event that the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be apportioned pro rata among the selling Holders based on the number of Registrable Securities held by all selling Holders or in such other proportions as shall mutually be agreed to by all such selling Holders. Notwithstanding the foregoing, in no event shall the amount of securities of the selling Holders included in the offering be reduced below fifteen percent (15%) of the total amount of

securities included in such offering, unless such offering is the Initial Offering, in which case the selling Holders may be excluded if the underwriters make the determination described above and no other stockholder's securities (other than the Initiating Holders) are included in such offering. For purposes of the preceding sentence concerning apportionment, for any selling stockholder that is a Holder of Registrable Securities and that is a venture capital fund, partnership or corporation, the affiliated venture capital funds, partners, retired partners and stockholders of such Holder, or the estates and family members of any such partners and retired partners and any trusts for the benefit of any of the foregoing persons shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate amount of Registrable Securities owned by all such related entities and individuals.

1.4 Form S-3 Registration. After the Initial Offering, the Company shall use its commercially reasonable efforts to qualify for registration on Form S-3 or any comparable or successor form or forms. In case the Company shall receive from the Holders of at least 5,000,000 Registrable Securities (for purposes of this Section 1.4, the "S-3 Initiating Holders") a written request or requests that the Company effect a registration on Form S-3 and any related qualification or compliance with respect to all or a part of the Registrable Securities owned by such Holder or Holders, the Company shall:

(a) promptly give written notice of the proposed registration, and any related qualification or compliance, to all other Holders; and

(b) use all commercially reasonable efforts to effect, as soon as practicable, such registration and all such qualifications and compliances as may be so requested and as would permit or facilitate the sale and distribution of all or such portion of such Holders' Registrable Securities as are specified in such request, together with all or such portion of the Registrable Securities of any other Holders joining in such request as are specified in a written request given within fifteen (15) days after receipt of such written notice from the Company, provided, however, that the Company shall not be obligated to effect any such registration, qualification or compliance, pursuant to this Section 1.4:

(i) if Form S-3 is not available for such offering by the Holders;

(ii) if the Holders, together with the holders of any other securities of the Company entitled to inclusion in such registration, propose to sell Registrable Securities and such other securities (if any) at an aggregate price to the public (net of any underwriters' discounts or commissions) of less than $3,000,000;

(iii) if the Company shall furnish to all Holders requesting a registration statement pursuant to this Section 1.4 a certificate signed by the Company's Chief Executive Officer or Chairman of the Board of Directors stating that in the good faith judgment of the Board of Directors of the Company, it would be seriously detrimental to the Company and its stockholders for such registration statement to be effected at such time, in which event the Company shall have the right to defer such filing for a period of not more than ninety (90) days after receipt of the request of the S-3 Initiating Holders, provided that such right shall be exercised by the Company not more than once in any twelve (12) month period and provided

further that the Company shall not register any securities for the account of itself or any other stockholder during such ninety (90) day period (other than a registration relating solely to the sale of securities of participants in a Company stock plan, a registration relating to a corporate reorganization or transaction under Rule 145 of the Act, a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities, or a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered);

(iv) if the Company has, within the twelve (12) month period preceding the date of such request, already effected one (1) registration on Form S-3 pursuant to this Section 1.4;

(v) in any particular jurisdiction in which the Company would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance;

(vi) if the Company, within thirty (30) days of receipt of the request of such S-3 Initiating Holders, gives notice of its bona fide intention to effect the filing of a registration statement with the SEC within ninety (90) days of receipt of such request (other than a registration effected solely to qualify an employee benefit plan or to effect a business combination pursuant to Rule 145), provided that the Company is actively employing in good faith all commercially reasonable efforts to cause such registration statement to become effective; or

(vii) during the period starting with the date thirty (30) days prior to the Company's good faith estimate of the date of the filing of and ending on a date ninety (90) days following the effective date of a Company-initiated registration subject to Section 1.3 above, provided that the Company is actively employing in good faith all commercially reasonable efforts to cause such registration statement to become effective.

(c) If the S-3 Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 1.4 and the Company shall include such information in the written notice referred to in Section 1.4(a). The provisions of Section 1.2(b) shall be applicable to such request (with the substitution of Section 1.4 for references to Section 1.2).

(d) Subject to the foregoing, the Company shall file a registration statement covering the Registrable Securities and other securities so requested to be registered as soon as practicable after receipt of the request or requests of the S-3 Initiating Holders.

1.5 Obligations of the Company. Whenever required under this Section 1 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use all commercially reasonable efforts to cause such

registration statement to become effective, and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to one hundred eighty (180) days or, if earlier, until the distribution contemplated in the Registration Statement has been completed;

(b) prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus used in connection with such registration statement as may be necessary to comply with the provisions of the Act with respect to the disposition of all securities covered by such registration statement;

(c) furnish to the Holders such number of copies of a prospectus, including a preliminary prospectus and any Free Writing Prospectus, in conformity with the requirements of the Act, and such other documents as they may reasonably request in order to facilitate the disposition of Registrable Securities owned by them;

(d) use all commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or Blue Sky laws of such jurisdictions as shall be reasonably requested by the Holders, provided that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business or to file a general consent to service of process in any such states or jurisdictions;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the managing underwriter of such offering;

(f) notify each Holder of Registrable Securities covered by such registration statement at any time when a prospectus or Free Writing Prospectus (to the extent prepared by or on behalf of the Company) relating thereto is required to be delivered under the Act of the happening of any event as a result of which the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing, and, at the request of any such Holder, the Company will, as soon as reasonably practicable, file and furnish to all such Holders a supplement or amendment to such prospectus or Free Writing Prospectus (to the extent prepared by or on behalf of the Company) so that, as thereafter delivered to the purchasers of such Registrable Securities, such prospectus will not contain an untrue statement of a material fact or omit to state any fact necessary to make the statements therein not misleading in light of the circumstances under which they were made;

(g) cause all such Registrable Securities registered pursuant to this Section 1 to be listed on a national exchange or trading system and on each securities exchange and trading system on which similar securities issued by the Company are then listed;

(h) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(i) use all reasonable efforts to prevent the issuance of any stop order ("Stop Order") suspending the effectiveness of a registration statement, or of any order suspending or preventing the use of any related prospectus or suspending the qualification of any securities included in such registration statement for sale in any jurisdiction, and, in the event of such issuance, the Company shall immediately notify the Holders of Registrable Securities covered by such registration statement of the receipt by the Company of such notification and shall use all reasonable efforts promptly to obtain the withdrawal of such order, and, in the event of the withdrawal of such order, the Company shall immediately notify such Holders thereof;

(j) use its commercially reasonable efforts to obtain one or more "cold comfort" letters, dated the effective date of the related registration statement (and, if such registration includes an underwritten public offering, dated the date of the closing under the underwriting agreement), signed by the Company's independent public accountants in customary form and covering such matters of the type customarily covered by "cold comfort" letters as the Holders holding a majority of the Registrable Securities being sold reasonably request;

(k) use its commercially reasonable efforts to provide, at the request of any Holder participating in such registration, on the date such securities are delivered to the underwriters for sale pursuant to such registration or, if such securities are not being sold through underwriters, on the date the registration statement with respect to such securities becomes effective, a legal opinion of the Company's outside counsel, dated the effective date of such registration statement (and, if such registration includes an underwritten public offering, dated the date of the closing under the underwriting agreement), with respect to the registration statement, each amendment and supplement thereto, the prospectus included therein (including the preliminary prospectus) and such other documents relating thereto in customary form and covering such matters of the type customarily covered by legal opinions of such nature;

(l) to the extent the Company is a well-known seasoned issuer (as defined in Rule 405) (a "WKSI") at the time any request for registration is submitted to the Company in accordance with Section 1.4, (i) if so requested, file an automatic shelf registration statement (as defined in Rule 405) (an "Automatic Shelf Registration Statement") to effect such registration, and (ii) remain a WKSI (and not become an ineligible issuer (as defined in Rule 405)) during the period during which such Automatic Shelf Registration Statement is required to remain effective in accordance with this Agreement;

(m) if at any time when the Company is required to re-evaluate its WKSI status for purposes of an Automatic Shelf Registration Statement used to effect a request for registration in accordance with Section 1.4 (i) the Company determines that it is not a WKSI, (ii) the registration statement is required to be kept effective in accordance with this Agreement and (iii) the registration rights of the applicable Holders have not terminated, promptly amend the registration statement onto a form the Company is then eligible to use or file a new registration statement on such form, and keep such registration statement effective in accordance with the requirements otherwise applicable under this Agreement; and

(n) if (A) a registration made pursuant to a shelf registration statement is required to be kept effective in accordance with this Agreement after the third anniversary of the initial effective date of the shelf registration statement and (B) the registration rights of the

applicable Holders have not terminated, file a new registration statement with respect to any unsold Registrable Securities subject to the original request for registration prior to the end of the three (3) year period after the initial effective date of the shelf registration statement, and keep such registration statement effective in accordance with the requirements otherwise applicable under this Agreement.

Notwithstanding the provisions of this Section 1, the Company shall be entitled to postpone or suspend, for a reasonable period of time, not to exceed ninety (90) days in any one (1) year period, the filing, effectiveness or use of, or trading under, any registration statement if the Company shall determine that any such filing or the sale of any securities pursuant to such registration statement would in the good faith judgment of the Board of Directors of the Company:

(i) materially impede, delay or interfere with any material pending or proposed financing, acquisition, corporate reorganization or other similar transaction involving the Company for which the Board of Directors of the Company has authorized negotiations;

(ii) materially adversely impair the consummation of any pending or proposed material offering or sale of any class of securities by the Company; or

(iii) require disclosure of material nonpublic information that, if disclosed at such time, would be materially harmful to the interests of the Company and its stockholders; provided, however, that during any such period all executive officers and directors of the Company are also prohibited from selling securities of the Company (or any security of any of the Company's subsidiaries or affiliates).

In the event of the suspension of effectiveness of any registration statement pursuant to this Section 1.5, the applicable time period during which such registration statement is to remain effective shall be extended by that number of days equal to the number of days the effectiveness of such registration statement was suspended.

1.6 Information from Holder. It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 1 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as shall be reasonably required to effect the registration of such Holder's Registrable Securities.

1.7 Expenses of Registration. All expenses other than underwriting discounts and commissions incurred in connection with registrations filings or qualifications of (i) up to two (2) registrations pursuant to Section 1.2, (ii) all registrations pursuant to Section 1.3 and (ii) up to four (4) registrations pursuant to Section 1.4, including, without limitation, all registration, filing and qualification fees, printers' and accounting fees, fees and disbursements of counsel for the Company and the reasonable fees and disbursements of one counsel for the selling Holders shall be borne by the Company. Notwithstanding the foregoing, the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Sections 1.2

or 1.4 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all participating Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless, in the case of a registration requested under Section 1.2, the Holders of a majority of the Registrable Securities agree to forfeit their right to one demand registration pursuant to Section 1.2 and provided, however, that if at the time of such withdrawal, the Holders have learned of a material adverse change in the condition, business or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness following disclosure by the Company of such material adverse change, then the Holders shall not be required to pay any of such expenses and shall retain their rights pursuant to Section 1.4.

1.8 Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any such registration as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 1.

1.9 Indemnification. In the event any Registrable Securities are included in a registration statement under this Section 1:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each Holder, the partners, members, officers, directors and stockholders of each Holder, legal counsel and accountants for each Holder, any underwriter (as defined in the Act) for such Holder and each person, if any, who controls such Holder or underwriter within the meaning of the Act or the 1934 Act, against any losses, claims, damages or liabilities (joint or several) to which they may become subject under the Act, the 1934 Act, any state securities laws or any rule or regulation promulgated under the Act, insofar as such losses, claims, damages, or liabilities (or actions in respect thereof) arise out of or are based upon any of the following statements, omissions or violations (collectively a "Violation"): (i) any untrue statement or alleged untrue statement of a material fact contained in such registration statement, including any preliminary prospectus, final prospectus, or Free Writing Prospectus contained therein or any amendments or supplements thereto, any issuer information (as defined in Rule 433 of the Act) filed or required to be filed pursuant to Rule 433(d) under the Act or any other document incident to such registration prepared by or on behalf of the Company or used or referred to by the Company, (ii) the omission or alleged omission to state in such registration statement a material fact required to be stated therein, or necessary to make the statements therein not misleading or (iii) any violation or alleged violation by the Company of the Act, the 1934 Act, any state securities laws or any rule or regulation promulgated under the Act, the 1934 Act or any state securities laws, and the Company will reimburse each such Holder, underwriter, controlling person or other aforementioned person for any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability or action as such expenses are incurred; provided, however, that the indemnity agreement contained in this subsection l.8(a) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Company (which consent shall not be unreasonably withheld), nor shall the Company be liable in any such case for any such loss, claim, damage, liability or action to the extent that it arises out of or is based upon a Violation that occurs in reliance upon and in conformity with written information furnished expressly for use in connection with such registration by any such Holder, underwriter, controlling person or other aforementioned person.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, each of its directors, each of its officers who has signed the registration statement, each person, if any, who controls the Company within the meaning of the Act, legal counsel and accountants for the Company, any underwriter, any other Holder selling securities in such registration statement and any controlling person of any such underwriter or other Holder, against any losses, claims, damages or liabilities (joint or several) to which any of the foregoing persons may become subject, under the Act, the 1934 Act, any state securities laws or any rule or regulation promulgated under the Act, the 1934 Act or any state securities laws, insofar as such losses, claims, damages or liabilities (or actions in respect thereto) arise out of or are based upon any Violation, in each case to the extent (and only to the extent) that such Violation occurs in reliance upon and in conformity with written information furnished by such Holder expressly for use in connection with such registration; and each such Holder will reimburse any person intended to be indemnified pursuant to this subsection l.8(b) for any legal or other expenses reasonably incurred by such person in connection with investigating or defending any such loss, claim, damage, liability or action as such expenses are incurred; provided, however, that the indemnity agreement contained in this subsection l.8(b) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Holder (which consent shall not be unreasonably withheld), and provided that in no event shall any indemnity under this subsection l.8(b) exceed the gross proceeds from the offering received by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 1.8 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 1.8, deliver to the indemnifying party a written notice of the commencement thereof and the indemnifying party shall have the right to participate in and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one (1) separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such proceeding. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action, if prejudicial to its ability to defend such action, shall relieve such indemnifying party of any liability to the indemnified party under this Section 1.8 to the extent of such prejudice, but the omission to so deliver written notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 1.8.

(d) If the indemnification provided for in this Section 1.8 is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any loss, liability, claim, damage or expense referred to herein, then the indemnifying party, in lieu of

indemnifying such indemnified party hereunder, shall contribute to the amount paid or payable by such indemnified party as a result of such loss, liability, claim, damage or expense in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and the indemnified party on the other hand in connection with the statements or omissions that resulted in such loss, liability, claim, damage or expense, as well as any other relevant equitable considerations; provided, however, that (i) no contribution by any Holder, when combined with any amounts paid by such Holder pursuant to Section 1.8(b), shall exceed the gross proceeds from the offering received by such Holder and (ii) no person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Section 1.8(d), when combined with the amounts paid or payable by such Holder pursuant to Section 1.8(b), exceed the proceeds from the offering received by such Holder (net of any expenses paid by such Holder). The relative fault of the indemnifying party and the indemnified party shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

(f) The obligations of the Company and Holders under this Section 1.8 shall survive the completion of any offering of Registrable Securities in a registration statement under this Section 1 and otherwise.

1.10 Reports Under the 1934 Act. With a view to making available to the Holders the benefits of Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company agrees to:

(a) make and keep public information available, as those terms are understood and defined in Rule 144, at all times after the effective date of the Initial Offering;

(b) file with the SEC in a timely manner all reports and other documents required of the Company under the Act and the 1934 Act; and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) a written statement by the Company that it has complied with the reporting requirements of Rule 144 (at any time after ninety (90) days after the effective date of the first registration statement filed by the Company), the Act and the 1934 Act (at any time after it has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after it so qualifies), (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company and (iii) such other information as may be reasonably requested to avail any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration or pursuant to such form.

1.11 Assignment of Registration Rights. The rights to cause the Company to register Registrable Securities pursuant to this Section 1 may be assigned (but only with all related obligations) by a Holder to a transferee or assignee of such securities that (a) is an Affiliate, subsidiary, parent, partner, limited partner, retired partner or stockholder of a Holder, (b) is a Holder's family member or trust for the benefit of an individual Holder, or (c) after such assignment or transfer, holds at least one million (1,000,000) shares of Registrable Securities (appropriately adjusted for any stock split, dividend, combination or other recapitalization), provided: (i) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee or assignee and the securities with respect to which such registration rights are being assigned; (ii) such transferee or assignee agrees in writing to be bound by and subject to the terms and conditions of this Agreement, including, without limitation, the provisions of Section 1.12 below; and (iii) such assignment shall be effective only if immediately following such transfer the further disposition of such securities by the transferee or assignee is restricted under the Act.

1.12 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders holding a majority of the voting power (as determined in accordance with Section IV(B)(5)(a) of the Restated Certificate) represented by the Registrable Securities then held by all Holders (voting together as a single class and on an as-converted basis), enter into any agreement with any holder or prospective holder of any securities of the Company that would allow such holder or prospective holder (a) any registration rights the terms of which are equal to or more favorable than the registration rights granted to Holders hereunder or (b) to demand registration of their securities.

1.13 "Market Stand-Off" Agreement.

(a) Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the Company's Initial Offering and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (l80) days) (i) lend, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock (whether such shares or any such securities are then owned by the Holder or are thereafter acquired) held immediately prior to the effectiveness of the Registration Statement for such offering, or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Common Stock, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash or otherwise. The foregoing provisions of this Section 1.13 shall apply only to the Company's initial offering of equity securities, shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall only be applicable to the Holders if all officers, directors and greater than one percent (1%) stockholders of the Company enter into

similar agreements. The underwriters in connection with the Company's Initial Offering are intended third-party beneficiaries of this Section 1.13 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in the Company's Initial Offering that are consistent with this Section 1.13 or that are necessary to give further effect thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply to all Holders subject to such agreements pro rata based on the number of shares subject to such agreements.

In order to enforce the foregoing covenant, the Company may impose stop transfer instructions with respect to the Registrable Securities of each Holder (and the shares or securities of every other person subject to the foregoing restriction) until the end of such period. Notwithstanding the foregoing, in the event the Company is not an "emerging growth company" as defined in Section 101 of the Jumpstart Our Business Startups Act of 2012, and, if (i) during the last seventeen (17) days of the one hundred eighty (180)-day restricted period, the Company issues an earnings release or material news or a material event relating to the Company occurs; or (ii) prior to the expiration of the one hundred eighty (180)-day restricted period, the Company announces that it will release earnings results during the sixteen (16)-day period beginning on the last day of the one hundred eighty (180)-day period, the restrictions imposed by this Section 1.13 shall continue to apply until the expiration of the eighteen (18)-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event.

(b) Each Holder agrees that a legend reading substantially as follows shall be placed on all certificates representing all Registrable Securities of each Holder (and the shares or securities of every other person subject to the restriction contained in this Section 1.13):

> THE SECURITIES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A LOCK-UP PERIOD AFTER THE EFFECTIVE DATE OF THE ISSUER'S REGISTRATION STATEMENT FILED UNDER THE ACT, AS AMENDED, AS SET FORTH IN AN AGREEMENT BETWEEN THE COMPANY AND THE ORIGINAL HOLDER OF THESE SECURITIES, A COPY OF WHICH MAY BE OBTAINED AT THE ISSUER'S PRINCIPAL OFFICE. SUCH LOCK-UP PERIOD IS BINDING ON TRANSFEREES OF THESE SHARES.

1.14 Termination of Registration Rights. No Holder shall be entitled to exercise any right provided for in this Section 1 (a) after four (4) years following the consummation of the Initial Offering, (b) as to any Holder, such earlier time after the Initial Offering at which such Holder (i) can sell all shares held by it in compliance with Rule 144(b)(1)(i) or (ii) holds one percent (1%) or less of the Company's outstanding Common Stock and all Registrable Securities held by such Holder (together with any Affiliate of the Holder with whom such Holder must aggregate its sales under Rule 144) can be sold in any three (3) month period without registration in compliance with Rule 144 or (c) after the consummation of a Liquidation Event, as that term is defined in the Restated Certificate.

2. Covenants of the Company.

2.1 Delivery of Financial Statements. The Company shall, upon request, deliver to each Investor (or transferee of an Investor) that holds at least 4,000,000 shares of Registrable Securities (appropriately adjusted for any stock split, dividend, combination or other recapitalization) (a "Major Investor"):

(a) as soon as practicable, but in any event within ninety (90) days after the end of each fiscal year of the Company, an income statement for such fiscal year, a balance sheet of the Company and statement of stockholders' equity as of the end of such year, and a statement of cash flows for such year, such year-end financial reports to be in reasonable detail, prepared in accordance with generally accepted accounting principles ("GAAP") consistently applied and setting forth in each case in comparative form the figures for the previous fiscal year, all in reasonable detail, and audited and certified by independent public accountants of nationally recognized standing selected by the Company;

(b) as soon as practicable, but in any event within forty-five (45) days after the end of each of the first three (3) quarters of each fiscal year of the Company, an unaudited income statement, statement of cash flows for such fiscal quarter and an unaudited balance sheet as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(c) within thirty (30) days of the end of each month, an unaudited income statement and statement of cash flows for such month, and an unaudited balance sheet as of the end of such month, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP) and with a comparison to plan;

(d) as soon as practicable, but in any event prior to the end of each fiscal year, a budget and business plan for the next fiscal year, prepared on a monthly basis, including balance sheets, income statements and statements of cash flows for such months and, as soon as prepared, any other budgets or revised budgets prepared by the Company; and

(e) as soon as practicable but in any event within thirty (30) days after the end of each fiscal year of the Company, a statement showing the number of shares of each class and series of capital stock and securities convertible into or exercisable for shares of capital stock outstanding at the end of the period, the Common Stock issuable upon conversion or exercise of any outstanding securities convertible or exercisable for Common Stock and the exchange ratio or exercise price applicable thereto, and the number of shares of issued stock options and stock options not yet issued but reserved for issuance, if any, all in sufficient detail as to permit the recipient to calculate their respective percentage equity ownership in the Company.

2.2 Inspection. The Company shall permit each Major Investor, at such Major Investor's expense, to visit and inspect the Company's properties, to examine its books of account and records and to discuss the Company's affairs, finances and accounts with its officers, all at such reasonable times as may be requested by the Major Investor; provided, however, that the Company shall not be obligated pursuant to this Section 2.2 to provide access

to any information that it reasonably considers to be a trade secret or similar confidential information until the Major Investor signs a confidentiality agreement in a form reasonably acceptable to the Company.

2.3 Termination of Information and Inspection Covenants. The covenants set forth in Sections 2.1 and 2.2 shall terminate and be of no further force or effect upon the earlier to occur of (i) the consummation of a Qualified Public Offering (as defined in the Restated Certificate) or (ii) the consummation of a Liquidation Event, (as defined in Restated Certificate).

2.4 Right of First Offer. Subject to the terms and conditions specified in this Section 2.4, the Company hereby grants to each Major Investor a right of first offer with respect to future sales by the Company of its Shares (as hereinafter defined). For purposes of this Section 2.4, the term "Major Investor" includes any general partners and affiliates of a Major Investor. A Major Investor shall be entitled to apportion the right of first offer hereby granted it among itself and its partners and Affiliates in such proportions as it deems appropriate.

Each time the Company proposes to offer any shares of, or securities convertible into or exchangeable or exercisable for any shares of, its capital stock (including, without limitation, any unit of debt or equity securities) ("Shares"), the Company shall first make an offering of such Shares to each Major Investor in accordance with the following provisions:

(a) The Company shall deliver a notice in accordance with Section 3.5 ("Notice") to the Investors stating (i) its bona fide intention to offer such Shares, (ii) the number of such Shares to be offered and (iii) the price and terms upon which it proposes to offer such Shares.

(b) By written notification received by the Company within twenty (20) calendar days after the giving of Notice, each Major Investor may elect to purchase, at the price and on the terms specified in the Notice, up to that portion of such Shares that equals the proportion that the number of shares of Common Stock issued and held, or issuable upon conversion of Preferred Stock then held, by such Investor bears to the total number of shares of Common Stock of the Company then outstanding (assuming full conversion and exercise of all convertible and exercisable securities then outstanding). The Company shall promptly, in writing, inform each Major Investor that elects to purchase all the shares available to it (a "Fully-Exercising Major Investor") of any other Major Investor's failure to do likewise. During the ten (10) day period commencing after such information is given, each Fully-Exercising Major Investor may elect to purchase that portion of the Shares for which Major Investors were entitled to subscribe, but which were not subscribed for by the Major Investors, that is equal to the proportion that the number of shares of Common Stock held by such Fully-Exercising Major Investor (assuming full conversion and exercise of all convertible and exercisable securities then outstanding) bears to the number of shares of Common Stock held by all Fully-Exercising Major Investors (assuming full conversion and exercise of all convertible and exercisable securities then outstanding).

(c) If all Shares that Major Investors are entitled to obtain pursuant to subsection 2.4(b) are not elected to be obtained as provided in subsection 2.4(b)

hereof, the Company may, during the ninety (90) day period following the expiration of the period provided in subsection 2.4(b) hereof, offer the remaining unsubscribed portion of such Shares to any person or persons at a price not less than that, and upon terms no more favorable to the offeree than those, specified in the Notice. If the Company does not enter into an agreement for the sale of the Shares within such period, or if such agreement is not consummated within sixty (60) days of the execution thereof, the right provided hereunder shall be deemed to be revived and such Shares shall not be offered unless first reoffered to the Major Investors in accordance herewith.

(d) The right of first offer in this Section 2.4 shall not be applicable to (i) the issuance or sale of shares of Common Stock (or options therefor) to employees, directors, consultants and other service providers for the primary purpose of soliciting or retaining their services pursuant to plans or agreements approved by the Company's Board of Directors (which approval shall include the affirmative vote of the Series 4 Director, Series 5 Director, Series 6 Director or Series 7 Director (each as defined in that certain Amended and Restated Voting Agreement, by and between the Company and certain stockholders, dated as of the date hereof, collectively, the "Preferred Directors"); (ii) the issuance of securities pursuant to a bona fide, firmly underwritten public offering of shares of Common Stock registered under the Act, (iii) the issuance of securities pursuant to the conversion or exercise of convertible or exercisable securities outstanding as of the date hereof, (iv) the issuance of securities in connection with a bona fide business acquisition of or by the Company, whether by merger, consolidation, sale of assets, sale or exchange of stock or otherwise, approved by the Company's Board of Directors (which approval shall include the vote of a Preferred Director), (v) the issuance and sale of Series 7 Preferred Stock pursuant to the Series 7 Purchase Agreement, (vi) the issuance of stock, warrants or other securities or rights to persons or entities with which the Company has business relationships, provided such issuances are primarily for non-equity financing purposes (which approval shall include the affirmative vote of a Preferred Director), or (vii) the issuance of securities to non-Affiliates that are specifically deemed not to be subject to the right of first offer in this Section 2.4 by the written consent or affirmative vote of the Major Investors holding greater than fifty percent (50%) of the Registrable Securities then held by all Major Investors. In addition to the foregoing, the right of first offer in this Section 2.4 shall not be applicable with respect to any Investor in any subsequent offering of Shares if (i) at the time of such offering, the Investor is not an "accredited investor," as that term is then defined in Rule 501(a) of the Act and (ii) such offering of Shares is otherwise being offered only to accredited investors.

(e) The rights provided in this Section 2.4 may not be assigned or transferred by any Major Investor; provided, however, that a Major Investor that is a venture capital fund may assign or transfer such rights to its Affiliates.

(f) The covenants set forth in this Section 2.4 shall terminate and be of no further force or effect upon the consummation of (i) a Qualified Public Offering or (ii) a Liquidation Event.

2.5 D&O Insurance. The Company shall have in place at all times at least $5,000,000 in directors and officers insurance policies or an amount approved by the Board of Directors, including a majority of the Preferred Directors.

2.6 Proprietary Information and Inventions Agreements. The Company shall require all employees and consultants with access to confidential information to execute and deliver a Proprietary Information and Inventions Agreement in substantially the form approved by the Company's Board of Directors.

2.7 Employee Agreements. Unless approved by the Board of Directors of the Company, all future employees of the Company who shall purchase, or receive options to purchase, shares of Common Stock following the date hereof shall be required to execute stock purchase or option agreements providing for (a) vesting of shares over a four (4) year period with the first twenty five percent (25%) of such shares vesting following twelve (12) months of continued employment or services, and the remaining shares vesting in equal monthly installments over the following thirty six (36) months thereafter and (b) a one hundred and eighty (180)-day lockup period (plus an additional period of up to eighteen (18) days) in connection with the Company's initial public offering; provided, however, that all future equity issuances to current employees of the Company may vest in equal monthly installments over a forty eight (48) month period; provided further, however, that all future equity issuances to current employees of the Company that have not provided twelve (12) months of continued employment or services to the Company shall provide for vesting of shares over a four (4) year period with the first twenty five percent (25%) of such shares following twelve (12) months of continued employment or services. The Company shall retain a right of first refusal on transfers until the Company's initial public offering and the right to repurchase unvested shares at cost. Notwithstanding the foregoing, any future grants of Common Stock equivalents to Jeffrey Dunn, Leonard Rudolf or Mark Reiley (collectively, the "Founders") shall provide that all of such unvested Common Stock equivalents held by a Founder shall vest immediately upon a change of control transaction where the stockholders of the Company immediately prior to the consummation of such transaction do not own 50% of the shares of capital stock of the surviving entity, provided that the Founder agrees to work for the acquirer or the surviving entity to facilitate an integration of the Company into the acquirer or surviving entity for a period not to exceed six (6) months unless otherwise agreed to by the Founder, the Company and the acquirer or surviving entity.

2.8 Preservation of Qualified Small Business Stock Status. The Company shall use commercially reasonable efforts to not take, or fail to take, any action which would cause the Preferred Stock (or Common Stock issuable upon conversion of Preferred Stock (the "IOC Common")) to fail to qualify as "qualified small business stock" within the meaning of Sections 1045 and 1202 of the Code and Sections 18152.5 and 18038.5 of the California Revenue and Taxation Code; provided that, notwithstanding the foregoing, the Company shall not be obligated to take any action, or refrain from any action, which the Board of Directors, including at least one Preferred Director, approves after taking into consideration the relevant "qualified small business stock" issues. In the event that the Company is or becomes aware that the Preferred Stock and/or IOC Common will or may fail to qualify as "qualified small business stock" within the meaning of Sections 1045 and 1202 of the Code or Sections 18152.5 and 18038.5 of the California Revenue and Taxation Code, the Company will promptly notify the holders of the Preferred Stock and/or IOC Common and will take such action as may be reasonably requested by such holders to avoid any loss of benefit attributable to such change.

2.9 Board Expenses. The Company shall reimburse the nonemployee directors for all reasonable out-of-pocket expenses incurred in connection with attending meetings of the Board of Directors.

2.10 Board Committees. The Series 7 Director (as defined in that certain Amended and Restated Voting Agreement, by and between the Company and certain stockholders, dated as of the date hereof) shall be entitled in such person's discretion to be a member of any Board of Directors committee.

2.11 Termination of Certain Covenants. The covenants set forth in Sections 2.5, 2.6, 2.7, 2.8, 2.9 and 2.10 shall terminate and be of no further force or effect upon the consummation of (i) a Qualified Public Offering or (ii) a Liquidation Event.

3. Miscellaneous.

3.1 Successors and Assigns. Except as otherwise provided herein, the terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the parties (including transferees of any shares of securities). Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement.

3.2 Governing Law. This Agreement shall be governed by and construed under the laws of the State of Delaware as applied to agreements among Delaware residents entered into and to be performed entirely within Delaware.

3.3 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

3.4 Titles and Subtitles. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

3.5 Notices. All notices and other communications given or made pursuant hereto shall be in writing and shall be deemed effectively given: (i) upon personal delivery to the party to be notified, (ii) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient; if not, then on the next business day, (iii) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (iv) one (1) business day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt and (ii) for persons located outside the United States, two (2) business days after deposit with an internationally recognized overnight courier, with written verification of receipt. All communications shall be sent to the respective parties at the addresses set forth on the signature pages attached hereto (or at such other addresses as shall be specified by notice given in accordance with this Section 3.5).

3.6 Expenses. If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees, costs and necessary disbursements in addition to any other relief to which such party may be entitled.

3.7 Entire Agreement; Amendments and Waivers. This Agreement (including the Exhibits hereto, if any) constitutes the full and entire understanding and agreement among the parties with regard to the subjects hereof and thereof. Any term of this Agreement (other than Section 2.1, Section 2.2, Section 2.3, Section 2.4 and 3.10) may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively) only with the written consent of the Company and the holders of at least a majority of the voting power (as determined in accordance with Section IV(B)(5)(a) of the Restated Certificate) of Preferred Stock outstanding (voting together as a single class and on an as-converted to common basis). The provisions of Section 2.1, Section 2.2, Section 2.3 and Section 2.4 may be amended or waived (either generally or in a particular instance and either retroactively or prospectively) only with the written consent of the Company and the holders of at least a majority of the voting power (as determined in accordance with Section IV(B)(5)(a) of the Restated Certificate) of Preferred Stock outstanding that is held by all of the Major Investors (voting together as a single class and on an as-converted to common basis). The provisions of Section 3.10 may be amended or waived (either generally or in a particular instance and either retroactively or prospectively) only with the written consent of Novo A/S. Notwithstanding the foregoing, this Agreement may not be amended or terminated and the observance of any term hereof may not be waived with respect to any Major Investor without the written consent of such Major Investor, unless such amendment, termination, or waiver applies to all Major Investors in the same fashion (it being agreed that (i) a waiver of the provisions of Section 2.4 with respect to a particular transaction shall be deemed to apply to all Major Investors in the same fashion if such waiver does so by its terms, notwithstanding the fact that certain Major Investors may nonetheless, by agreement with the Company, purchase securities in such transaction and (ii) any amendment of the definition of Major Investor which would result in any Major Investor losing its status as a Major Investor shall require the consent of such adversely impacted Major Investor). Any amendment or waiver effected in accordance with this paragraph shall be binding upon each holder of any securities, each future holder of all such securities, and the Company. Notwithstanding this Section 3.7, no consent shall be necessary to add holders of the Company's Preferred Stock as signatories to this Agreement and to update Schedule A accordingly.

3.8 Severability. If one or more provisions of this Agreement are held to be unenforceable under applicable law, such provision(s) shall be excluded from this Agreement and the balance of the Agreement shall be interpreted as if such provision(s) were so excluded and shall be enforceable in accordance with its terms.

3.9 Aggregation of Stock. All securities held or acquired by affiliated entities (including affiliated venture capital funds) or persons shall be aggregated together for the purpose of determining the availability of any rights under this Agreement.

3.10 Limitation of Liability; Freedom to Operate Affiliates. The total 3.10 liability, in the aggregate, of any of Novo A/S and its respective officers, directors, employees and agents, for any and all monetary claims, losses, costs or damages, including attorneys' and accountants' fees and expenses and costs of any nature whatsoever or claims or

expenses resulting from or in any way related to this Agreement from any cause or causes shall be several and not joint with the other Stockholders and shall not exceed the aggregate purchase price paid to the Company by Novo A/S for securities of the Company, under the Series 7 Purchase Agreement or any other contract. It is intended that this limitation apply to any and all monetary liabilities or causes of action however alleged or arising, unless otherwise prohibited by law; provided, however, that this Section 3.10 shall in no way limit the Company's right to equitable relief, including injunctive relief and specific performance from Novo A/S. Nothing in this Agreement or the Ancillary Agreements (as defined in the Purchase Agreement) shall restrict Novo A/S's freedom to operate any of its affiliates (including any such affiliate that is a potential competitor of the Company).

3.11 Termination of Prior Agreement. Upon the effectiveness of this Agreement, the Prior Rights Agreement shall terminate and be of no further force and effect, and shall be superseded and replaced in its entirety by this Agreement.

3.12 Preemptive Rights Waiver. Each Investor hereby waives any rights to notice of and any rights to participate in the issuance of shares of Series 7 Preferred Stock pursuant to the Series 7 Purchase Agreement that such Investor may have, and, furthermore, each Investor, on its behalf and on behalf of all Major Investors (as such term is defined in the Prior Rights Agreement), hereby waives all rights set forth in Section 2.4 of the Prior Rights Agreement with respect to the transactions contemplated by the Series 7 Purchase Agreement.

[Remainder of page intentionally left blank.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

SI-BONE, INC.

By: /s/ Jeffrey Dunn
Name: Jeffrey Dunn
Title: Chief Executive Officer

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTOR:

SKYLINE VENTURE PARTNERS V, L.P.

By: Skyline Venture Management V, LLC
Its: General Partner

By: /s/ John G. Freund
John G. Freund
Its: Managing Director

Address: _____

_____

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTOR:

MONTREUX EQUITY PARTNERS IV, LP

By: Montreux Equity Management IV, LLC, its General Partner

By: /s/ Daniel K Turner III
Name: Daniel K. Turner III
Title: Managing Member

Address:

Montreux Equity Partners
One Ferry Building
Suite 255
San Francisco, CA 94111

MONTREUX IV ASSOCIATES, LLC

By: Montreux Equity Management IV, LLC, its General Partner

By: /s/ Daniel K Turner III
Name: Daniel K. Turner III
Title: Managing Member

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTOR:

MONTREUX IV ASSOCIATES IV, LLC

By: Montreux Equity Management IV, LLC, its General Partner

By: /s/ Daniel K Turner III
Name: Daniel K. Turner III
Title: Managing Member

Address: [Address intentionally omitted.]

INVESTOR:

NOVO A/S

By: /s/ Thomas Dyrberg
Name: Thomas Dyrberg
Title: Managing Partner Novo Ventures

Address: [Address intentionally omitted.]

INVESTOR:

KEITH VALENTINE

By: /s/ Keith Valentine
Name: K. Valentine
Title:

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTOR:

OrbiMed Private Investments V, LP

By: OrbiMed Capital GP V LLC,
its General Partner

By: OrbiMed Advisors LLC,
its Managing Member

By: /s/ Jonathan Silverstein
Name: Jonathan Silverstein
Title: Member

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTOR:

Redline Capital Management S.A.

By: /s/ Buyanov A.
Name: Buyanov A.
Title: Managing Partner

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTOR:

Arboretum Ventures IV, L.P.

By Arboretum Investment Manager IV, LLC
Its General Partner

By /s/ Timothy Petersen
Timothy Petersen
Its Managing Director

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTOR:

Gregory K. Hinckley and Mary C. Hinckley as Community Property with the Right of Survivorship

By: /s/ Gregory K. Hinckley
/s/ Mary C. Hinckley
Name: Gregory K. Hinckley and Mary C. Hinckley
Title:

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

Dennis M. Vaughan Revocable Trust

By: /s/ Dennis M. Vaughan
Name: Dennis M. Vaughan
Title: Trustee

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

STEPHEN COOPER M.D. INC. 401K PROFIT SHARING PENSION PLAN

By: /s/ Stephen Cooper, M.D.
Name: Stephen Cooper
Title: Trustee

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

JONATHAN B. ELLMAN

/s/ Jonathan B. Ellman

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

ISAAC APPLBAUM

/s/ Isaac Applbaum

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

JAY CHATHAM

/s/ Jay Chatham

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

G&H PARTNERS

By: /s/ Stefan J. Palmer Jr.
Name: Stefan J. Palmer Jr.
Title: General Partner and Director of Investments

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

MATTHEW HOWARD DAHNKE

/s/ Matthew Howard Dahnke

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

MIN UNG YOON

/s/ Min Ung Yoon

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

ANNETTE BLANDFORD & TERESA JOHNSON

By: /s/ Annette Blandford
Name: Annette Blandford/Teresa Johnson
Title: Owners

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

LORNA W. STROTZ AND CHARLES R. STROTZ, TRUSTEES STROTZ FAMILY LIVING TRUST UNDER AGREEMENT DATED 10/15/2002

By: /s/ Lorna Strotz /s/ C.R. Strotz
Name: Lorna Strotz and C.R. Strotz
Title: Trustees

Address: [Address intentionally omitted.]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

SYLVIE RUDOLF

/s/ Sylvie Rudolf

Address: _____

_____

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first above written.

THE 1996 KLISZEWSKI FAMILY TRUST

By: /s/ Mark A. Kliszewski
Name: Mark A. Kliszewski
Title: Trustor

Address: [Address intentionally omitted.]

Schedule A

INBONE Technologies, Inc.
Berkeley Orthopaedic Medical Profit Sharing Plan, F.B.O. Charles R. Strotz
Barry Jacobson
The 1996 Kliszewski Family Trust
Shirin & Dave Kollar
Ross Myerson
Judd Myerson
Timothy C. Reiley
Sylvie Rudolf
Brian Todd True
Mark Reiley
Annette Blandford & Teresa E. Johnson
John T. & Janet A. Mattson
Min Ung Yoon
National Financial Services, LLC, FBO Min Yoon
National Financial Services, LLC, FBO Leslie Kennedy
William L. Brizendine and Emily L. Brizendine, Trustees of the William and Emily Brizendine Trust
Terry Hensle & Elizabeth Reiley
JPMCC fbo Terry W. Hensle IRA
Matthew H. Dahnke
Jay Chatham
John & Dana Kirby
Jonathan B. Ellman
Rosalie Auster & Simon Auster
Frank Scherkenbach and Kimberly McGovern
Peterschmidt Ventures LLC
Jayshree Desai
Wayne and Christine Guidici
Joseph and Elena Caselle TTEEs of the Caselle Family Trust DTD 6/6/03
IRA Services Trust Company custodian FBO Joseph Caselle
Matthew A. Reiley
Richard W. Dunn
Isaac Applbaum
Dennis M. Vaughan Revocable Trust
Dennis M. Vaughan
Braxton Robert Richardson III
Daniel P. Murray
Jerry Floyd
Skyline Venture Partners Fund V, L.P.
Leonard Rudolf
G&H Partners
Greg Hinckley
Gregory K. Hinckley and Mary C. Hinckley as Community Property with the Right of Survivorship

Citigroup Global Markets Inc. as IRA Rollover Custodian FBO Landis Dibble, ACCT #240-66176
Joseph Caselle
Hansen Le
Citigroup Global Markets Inc. FBO Frederick Dibble SEP IRA
O. Barry McKinley & Gail G. McKinley, The McKinley Family Trust U/A Dated 1/24/97
Lily Chen, MD
Christopher J. Redmond
The 1996 Kliszewski Family Trust
Will Griffin
Sheldon C. Brown & Janet Roth Brown Revocable Trust
Stephen Cooper
Stephen Cooper M.D. Inc. 401k Profit Sharing Pension Plan
Montreux Equity Partners IV, LP
INBONE Technologies, Inc.
Montreux IV Associates, LLC
Novo A/S
OrbiMed Private Investments V, LP
Timothy E. Davis, Jr.
Redline Capital Management S.A.
Shea Ventures Opportunity Fund II, LP
Andrew Chase Trustee of the Andrew Chase 2005 Revocable Trust UAD 3/29/05
Tatiana Evtushenkova
Jonathan McHardy
Bengala Investment S.A.
Alastair Cookson
Brian Dickie
David Spector
The Dennis M. Vaughan Revocable Trust, Dennis M. Vaughan TTEE
The Mattson Trust
Arboretum Ventures IV, L.P.
Montreux IV Associates IV, LLC
Keith Valentine
Sylvie Rudolf
The 1996 Kliszewski Family Trust

Exhibit 10.20

LOAN AGREEMENT

Dated as of October 13, 2017

between

SI-BONE, INC.

(as ***Borrower***),

and

BIOPHARMA CREDIT INVESTMENTS IV SUB LP

(as ***Lender***)

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LOAN AGREEMENT

THIS LOAN AGREEMENT (this "**Agreement**"), dated as of October 13, 2017 (the "**Effective Date**") by and among SI-BONE, INC., a Delaware corporation ("**Borrower**"), and BIOPHARMA CREDIT INVESTMENTS IV SUB LP, a Cayman Islands limited partnership ("**Lender**"), provides the terms on which Lender shall make, and Borrower shall repay, the Credit Extensions (as hereinafter defined). The parties hereto agree as follows:

1. ACCOUNTING AND OTHER TERMS

Except as otherwise expressly provided herein, all accounting terms not otherwise defined in this Agreement shall have the meanings assigned to them in conformity with Applicable Accounting Standards. Calculations and determinations must be made following Applicable Accounting Standards. No change in the accounting principles used in the preparation of any financial statement hereafter adopted by Borrower (including any change in Applicable Accounting Standards that would require leases that would be classified as operating leases under Applicable Accounting Standards on the Tranche A Closing Date to be reclassified as capital leases, it being understood and agreed by Borrower and Lender that all leases will be accounted for without giving effect to Topic 842 (Leases) of the Financial Accounting Standards Board) shall be given effect for purposes of measuring compliance with any provision of Section 5.12 or Section 6 unless Borrower and Lender agree to modify such provisions to reflect such changes in Applicable Accounting Standards and, unless such provisions are so modified, all financial statements, Compliance Certificates and similar documents provided hereunder shall be provided together with a reconciliation between the calculations and amounts set forth therein before and after giving effect to such change in Applicable Accounting Standards. Capitalized terms not otherwise defined in this Agreement shall have the meanings set forth in Section 13. All other terms contained in this Agreement, unless otherwise indicated, shall have the meaning provided by the Code to the extent such terms are defined therein. All references to "Dollars" or "$" are United States Dollars, unless otherwise noted.

2. LOANS AND TERMS OF PAYMENT

2.1. Promise to Pay.

Borrower hereby unconditionally promises to pay Lender, the outstanding principal amount of all of the Term Loans advanced to Borrower by Lender and accrued and unpaid interest thereon and any other amounts due hereunder as and when due in accordance with this Agreement.

2.2. Term Loans.

(a) Availability. Subject to the terms and conditions of this Agreement (including Sections 3.1, 3.2 and 3.3):

(i) Tranche A Loan. Lender agrees to make a term loan to Borrower on the Tranche A Closing Date in the principal amount (the "**Tranche A Loan Amount**") of Forty Million Dollars ($40,000,000.00) (the "**Tranche A Loan**"); and

(ii) Tranche B Loan. At Borrower's option, Lender agrees to make a term loan to Borrower on the Tranche B Closing Date in a principal amount equal to the Tranche B Loan Amount (the "**Tranche B Loan**").

After repayment, no Term Loan may be re-borrowed.

(b) Repayment. Borrower shall make nine (9) equal quarterly payments of principal of the Term Loans commencing on the Payment Date that is the 36th-month anniversary of the Tranche A Closing Date. All unpaid principal with respect to the Term Loans (and, for the avoidance of doubt, all accrued and unpaid interest, all due and unpaid Lender Expenses and any other amounts payable under the Loan Documents) is due and payable in full on the Term Loan Maturity Date. The Term Loans may be prepaid only in accordance with Section 2.2(c), except as provided in Section 8.1.

(c) Prepayment of Term Loans.

(i) From and after the Tranche A Closing Date, Borrower shall have the option, at any time, to prepay, in whole but not in part, the Term Loans advanced by Lender under this Agreement, provided that (A) Borrower provides written notice to Lender of its election (which shall be irrevocable unless Lender otherwise consents in writing) to prepay all of the Term Loans at least five (5) Business Days prior to such prepayment, in an amount equal to the sum of the unpaid principal amount prepaid and any accrued and unpaid interest on the principal amount prepaid and (B) such prepayment shall be accompanied by any amounts payable pursuant to Section 2.2(e) or Section 2.2(f) (as applicable) and all other amounts payable or accrued and not yet paid under this Agreement and the other Loan Documents.

(ii) Upon a Change of Control, Borrower shall promptly, and in any event no later than two (2) Business Days after the consummation of such Change of Control, notify Lender in writing of the occurrence of a Change of Control, which notice shall include reasonable detail as to the nature, timing and other circumstances of such Change of Control (such notice, a "**Change of Control Notice**"). Borrower shall prepay all of the Term Loans in full, no later than ten (10) Business Days after delivery to Lender of the Change of Control Notice, in an amount equal to (A) the sum of all unpaid principal and any accrued and unpaid interest with respect to the Term Loans, plus (B) any amounts payable pursuant to Section 2.2(e) or Section 2.2(f) (as applicable) and all other amounts payable or accrued and not yet paid under this Agreement and the other Loan Documents.

(d) Prepayment Application. Any prepayment by Borrower pursuant Section 2.2(c) shall be accompanied by, and any prepayment by Borrower pursuant to Section 6.1(o) or Section 6.17(c) shall include, accrued and unpaid interest on the principal amount to be prepaid to the date of payment in full. Any prepayment of the Term Loans pursuant to Section 2.2(c), Section 6.1(o) or Section 6.17(c) (together with the accompanying Makewhole Amount that is payable pursuant to Section 2.2(e), if applicable, and the Prepayment Premium that is payable pursuant to Section 2.2(f)) shall be paid to Lender for application to the Obligations in the following order: (i) first, to due and unpaid Lender Expenses, (ii) second, to accrued and unpaid interest at the Default Rate, (iii) third, to accrued and unpaid interest at the non-Default Rate, (iv) fourth, to the applicable Prepayment Premium; (v) fifth, to the Makewhole Amount, if applicable, (vi) sixth, to the outstanding principal amount of the Term Loans and (vii) seventh, to any remaining amounts then due and payable hereunder.

(e) Makewhole Amount. Any prepayment of the Term Loans by Borrower occurring on or prior to the 30th-month anniversary of the Tranche A Closing Date (i) pursuant to Section 2.2(c), Section 6.1(o) or Section 6.17(c) or (ii) as a result of the acceleration of the Term Loan Maturity Date pursuant to Section 8.1(a) shall, in any such case, be accompanied by payment of the Makewhole Amount.

(f) Prepayment Premium. Any prepayment of the Term Loans by Borrower (i) pursuant to Section 2.2(c), Section 6.1(o) or Section 6.17(c) or (ii) as a result of the acceleration of the Term Loan Maturity Date pursuant to Section 8.1(a) shall, in any such case, be accompanied by payment of the applicable Prepayment Premium.

2.3. Payment of Interest on the Credit Extension.

(a) Interest Rate; 360 Day Year.

(i) Subject to Section 2.3(b), the principal amount outstanding under the Term Loans shall accrue interest at a fixed per annum rate equal to eleven and one-half percent (11.50%) per annum (which rate, subject to clause (b) below, shall be fixed for the duration of the Term Loans), which interest shall be payable quarterly in arrears in accordance with this Section 2.3.

(ii) Interest shall accrue on each Term Loan commencing on, and including, the day on which such Term Loan is made, and shall accrue on each Term Loan, or any portion thereof, for the day on which such Term Loan or such portion is paid. Interest shall be computed on the basis of a year of 360 days and the actual number of days elapsed.

(b) Default Rate. Immediately upon the occurrence and during the continuance of an Event of Default (and without notice to Borrower or demand by Lender for payment thereof), the Obligations shall bear interest at a rate per annum which is five percentage points (5.00%) above the rate that is otherwise applicable thereto (the "**Default Rate**"), and such interest shall be payable entirely in cash on demand of Lender. Payment or acceptance of the increased interest rate provided in this Section 2.3(b) is not a permitted alternative to timely payment and shall not constitute a waiver of any Event of Default or otherwise prejudice or limit any rights or remedies of Lender.

(c) Payments. Except as otherwise expressly provided herein, all loan payments by Borrower hereunder shall be made to such bank account of Lender as Lender may designate by notice from time to time to Borrower on the date specified herein. Unless otherwise provided, interest is payable quarterly on the Payment Date of each calendar quarter. Payments of principal or interest received after 2:00 p.m. on such date are considered received at the opening of business on the next Business Day. When a payment is due on a day that is not a Business Day, the payment is due the next Business Day and additional fees or interest, as applicable, shall continue to accrue until paid. All payments to be made by Borrower hereunder or under any other Loan Document, including payments of principal and interest made hereunder and pursuant to any other Loan Document, and all fees, expenses, indemnities and reimbursements, shall be made without set-off, recoupment or counterclaim, in lawful money of the United States and in immediately available funds.

2.4. Expenses. Borrower shall pay to Lender, all Lender Expenses incurred through and after the Tranche A Closing Date, promptly after receipt of a written demand therefore setting forth in reasonable detail such Lender Expenses.

2.5. Requirements of Law; Increased Costs; Mitigation. In the event that any applicable Change in Law:

(a) Does or shall subject Lender to any Indemnified Tax of any kind whatsoever with respect to this Agreement or any Term Loan made hereunder (except Excluded Taxes, Connection Income Taxes and Other Connection Taxes);

(b) Does or shall impose, modify or hold applicable any reserve, capital requirement, special deposit, compulsory loan or similar requirements against assets held by, or deposits or other liabilities in or for the account of, advances or loans by, or other credit extended by, or any other acquisition of funds by, Lender; or

(c) Does or shall impose on Lender any other condition (other than Taxes); and the result of any of the foregoing is to increase the cost to Lender (as determined by Lender in good faith using calculation methods customary in the industry) of making, renewing or maintaining any Term Loan or to reduce any amount receivable in respect thereof or to reduce the rate of return on the capital of Lender or any Person controlling Lender,

then, in any such case, Lender shall promptly notify Borrower in writing of the event by reason of which it has incurred additional costs or has reduced amounts receivable or rate of return, and submit to Borrower a certificate as to such additional costs or has reduced amounts receivable or rate of return containing the calculation thereof in reasonable detail, which shall be conclusive in the absence of manifest error. Lender shall first, prior to Borrower being required to take any action under this Section 2.5, take commercially reasonable actions to mitigate the additional costs or reduced amounts receivable or rate of return, including assigning all of its rights and delegating and transferring all of its obligations hereunder to an existing Affiliate of Lender that would not be subject to such, or would be subject to less, additional costs or reduced amounts receivable or rate of return, if any. Borrower shall promptly pay to Lender, subject to the terms of this Section 2.5, any undisputed additional amounts necessary to compensate Lender for such additional cost or reduced amounts receivable or rate of return as reasonably determined by Lender with respect to this Agreement or the Term Loans made hereunder.

The provisions hereof shall survive the termination of this Agreement and payment of the outstanding Term Loans and all other Obligations. Failure or delay on the part of Lender to demand compensation for any increased costs or reduction in amounts received or receivable or reduction in return on capital under this Section 2.5 shall not constitute a waiver of Lender's right to demand such compensation; provided that Borrower shall not be under any obligation to compensate Lender under this Section 2.5 with respect to increased costs or reductions with respect to any period prior to the date that is 180 days prior to the date of the delivery of the notice required pursuant to the foregoing provisions of this paragraph; provided, further, that the foregoing limitation shall not apply to any
increased costs or reductions arising out of the retroactive application of any Change in Law within such 180-day period.

2.6. Taxes; Withholding, etc.

(a) All sums payable by any Credit Party hereunder and under the other Loan Documents shall (except to the extent required by Requirements of Law) be paid free and clear of, and without any deduction or withholding on account of, any Tax imposed, levied, collected, withheld or assessed by any Governmental Authority. In addition, Borrower agrees to pay, and shall indemnify and hold Lender harmless from, Other Taxes, and within thirty (30) days after the date of paying such sum, Borrower shall furnish to Lender the original or a certified copy of a receipt evidencing payment thereof.

(b) If any Credit Party or any other Person is required by Requirements of Law to make any deduction or withholding on account of any Tax from any sum paid or payable by any Credit Party to Lender under any of the Loan Documents: (i) Borrower shall notify Lender in writing of any such requirement or any change in any such requirement promptly after Borrower becomes aware of it; (ii) Borrower shall make any such withholding or deduction; (iii) Borrower shall pay any such Tax before the date on which penalties attach thereto, such payment to be made (if the liability to pay is imposed on any Credit Party) for its own account or (if that liability is imposed on Lender, as the case may be) on behalf of and in the name of Lender in accordance with applicable Law; (iv) if the Tax is an Indemnified Tax, the sum payable by such Credit Party in respect of which the relevant deduction, withholding or payment of Indemnified Tax is required shall be increased to the extent necessary to ensure that, after the making of that deduction, withholding or payment (including any deductions for Indemnified Taxes applicable to additional sums payable under this Section 2.6(b)), Lender receives on the due date a net sum equal to what it would have received had no such deduction, withholding or payment of Indemnified Tax been required or made; and (v) within thirty (30) days after paying any sum from which it is required by Requirements of Law to make any deduction or withholding, and within thirty (30) days after the due date of payment of any Tax which it is required by clause (ii) or (iii) above to pay, Borrower shall deliver to Lender evidence reasonably satisfactory to Lender of such deduction, withholding or payment and of the remittance thereof to the relevant taxing or other Governmental Authority. Borrower shall indemnify Lender for the full amount of any Indemnified Taxes (including Indemnified Taxes imposed or asserted on or attributable to amounts payable under this Section 2.6(b)) paid by Lender and any liability (including penalties, interest and reasonable expenses) arising therefrom or with respect thereto whether or not such Indemnified Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. Any indemnification payment pursuant to this Section 2.6 shall be made within thirty (30) days from written demand therefor.

(c) If Lender is organized under the laws of the United States of America or any state thereof, Lender shall deliver to Borrower two (2) copies of Internal Revenue Service Form W-9. If Lender is not a "United States person" (as such term is defined in Section 7701(a)(30) of the IRC) for U.S. federal income Tax purposes, Lender shall deliver, and shall cause each applicable assignee thereof to deliver, to Borrower, on or prior to, the Tranche A Closing Date and, the date on which a Lender Transfer occurs, as applicable, and at such other times as may be necessary in the determination of Borrower (in the reasonable exercise of its discretion), two (2) properly completed and duly executed original copies of Internal Revenue Service Form W-8BEN, W-8BEN-E, W-8ECI or W-8IMY (along with Form W-9, W-8BEN-E or W-8BEN for each beneficial owner that will receive, directly or indirectly, a payment of principal, interest, fees or other amounts payable under any of the Loan Documents), or any successor forms, and such other documentation required under the IRC and reasonably requested by Borrower to establish the appropriate amount of any deduction or withholding of United States federal Tax, if any, with respect to any payments to such Lender of principal, interest, fees or other amounts payable under any of the Loan Documents, including any such additional documentation reasonably requested by Borrower as may be necessary for Borrower to comply with its obligations under FATCA. If Lender is required to deliver any forms, statements, certificates or other evidence with respect to United States federal Tax or backup withholding matters pursuant to this Section 2.6(c), Lender hereby agrees, from time to time after the initial delivery by Lender of such forms, certificates or other evidence, whenever a lapse in time, change in circumstances or law, or additional guidance by a Governmental Authority renders such forms, certificates or other evidence obsolete or inaccurate in any material respect, to promptly deliver to Borrowers two (2) new original copies of Internal Revenue Service Form W-8BEN, W-8BEN-E W-8ECI, W-9 or W-8IMY (along with Internal Revenue Service Forms W-9, W-8BEN-E or W-8BEN for each beneficial owner for whom it expects to receive a payment), or any successor form, as

the case may be, properly completed and duly executed by Lender, and such other documentation required under the IRC and reasonably requested by Borrower to confirm or establish the extent to which Lender is or is not subject to deduction, backup withholding or withholding of United States federal Tax with respect to payments to Lender under the Loan Documents, or notify Borrowers of its inability under Requirements of Law to deliver any such forms, certificates or other evidence. If Lender is claiming an exemption from United States withholding Tax pursuant to the "portfolio interest exemption", it shall provide Borrower with the applicable Internal Revenue Service Form W-8 and a certificate as reasonably requested by Borrower certifying Lender's entitlement thereto. Borrower shall not be required to pay any additional amount to Lender under Section 2.6(b)(iii) if Lender shall have failed (1) to timely deliver to Borrower the forms, certificates or other evidence referred to in this Section 2.6(c) (each of which shall be complete, accurate and duly executed), or (2) to notify Borrowers of its inability to deliver any such forms, certificates or other evidence, as the case may be; provided that, if Lender shall have satisfied the requirements of the first sentence of this Section 2.6(c) on the Tranche A Closing Date (or on the date such Lender initially acquires an interest in a Term Loan), nothing in this last sentence of this Section 2.6(c) shall relieve Borrower of its obligations to pay any additional amounts pursuant to this Section 2.6 in the event that, solely as a result of any change in any Requirements of Law or any change in the interpretation, administration or application thereof by any applicable Governmental Authority, Lender is no longer legally entitled to deliver forms, certificates or other evidence at a subsequent date establishing the fact that Lender is not subject to withholding as described herein and in the forms, certificates or other evidence initially provided by Lender.

(d) If any party hereto determines that it has received a refund of any Taxes or a credit or offset for any Taxes as to which it has been indemnified pursuant to this Section 2.6 (including by the payment of additional amounts pursuant to this Section 2.6), it shall pay to the indemnifying party an amount equal to such refund, credit or offset (but only to the extent of indemnity payments made, or additional amounts paid, under this Section 2.6 with respect to the Taxes giving rise to such refund), net of all out-of-pocket expenses (including Taxes) of such indemnified party and without interest (other than any interest paid by the relevant Governmental Authority with respect to such refund). Such indemnifying party, upon the request of such indemnified party, shall repay to such indemnified party the amount paid over pursuant to this clause (d) in the event that such indemnified party is required to repay, credit or offset such refund to such Governmental Authority and the requirement to repay such refund to such Governmental Authority is not due to the indemnified party's failure to timely provide complete and accurate Internal Revenue Service forms and other documentation required pursuant to Section 2.6(c) or Section 2.8. Notwithstanding anything to the contrary in this clause (d), in no event will the indemnified party be required to pay any amount to an indemnifying party pursuant to this clause (d) if the payment of such amount would place the indemnified party in a less favorable net after-Tax position than the indemnified party would have been in if the indemnification payments or additional amounts giving rise to such refund had never been paid. This clause (d) shall not be construed to require any indemnified party to make available its Tax returns (or any other information relating to its Taxes that it deems confidential) to the indemnifying party or any other Person.

2.7. Additional Consideration. As additional consideration for the making of the Term Loans, Borrower shall pay to Lender the following amounts ("**Additional Consideration**") as follows:

(a) On the Tranche A Closing Date, Borrower shall pay to Lender an amount equal to the product of the Tranche A Loan Amount and 0.015.

(b) In the event the Tranche B Loan is made on the Tranche B Closing Date and in addition to the Additional Consideration payable pursuant to clause (a) above, on the Tranche B Closing Date, Borrower shall pay to Lender an amount equal to the product of the Tranche B Loan Amount and 0.015.

(c) The obligations of Borrower under this Section 2.7 to pay Additional Consideration shall survive any and all prepayments by Borrower.

2.8. Evidence of Debt; Register; Lender's Books and Records; Term Loan Note.

(a) Lender's Evidence of Debt; Register. Notwithstanding anything herein to the contrary, Borrower hereby designates Lender to serve as Borrower's agent solely for purposes of maintaining at all times at Lender's principal office a "book entry system" as described in IRC Treasury Regulation Section 5f.103-1(c)(1)(ii) that identifies each beneficial owner that is entitled to a payment of principal and stated interest on the Term Loan

(the "**Register**") so that the Term Loan is at all times in "registered form" as described in IRC Treasury Regulations Section 5f.103-1(c). Lender is hereby authorized by Borrower to record in the manual or data processing records of Lender, the date and amount of each advance and the amount of the outstanding Obligations and the date and amount of each repayment of principal and each payment of interest or otherwise on account of the Obligations. Absent manifest error, such Lender records shall be conclusive as to the outstanding principal amount of the total outstanding Obligations, and the payment of interest, principal and other sums due hereunder; provided, however, that the failure of Lender to make any such record entry with respect to any payment shall not limit or otherwise affect the obligations of Borrower under the Loan Documents. The Term Loan: (i) shall, pursuant to this clause (a), be also registered as to both principal and any stated interest with Borrower or its agent, and (ii) may be transferred by Lender only by (1) surrender of the old instrument and either (x) the reissuance by Borrower of the old instrument to the new Lender or (y) the issuance by Borrower of a new instrument to the new Lender, or (2) confirmation with Borrower that the right to the principal and stated interest on the Term Loan is maintained through the book entry system kept by Lender. Lender represents that any interest that may become due and owing under this Agreement qualifies for the portfolio interest exception from withholding on interest payments pursuant to IRC Sections 871(h) and 881(c).

(b) Term Loan Notes. Borrower shall execute and deliver to Lender (or, if applicable, to any Person who is an assignee of Lender pursuant to Section 11.1 hereof) to evidence the Term Loans (i) on the Tranche A Closing Date, the Tranche A Note, and (ii) on the Tranche B Closing Date (if any), the Tranche B Note.

3. CONDITIONS OF LOANS

3.1. Conditions Precedent to Tranche A Loan. Lender's obligation to advance the Tranche A Loan is subject to the satisfaction (or waiver in accordance with Section 11.5 hereof) of the following conditions:

(a) copies of the Loan Documents (other than Loan Documents described in Schedule 5.16 of the Disclosure Letter) executed and delivered by each applicable Credit Party (or other party thereto), each schedule to such Loan Documents (including the Disclosure Letter), such schedules to be in form and substance reasonably satisfactory to Lender, and the Disclosure Letter, if and to the extent any update thereto is necessary between the Effective Date and the Tranche A Closing Date; provided, however, that in no event may the Disclosure Letter be updated in a manner that would reflect or evidence a Default or Event of Default (with or without such update);

(b) (i) true, correct and complete copies of the Operating Documents of each of the Credit Parties and (ii) a Secretary's Certificate, dated the Tranche A Closing Date, certifying that the foregoing copies are true, correct and complete (such Secretary's Certificate to be in form and substance reasonably satisfactory to Lender);

(c) the Perfection Certificate for Borrower and its Subsidiaries, in form and substance reasonably satisfactory to Lender;

(d) the organizational structure of Borrower and each of its Subsidiaries shall be as set forth on Schedule 3.1(d) of the Disclosure Letter and (ii) the capital structure of Borrower and each of its Subsidiaries as of October 11, 2017 shall be as set forth on Schedule 3.1(d) of the Disclosure Letter;

(e) a good standing certificate for each Credit Party (or equivalent certification if available in the case of a Credit Party that is incorporated or organized under the laws of a jurisdiction other than the United States), certified by the Secretary of State (or the equivalent thereof) of the jurisdiction of incorporation or organization of such Credit Party (where such certification is available) as of a date no earlier than thirty (30) days prior to the Tranche A Closing Date;

(f) a Secretary's Certificate with completed Borrowing Resolutions with respect to the Loan Documents and the Tranche A Loan for each Credit Party in form and substance reasonably satisfactory to Lender;

(g) certified reports from an independent search service reasonably satisfactory to Lender, dated as of a date no earlier than thirty (30) days prior to the Tranche A Closing Date, listing any judgment or tax lien filing or Code (or foreign equivalent) financing statement that, in each case, names any Credit Party as debtor in any jurisdiction, the results of which shall be reasonably satisfactory to Lender, accompanied by written evidence (including any Code (or foreign equivalent) termination statements) that the Liens indicated in any such financing statements or other documents either constitute Permitted Liens or have been or, in connection with the Tranche A Loan, will be terminated or released;

(h) each Credit Party shall have obtained all Governmental Approvals and all consents of other Persons, in each case that are necessary or advisable in connection with the transactions contemplated by the Loan Documents and each of the foregoing shall be in full force and effect and in form and substance reasonably satisfactory to Lender. All applicable waiting periods shall have expired without any action being taken or threatened in writing by any competent authority which would restrain, prevent or otherwise impose adverse conditions on the transactions contemplated by the Loan Documents or the financing thereof and no action, request for stay, petition for review or rehearing, reconsideration, or appeal with respect to any of the foregoing shall be pending, and the time for any applicable agency to take action to set aside its consent on its own motion shall have expired;

(i) an opinion of Cooley LLP, in form and substance reasonably satisfactory to Lender;

(j) evidence that the insurance policies required by Section 5.5 hereof are in full force and effect, together with appropriate evidence showing loss payable or additional insured clauses or endorsements in favor of Lender (such evidence to be in form and substance reasonably satisfactory to Lender);

(k) all documentation and other information required by bank regulatory authorities under applicable "know-your-customer" and anti-money laundering rules and regulations, including the U.S.A. Patriot Act (Title III of Pub. L. 107-56 (signed into law October 26, 2001)) (the "**Patriot Act**");

(l) (i) a payoff letter in respect of the Indebtedness outstanding under the Existing Oxford Loan Agreement from Oxford Finance LLC, as collateral agent thereunder, and evidence of repayment in full of such Indebtedness (including any and all expenses incurred in connection therewith) pursuant thereto prior to or concurrent with the funding of the Tranche A Loan on the Tranche A Closing Date; and (ii) evidence that (A) the Liens securing any Indebtedness, guaranty or other obligations of Borrower or its Subsidiaries to Oxford Finance LLC under the Existing Oxford Loan Agreement or any lender party thereto have been terminated and (B) the documents or filings evidencing the perfection of the foregoing Liens, including any financing statements or control agreements, have or will, concurrently with the funding of the Tranche A Loan on the Tranche A Closing Date, be terminated;

(m) (i) statement of Net Sales of Borrower and its Subsidiaries for the quarterly period ended September 30, 2017; (ii) audited consolidated financial statements for Borrower and its Subsidiaries for the period ended December 31, 2016; and (iii) for the interim period January 1, 2017 to the Tranche A Closing Date, internally prepared, unaudited consolidated financial statements for Borrower and its Subsidiaries for each quarterly period completed prior to the Tranche A Closing Date and for each monthly period completed thirty (30) days prior to the Tranche A Closing Date, each in form and substance satisfactory to Lender;

(n) evidence satisfactory to Lender in the form of a certificate of a Responsible Officer of Borrower that, as of the Tranche A Closing Date, after giving effect to the transactions occurring on such date, including the incurrence of Indebtedness under the Term Loan Note that Borrower is Solvent, that Borrower and its Subsidiaries that are Credit Parties, on a consolidated basis, are Solvent, and that Borrower and its Subsidiaries, on a consolidated basis, are Solvent;

(o) payment of Lender Expenses as specified in Section 2.4 and payment of the Additional Consideration as specified in Section 2.7 hereof;

(p) a certificate, dated the Tranche A Closing Date and signed by a Responsible Officer of Borrower, confirming that there are no litigation, public or private, or administrative proceedings, governmental investigation or other legal or regulatory developments pending or, to the Knowledge of each Credit Party or any of its Subsidiaries, threatened in writing, that, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change except as set forth on Schedule 4.6 of the Disclosure Letter (such certificate to be in form and substance reasonably satisfactory to Lender); and

(q) a certificate, dated the Tranche A Closing Date and signed by a Responsible Officer of Borrower, confirming satisfaction of the conditions precedent set forth in this Section 3.1 and Section 3.3 (such certificate to be in form and substance reasonably satisfactory to Lender).

3.2. Conditions Precedent to Tranche B Loan. Lender's obligation to advance the Tranche B Loan is subject to the satisfaction (or waiver in accordance with Section 11.5 hereof) of the following conditions:

(a) a certificate, dated the Tranche B Closing Date and signed by a Responsible Officer of Borrower, confirming that there are no litigation, public or private, or administrative proceedings, governmental investigation or other legal or regulatory developments pending or, to the Knowledge of each Credit Party or any of its Subsidiaries, threatened in writing, that, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change except as set forth on Schedule 4.6 of the Disclosure Letter (such certificate to be in form and substance reasonably satisfactory to Lender);

(b) a certificate, dated the Tranche B Closing Date and signed by a Responsible Officer of Borrower, confirming satisfaction of the conditions precedent set forth in this Section 3.2 and Section 3.3 (such certificate to be in form and substance reasonably satisfactory to Lender); and

(c) an updated Disclosure Letter; provided that in no event may the Disclosure Letter be updated in a manner that would reflect or evidence a Default or Event of Default (with or without such update).

3.3. Additional Conditions Precedent to Term Loans. The obligation of Lender to make the Term Loans is subject to the satisfaction (or waiver in accordance with Section 11.5 hereof) of the following additional conditions:

(a) timely receipt of an executed Payment/Advance Form in the form of Exhibit A hereto;

(b) the representations and warranties made by the Credit Parties in Section 4 of this Agreement and in the other Loan Documents are true and correct in all material respects, unless any such representation or warranty is stated to relate to a specific earlier date, in which case such representation or warranty shall be true and correct in all material respects as of such earlier date (it being understood that any representation or warranty that is qualified as to "materiality," "Material Adverse Change," or similar language shall be true and correct in all respects, in each case, on the Tranche A Closing Date, the Tranche B Closing Date or as of such earlier date, as applicable); and

(c) there shall not have occurred (i) any Material Adverse Change or (ii) any Default or Event of Default.

3.4. Covenant to Deliver. The Credit Parties agree to deliver to Lender each item required to be delivered to Lender under this Agreement as a condition precedent to the Credit Extensions; provided, however, that any such items set forth on Schedule 5.16 of the Disclosure Letter shall be delivered to Lender within the time period prescribed therefor on such schedule. The Credit Parties expressly agree that any Credit Extensions made prior to the receipt by Lender of any such item shall not constitute a waiver by Lender of the Credit Parties' obligation to deliver such item, and the making of any Credit Extensions in the absence of a required item shall be in Lender's sole discretion.

3.5. Procedures for Borrowing. Subject to the prior satisfaction of all other applicable conditions to the making of the Term Loans set forth in this Agreement, to obtain any Term Loan, Borrower shall deliver to Lender by electronic mail or facsimile a completed Payment/Advance Form in the form of Exhibit A hereto for the requested Term Loan executed by a Responsible Officer of Borrower. In addition to the foregoing, if Borrower intends to obtain the Tranche B Loan, Borrower shall notify Lender (which notice shall be irrevocable on and after the date on which such notice is given and Borrower shall be bound to make a borrowing in accordance therewith) by electronic mail or facsimile by no later than 12:00 noon on or before January 17, 2019, in which case Lender

shall make the Tranche B Loan available to Borrower not later than 2:00 p.m. on the date that is ten (10) Business Days following the date on which such notice is given by wire transfer of same day funds in Dollars, to such account(s) in the United States as may be designated in writing to Lender by Borrower.

4. REPRESENTATIONS AND WARRANTIES

In order to induce Lender to enter into this Agreement and to make the Credit Extensions to be made on the Tranche A Closing Date and, if applicable, the Tranche B Closing Date, each Credit Party, jointly and severally, represents and warrants to Lender that the following statements are true and correct as of the Effective Date and on the date on which each Term Loan is made (both with and without giving effect to such Term Loan):

4.1. Due Organization, Authorization; Power and Authority. Each of Borrower and each of its Subsidiaries (a) is duly organized, validly existing and in good standing under the laws of its jurisdiction of organization as identified on Schedule 3.1(d) of the Disclosure Letter or any Perfection Certificate updated in accordance with Section 4.5(a), (b) has all requisite power and authority to own, license and operate its properties, to carry on its business as now conducted and as proposed to be conducted and (c) is qualified to do business and in good standing in every jurisdiction where its assets are located and wherever necessary to carry out its business and operations except where the failure to do so could not reasonably be expected to have a Material Adverse Change. Each Credit Party has all requisite power and authority to enter into the Loan Documents to which it is a party and to carry out the transactions contemplated thereby.

4.2. Equity Interests and Ownership. The Equity Interests of each Domestic Subsidiary (other than any Excluded Subsidiary and any Domestic Subsidiary that is a CFC Holding Company), each Foreign Subsidiary directly owned by any Domestic Subsidiary and each CFC Holding Company directly owned by any Domestic Subsidiary, in each case, have been duly authorized and validly issued and are fully paid and non-assessable (other than Equity Interests in limited liability companies and partnerships). The organizational structure, and capital structure as of October 11, 2017, of Borrower and each of its Subsidiaries and the ownership interest of Borrower and each of its Subsidiaries in each of its respective Subsidiaries is as set forth on Schedule 3.1(d) of the Disclosure Letter.

4.3. No Conflict; Government Consents. Except as set forth on Schedule 4.3 of the Disclosure Letter, the execution, delivery and performance by each Credit Party of the Loan Documents to which it is a party have been duly authorized and do not (a) conflict with any of such Credit Party's Operating Documents, (b) contravene, conflict with, constitute a default under or violate any material Requirements of Law, (c) contravene, conflict or violate any applicable order, writ, judgment, injunction, decree, determination or award of any Governmental Authority by which such Credit Party or any of its Subsidiaries or any of its or their respective properties or assets may be bound, (d) require any action by, filing, registration, or qualification with, or Governmental Approval from, any Governmental Authority (except (i) such Governmental Approvals which have already been obtained and are in full force and effect, and (ii) for filings and recordings with respect to the Collateral to be made, or otherwise delivered to Lender for filing or recordation on or after the Tranche A Closing Date), (e) constitute a material breach of or a material default or an event of default under, or result in or permit the termination or acceleration of, any Material Contract by which such Credit Party is bound or (f) require any approval of stockholders, members or partners or any approval or consent of any Person except for such approvals or consents which will be obtained on or before the Tranche A Closing Date. Without limiting Section 4.11 hereof, neither Borrower nor any of its Subsidiaries is in default under or breach of any Contract to which it is a party or by which it or its properties or assets are bound or affected in which the default thereunder or breach thereof could reasonably be expected to have a Material Adverse Change.

4.4. Binding Obligation. Each Loan Document has been duly executed and delivered by each Credit Party that is a party thereto and is the legally valid and binding obligation of such Credit Party, enforceable against such Credit Party in accordance with its respective terms, except as may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws relating to or limiting creditors' rights generally or by equitable principles relating to enforceability.

4.5. Collateral; Intellectual Property. In connection with this Agreement, the Credit Parties have delivered to Lender a completed certificate signed by each Credit Party (the "**Perfection Certificate**"). Each Credit Party represents and warrants to Lender that:

(a) (i) its exact legal name is that indicated on the Perfection Certificate and on the signature page hereof; (ii) it is an organization of the type and is organized in the jurisdiction set forth in the Perfection Certificate; (iii) the Perfection Certificate accurately sets forth its organizational identification number or accurately states that it has none; (iv) the Perfection Certificate accurately sets forth its place of business, or, if more than one, its chief executive office as well as its mailing address (if different than its chief executive office); (v) except as set forth in the Perfection Certificate, it (and each of its predecessors) has not, in the past five (5) years, changed its jurisdiction of formation, organizational structure or type, or any organizational number assigned by its jurisdiction; and (vi) all other information set forth on the Perfection Certificate pertaining to it is accurate and complete (it being understood and agreed that Borrower may from time to time update certain information in the Perfection Certificate after the Tranche A Closing Date to the extent expressly permitted by one or more provisions in this Agreement and the other Loan Documents to reflect changes since the Tranche A Closing Date). If any Credit Party is not now a Registered Organization but later becomes one, it shall promptly notify Lender of such occurrence and provide Lender with such Credit Party's organizational identification number. Lender hereby agrees that the Perfection Certificate shall be deemed to be updated to reflect information provided in any notice delivered by any Credit Party to Lender pursuant to Section 6.2; provided that any such update shall not relieve any Credit Party of any other Obligation under this Agreement, including its Obligations pursuant to Section 5.7(b).

(b) (i) it has good title to, has rights in, and the power to transfer each item of Collateral upon which it purports to grant a Lien hereunder or under any Collateral Document, free and clear of any and all Liens except Permitted Liens, (ii) it has no deposit accounts, securities accounts, commodity accounts or other investment accounts other than (A) the deposit accounts, securities accounts, commodity accounts or other investment accounts described in the Perfection Certificate delivered to Lender in connection herewith, (B) the Excluded Accounts described in the Perfection Certificate delivered to Lender in connection herewith (which may be updated on the Tranche B Closing Date) or (C) of which such Credit Party has given Lender written notice and taken (or is currently taking in good faith) such actions as are necessary to give Lender a perfected security interest therein (and upon delivery of such notice and taking such action, the Perfection Certificate will be deemed to be updated with the information contained in such notice), (iii) Collateral is not in the possession of any third party bailee (such as a warehouse) except as otherwise provided in the Perfection Certificate or as permitted pursuant to Section 6.2(c). None of the components of the Collateral shall be maintained at locations other than as provided in the Perfection Certificate or as permitted pursuant to Section 6.2(c).

(c) All Inventory of Borrower and each of its Subsidiaries held by any of them for sale or lease or to be furnished under Contract of service in respect of any Product is in all material respects of good and marketable quality, free from material defects.

(d) A true, correct and complete list, as of the Tranche A Closing Date, of all pending or issued Patents, Copyrights and Trademarks, which are included among Current Company IP (including the name/title, current owner, registration or application number, and registration or application date and such other information as reasonably requested by Lender, if any) is set forth on Schedule 4.5(d) of the Disclosure Letter. Except as set forth on Schedule 4.5(d) of the Disclosure Letter, to the Knowledge of each Credit Party or any of its Subsidiaries, (A) each item of Current Company IP which is owned by any Credit Party or any of its Subsidiaries is valid and subsisting and no such Intellectual Property has lapsed, expired, been cancelled or become abandoned (other than as permitted by Section 6.1(j)) and (B) each item of Current Company IP which is licensed by any Credit Party or any of its Subsidiaries from another Person is valid and subsisting. To the Knowledge of each Credit Party or any of its Subsidiaries, there are no published patents, patent applications, articles or prior art references that could reasonably be expected to materially adversely affect the validity or enforceability of any of the Patents within the Product IP. Except as set forth on Schedule 4.5(d) of the Disclosure Letter, each Person who has or has had any rights in or to the Current Company IP or any trade secrets of any Credit Party or any of its Subsidiaries, including each inventor named on the Patents within such Current Company IP filed by any Credit Party or any of its Subsidiaries, has executed a Contract assigning his, her or its entire right, title and interest in and to such Current Company IP and such trade secrets, and the inventions, improvements, ideas, discoveries, writings, works of authorship, information and other intellectual property embodied, described or claimed therein, to the stated owner

thereof and, to the Knowledge of each Credit Party or any of its Subsidiaries, no such Person has any contractual or other obligation that would preclude or conflict with such assignment or the exploitation of Product or entitle such Person to ongoing payments (other than Consulting Royalties). Except for Permitted Licenses and as set forth on Schedule 4.5(d) of the Disclosure Letter, (i) no Person other than Borrower or a Domestic Subsidiary of Borrower that is a Credit Party will have any right under the Current Company IP Agreements to Commercialize Products in the United States and (ii) no Person other than a Credit Party or a Subsidiary will have any right under the Current Company IP Agreements to Commercialize Products in the Territory (other than the United States).

(e) Except for the Permitted Licenses and except as described on Schedule 4.5(e) of the Disclosure Letter, (A) each Credit Party or any of its Subsidiaries, as the case may be, possesses sole, exclusive and valid title to the Current Company IP for which it is listed as the owner on Schedule 4.5(d) of the Disclosure Letter; and (B) there are no Liens on or to any Current Company IP, other than Permitted Liens.

(f) There are no maintenance, annuity or renewal fees that are currently overdue beyond their allotted grace period for any of the Current Company IP which is owned by or exclusively licensed to any Credit Party or any of its Subsidiaries, as the case may be, nor have any applications or registrations therefor lapsed or become abandoned, been cancelled or expired (except as permitted by Section 6.1(j)). To the Knowledge of each Credit Party or any of its Subsidiaries, there are no maintenance, annuity or renewal fees that are currently overdue beyond their allotted grace for any of the Current Company IP which is not owned by or exclusively licensed to any Credit Party or any of its Subsidiaries, nor, to the Knowledge of each Credit Party or any of its Subsidiaries, have any applications or registrations therefor lapsed or become abandoned, been cancelled or expired.

(g) Schedule 4.5(g) of the Disclosure Letter sets forth a true, correct and complete list of all Current Company IP Agreements. There are no unpaid fees or royalties under any Current Company IP Agreement that have become due, or are expected to become overdue. Each Current Company IP Agreement is in full force and effect and, to the Knowledge of each Credit Party or any of its Subsidiaries, is legal, valid, binding, and enforceable in accordance with its respective terms, except as may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws relating to or limiting creditors' rights generally or by equitable principles relating to enforceability. No Credit Party or any of its Subsidiaries is in material breach of or default under any Current Company IP Agreement to which it is a party and, to the Knowledge of each Credit Party or any of its Subsidiaries, no reasonable circumstances exist that would give rise to a claim of breach or right of rescission, termination, non-renewal, revision or amendment of any of the Current Company IP Agreements, including the execution, delivery and performance of this Agreement and the other Loan Documents.

(h) Except for Consulting Royalties and as otherwise set forth on Schedule 4.5(h) of the Disclosure Letter, no payments by any Credit Party or any of its Subsidiaries are due to any other Person in respect of the Current Company IP, other than pursuant to the Current Company IP Agreements and those fees payable to patent offices in connection with the prosecution and maintenance of the Current Company IP and associated attorney fees. There is no Intellectual Property licensed in to any Credit Party or any of its Subsidiaries from any Person with respect to which such Person currently receives or may receive in the future any Consulting Royalties.

(i) No Credit Party or any of its Subsidiaries has intentionally, willfully or knowingly undertaken or omitted to undertake any acts, and, to the Knowledge of each Credit Party or any of its Subsidiaries, no reasonable circumstance or grounds exist, that would invalidate, reduce or eliminate, in whole or in part, (i) the enforceability or scope of any Current Company IP or (ii) in the case of Current Company IP owned or exclusively licensed by any Credit Party or any of its Subsidiaries, as the case may be, other than with respect to Permitted Licenses and, except as set forth on Schedule 4.5(i) of the Disclosure Letter, such Credit Party's or such Subsidiary's entitlement to exclusively own or license and exploit the Current Company IP.

(j) Except as set forth on Schedule 4.6 of the Disclosure Letter or as notified to Lender in writing pursuant to Section 5.2(d), there is no pending, decided or settled opposition, interference proceeding, reissue proceeding, reexamination proceeding, inter-partes review proceeding, post-grant review proceeding, cancellation proceeding, injunction, lawsuit, hearing, investigation, complaint, arbitration, mediation, demand, International Trade Commission investigation, decree, or any other dispute, disagreement, or claim, in each case, alleged in writing to Borrower or any of its Subsidiaries (collectively referred to hereinafter as "**Specified Disputes**"), nor, to the Knowledge of each Credit Party or any of its Subsidiaries, has any Specified Dispute been

threatened in writing, in each case, challenging the legality, validity, enforceability or ownership of any Current Company IP. Except as noted on Schedule 4.5(j) of the Disclosure Letter, to the Knowledge of each Credit Party or any of its Subsidiaries, there is no patent or patent application of any third party that interferes with a Patent within the Current Company IP.

(k) Except as noted on Schedule 4.5(k) of the Disclosure Letter and other than Restricted Licenses entered into in compliance with Section 5.7(b), no Credit Party is a party to, nor is it bound by, any Restricted License.

(l) Except as noted on Schedule 4.5(l) of the Disclosure Letter, the packaging for any and all Products Manufactured, used or Commercialized under the Patents within the Current Company IP have been marked with the proper patent notice.

(m) Except as noted on Schedule 4.5(m) of the Disclosure Letter, in each case where a Patent within the Current Company IP is held by any Credit Party or its Subsidiaries by assignment, the assignment has been duly recorded with the U.S. Patent and Trademark Office and all similar offices and agencies anywhere in the world in which foreign counterparts are registered or issued.

(n) There are no pending or, to the Knowledge of each Credit Party or any of its Subsidiaries, threatened (in writing) claims against any Credit Party or any of its Subsidiaries alleging (i) that any of the operation of the business of or any activity by any Credit Party or any of its Subsidiaries, or the Manufacture, Commercialization, or use of any Product infringes or violates (or in the past infringed or violated) the rights of third parties in or to any Intellectual Property ("**Third Party IP**") or constitutes a misappropriation of (or in the past constituted a misappropriation of) any subject matter of any Third Party IP or (ii) that any of the Current Company IP is invalid or unenforceable.

(o) Neither the operation of the business of, nor any activity by, any Credit Party or any of its Subsidiaries, nor the Manufacture, use or Commercialization of any Product, infringes or violates (or in the past infringed or violated) any Third Party IP, other than any patent within the Third Party IP, or constitutes a misappropriation of (or in the past constituted a misappropriation of) any subject matter of any Third Party IP, and to the Knowledge of each Credit Party or any of their Subsidiaries, neither the operation of the business of, nor any activity, by any Credit Party or any of its Subsidiaries, nor the Manufacture, use or Commercialization of any Product, infringes or violates (or in the past infringed or violated) any patent within the Third Party IP.

(p) Except for customary indemnities provided to customers in the ordinary course of business in connection with the sale of the Product and as otherwise noted on Schedule 4.5(p) of the Disclosure Letter, no Credit Party or any of its Subsidiaries has entered into any Contract to indemnify any other Person against any claims of infringement, violation or misappropriation of any Intellectual Property.

(q) Except as noted on Schedule 4.5(q) of the Disclosure Letter, there are no settlements, covenants not to sue, consents, judgments, or orders or similar obligations that (i) restrict the rights of any Credit Party or any of its Subsidiaries to use any Intellectual Property, (ii) restrict the business of any Credit Party or any of its Subsidiaries, in order to accommodate a third party's Intellectual Property or (iii) permit third parties to use any Company IP.

(r) To the Knowledge of each Credit Party or any of their Subsidiaries, each Credit Party and each of its Subsidiaries has obtained and possesses valid licenses to use all of the software programs present on the computers and other software-enabled electronic devices that it owns or leases or that it has otherwise provided to its employees for their use in connection with the business of such Credit Party and its Subsidiaries.

(s) To the Knowledge of each Credit Party or any of its Subsidiaries, (i) there is no, nor has there been any, infringement or violation by any Person of any of the Product IP or the rights therein or thereto of any Credit Party or any of its Subsidiaries and (ii) there is no, nor has there been any, misappropriation by any Person of any of the Product IP or the subject matter thereof.

(t) Each Credit Party and each of its Subsidiaries have taken all commercially reasonable security measures to protect the confidentiality and value of all trade secrets owned by such Credit Party or any of its Subsidiaries or used or held for use by such Credit Party or any of its Subsidiaries in the business of such Credit Party and its Subsidiaries, including requiring each employee and consultant of such Credit Party or any of its Subsidiaries and any other Person with access to such trade secrets to execute a binding confidentiality or nondisclosure Contract, copies or forms of which have been provided to Lender and, to the Knowledge of each Credit Party or any of its Subsidiaries, there has not been any material breach by any party to such confidentiality Contracts.

(u) Each Product performs in accordance with its documented specifications and as warranted to the customers thereof, except to the extent any such failure to so perform could not reasonably be expected to have a Material Adverse Change.

(v) The Credit Parties and their Subsidiaries (i) collect or use personally identifiable information from any third parties (including patients) and (ii) in connection with any collection or use of personally identifiable information, to the Knowledge of each Credit Party or any of its Subsidiaries, each Credit Party or any of its Subsidiaries has complied with all applicable statutes and regulations in all relevant jurisdictions and its publicly available privacy policy (if any) relating to the collection, storage, use and onward transfer of all personally identifiable information collected by such Credit Party or Subsidiary or by third parties having authorized access to databases or other records of such Credit Party or Subsidiary.

(w) Each Credit Party and each of its Subsidiaries have reasonable policies, procedures and security measures in place to protect information relating to its customers ("**Customer Data**") under its and its service providers' possession or control from unauthorized access; and, to the Knowledge of each Credit Party or any of its Subsidiaries, each Credit Party, each of its Subsidiaries, and each of its service providers' hardware, software, encryption, systems, policies and procedures are sufficient to protect the security and confidentiality of all Customer Data that complies in all material respects with Requirements of Law. To the Knowledge of each Credit Party or any of its Subsidiaries, no Credit Party, any of its Subsidiaries, or any of its service providers has suffered any breach in security that has permitted any unauthorized access to Customer Data.

4.6. Adverse Proceedings, etc. Except as set forth on Schedule 4.6 of the Disclosure Letter or as notified to Lender in writing pursuant to Section 5.2(d), there are no Adverse Proceedings, individually or in the aggregate, that could reasonably be expected to result in a Material Adverse Change. Neither Borrower nor any of its Subsidiaries (a) is in violation of any Requirements of Law (including Environmental Laws) that, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change, or (b) is subject to or in default with respect to any final judgments, orders, writs, injunctions, decrees, rules or regulations of any court or any federal, state, municipal or other governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, that, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change.

4.7. Financial Statements; Material Contracts; No Material Adverse Change; Books and Records.

(a) All consolidated financial statements of Borrower and each of its Subsidiaries delivered to Lender pursuant to Section 3.1(m) were prepared in conformity with Applicable Accounting Standards applied on a consistent basis throughout the periods covered thereby, except as otherwise disclosed therein and, in the case of unaudited, interim financial statements, subject to normal year-end audit adjustments and the exclusion of certain footnotes, and fairly present in all material respects the consolidated financial condition of Borrower and its Subsidiaries and their consolidated results of operations as of the dates indicated and the results of their operations and the changes in their cash flows for the periods specified. Since the date of the most recent financial statements delivered to Lender pursuant to Section 3.1(m), there has not been any material deterioration in the consolidated financial condition of Borrower and its Subsidiaries. Neither Borrower nor any of its Subsidiaries has any contingent liability or liability for Taxes, long-term lease (other than long-term leases entered into in the ordinary course of business) or unusual forward or long-term commitment that is not reflected in the consolidated financial statements or the notes thereto delivered to Lender pursuant to Section 3.1(m) and which in any such case is material in relation to the business, operations, properties, assets, or condition (financial or otherwise) of Borrower and its

Subsidiaries taken as a whole. Since the date of the most recent audited financial statements delivered to Lender pursuant to Section 3.1(m), no change in the business, assets, liabilities, financial condition or results of operations of Borrower or any of its Subsidiaries has occurred, and no event has occurred or failed to occur, that has had or could reasonably be expected to have, either alone or in conjunction with all other such changes, events and failures, a Material Adverse Change;

(b) Since December 31, 2016, (i) neither Borrower nor any of its Subsidiaries has entered into any Material Contract or has incurred any liability or obligation, direct or contingent, that, individually or in the aggregate, is material to Borrower and its Subsidiaries, taken as a whole, except as otherwise disclosed in Schedule 4.7(b) of the Disclosure Letter or in financial statements delivered to Lender pursuant to Section 3.1(m)(i), Section 3.1(m)(ii) or Section 5.2 and (ii) neither Borrower nor any of its Subsidiaries has sustained any loss or interference with its business that, individually or in the aggregate, is material to Borrower and its Subsidiaries, taken as a whole, and that is either from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor disturbance or dispute or any action, order or decree of any arbitrator or Governmental Authority, except as otherwise disclosed in the financial statements delivered to Lender pursuant to Section 3.1(m)(i), Section 3.1(m)(ii) or Section 5.2; and

(c) The Books of Borrower and each of its Subsidiaries contain full, true and correct entries in all material respects of all material dealings and transactions in relation to its business and activities in conformity with Applicable Accounting Standards and all Requirements of Law.

4.8. Solvency. Borrower is Solvent, Borrower and its Subsidiaries that are Credit Parties, on a consolidated basis, are Solvent and Borrower and its Subsidiaries, on a consolidated basis, are Solvent. Without limiting the generality of the foregoing, there has been no proposal made or resolution adopted by any competent corporate body for the dissolution or liquidation of any Credit Party, nor do any circumstances exist which may result in the dissolution or liquidation of any Credit Party (other than in respect of a dissolution or liquidation permitted under Section 6.3). No proposal has been made nor any resolution been adopted by any competent corporate body of any Credit Party for the statutory merger of such Credit Party with any other Person (including for any merger permitted by Section 6.3). None of the Credit Parties has (i) made a general assignment for the benefit of creditors, (ii) filed any voluntary petition in bankruptcy or suffered the filing of an involuntary petition by any creditor, (iii) suffered the appointment of a receiver to take possession of all or any portion of its assets, (iv) suffered the attachment or judicial seizure of all or any portion of its assets, (v) admitted in writing its inability to pay its debts as they come due, nor (vi) made an offer of settlement, extension or composition to its creditors generally.

4.9. Payment of Taxes. All United States federal, foreign and material state, local and other Tax returns and reports (or extensions thereof) of each Credit Party and each of its Subsidiaries required to be filed by any of them have been timely filed, and all material Taxes which are due and payable by any Credit Party or any of its Subsidiaries and all material assessments, fees and other governmental charges upon any Credit Party or any of its Subsidiaries and upon their respective properties, assets, income, businesses and franchises which are due and payable have been paid when due and payable except where the validity or amount thereof is being contested in good faith by appropriate proceedings; provided that (a) the applicable Credit Party has set aside on its books adequate reserves therefor in conformity with Applicable Accounting Standards and (b) the failure to pay such Taxes, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Change. No Credit Party knows of any proposed Tax deficiency or assessment against it or any of its Subsidiaries which is not being actively contested by it or such Subsidiary in good faith and by appropriate proceedings; provided that such reserves or other appropriate provisions, if any, as shall be required in conformity with Applicable Accounting Standards shall have been made or provided therefor. Neither any Credit Party nor any of its Subsidiaries have executed or filed with the Internal Revenue Service or any other Governmental Authority any Contract or other document extending, or having the effect of extending, the period for assessment or collection of any Taxes nor has there been any request in writing for such extension. No claim has been made by a Tax authority in a jurisdiction where any Credit Party does not pay Taxes or file Tax returns that such Credit Party is subject to Taxes assessed by such jurisdiction. No Credit Party is or will be required to include any material item of income in, or exclude any material item of deduction from, taxable income for any taxable period (or portion thereof) as a result of any intercompany transaction.

4.10. Environmental Matters. Neither Borrower nor any of its Subsidiaries nor any of its or their respective Facilities or operations are subject to any outstanding written order, consent decree or settlement Contract with any Person relating to any Environmental Law, any Environmental Claim, or any Hazardous Materials Activity that, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change. Neither Borrower nor any of its Subsidiaries has received any letter or request for information under Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. § 9604) or any comparable state law. There are no, and to the Knowledge of each Credit Party or any of its Subsidiaries there have been no, conditions, occurrences, or Hazardous Materials Activities which could reasonably be expected to form the basis of an Environmental Claim against Borrower or any of its Subsidiaries that, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change. To the Knowledge of each Credit Party or any of its Subsidiaries, no predecessor of Borrower or any of its Subsidiaries has filed any notice under any Environmental Law indicating past or present treatment of Hazardous Materials at any Facility, and neither Borrower's nor any of its Subsidiaries' operations involves the generation, transportation, treatment, storage or disposal of hazardous waste, as defined under 40 C.F.R. Parts 260 270 or any state equivalent. Compliance by Borrower and its Subsidiaries with all requirements pursuant to or under Environmental Laws which are applicable to or binding upon Borrower or any of its Subsidiaries or any of its or their respective properties or assets or to which Borrower or any of its Subsidiaries or any of its or their respective properties or assets is subject could not, individually or in the aggregate, be reasonably expected to result in a Material Adverse Change. No event or condition has occurred or is occurring with respect to any Credit Party relating to any Environmental Law, any Release of Hazardous Materials, or any Hazardous Materials Activity which, individually or in the aggregate, has resulted in, or could reasonably be expected to result in, a Material Adverse Change.

4.11. Material Contracts. Schedule 4.11 of the Disclosure Letter contains a true, correct and complete list of all of the Material Contracts in effect on the Tranche A Closing Date. After giving effect to the consummation of the transactions contemplated by this Agreement and the other Loan Documents, except as described on Schedule 4.11 of the Disclosure Letter, each Material Contract is a valid and binding obligation of the applicable Credit Party or its Subsidiaries and is in full force and effect, and neither the applicable Credit Party or Subsidiary nor, to the Knowledge of each Credit Party or any of its Subsidiaries, each other party thereto, is in material breach thereof or material default thereunder. Except as described on Schedule 4.11 of the Disclosure Letter with respect to the Existing Oxford Loan Agreement, no Credit Party or any of its Subsidiaries has received any written notice from any other party thereto asserting or, to the Knowledge of each Credit Party or any of its Subsidiaries threatening to assert, the cancellation, termination or invalidation of any Material Contract. Borrower has previously made available to Lender true, correct and complete copies of each Material Contract.

4.12. Regulatory Compliance. No Credit Party is an "investment company" or a company "controlled" by an "investment company" under the Investment Company Act of 1940, as amended. No Credit Party is engaged as one of its important activities in extending credit for margin stock (under Regulations X, T and U of the Federal Reserve Board). Each Credit Party has complied in all material respects with the Federal Fair Labor Standards Act. Each of Borrower and its Subsidiaries and each of their respective ERISA Affiliates is in compliance with the applicable provisions of ERISA and the IRC and the regulations and published interpretations thereunder, except where such failure to comply could not reasonably be expected to result in any material liability of Borrower or its Subsidiaries or their respective ERISA Affiliates. No ERISA Event has occurred or is reasonably expected to occur that, when taken together with any other ERISA Events, could reasonably be expected to result in material liability of Borrower or its Subsidiaries or any of their respective ERISA Affiliates or the imposition of a Lien on any of the properties or assets of Borrower or any of its Subsidiaries. The present value of all accumulated benefit obligations of all underfunded Plans (based on the assumptions used for purposes of Statement of Financial Accounting Standards No. 87) did not, as of the date of the most recent financial statements reflecting such amounts, exceed by more than $250,000 the fair market value of the property of all such underfunded Plans. Neither Borrower nor any of its Subsidiaries nor any of their respective ERISA Affiliates has any Multiemployer Plan or any obligation to contribute to a Multiemployer Plan.

4.13. Margin Stock. No Credit Party is engaged, nor will it engage, principally or as one of its important activities, in the business of extending credit for the purpose of "purchasing" or "carrying" any "margin stock" as such terms are defined in Regulation U of the Federal Reserve Board as now and from time to time hereafter in effect (such securities being referred to herein as "**Margin Stock**"). None of the proceeds of the Credit Extensions or other extensions of credit under this Agreement will be used, directly or indirectly, for the purpose of

purchasing or carrying any Margin Stock, for the purpose of reducing or retiring any Indebtedness that was originally incurred to purchase or carry any Margin Stock or for any other purpose that might cause any of the Term Loans or other extensions of credit under this Agreement to be considered a "purpose credit" within the meaning of Regulations T, U or X of the Federal Reserve Board. No Credit Party or any of its Subsidiaries will take or permit to be taken any action that might cause any Loan Document to violate any regulation of the Federal Reserve Board.

4.14. Subsidiaries; Investments; Affiliate Transactions. Neither Borrower nor any of its Subsidiaries owns any stock, partnership interest or other equity securities except for Permitted Investments. Set forth on Schedule 4.14 of the Disclosure Letter is a true, correct and complete list of all transactions between any Credit Party or any of its Subsidiaries, on the one hand, and any Affiliate of any Credit Party or any owner of ten percent (10%) or more of the Equity Interests of any Credit Party or any of its Subsidiaries or any Affiliate of any such Person, on the other hand (other than (a) Transfers of Inventory in the ordinary course of business between or among any Credit Party or any of its Subsidiaries and (b) equity offering documents, investor rights agreements, registration rights agreements, organizational documents and similar Contracts entered into in connection with any equity financing). Except as set forth on Schedule 4.14 of the Disclosure Letter, Borrower does not own or control, directly or indirectly, any interest in any Person other than a Subsidiary and is not a participant in any joint venture, partnership or similar arrangement.

4.15. Employee Matters. Neither Borrower nor any of its Subsidiaries is engaged in any unfair labor practice that could reasonably be expected to result in a Material Adverse Change. There is (a) no unfair labor practice complaint pending against Borrower or any of its Subsidiaries, or to the Knowledge of each Credit Party or any of its Subsidiaries, threatened in writing against any of them before the National Labor Relations Board and no grievance or arbitration proceeding arising out of or under any collective bargaining agreement that is so pending against Borrower or any of its Subsidiaries or to the Knowledge of each Credit Party or any of its Subsidiaries, threatened in writing against any of them, (b) no strike or work stoppage in existence or, to the Knowledge of each Credit Party or any of its Subsidiaries, threatened in writing involving Borrower or any of its Subsidiaries, and (c) to the Knowledge of each Credit Party or any of its Subsidiaries, no union representation question existing with respect to the employees of Borrower or any of its Subsidiaries and, to the Knowledge of each Credit Party or any of its Subsidiaries, no union organization activity that is taking place that, individually or together with any other matter specified in clause (a) or (b) above or this clause (c), could reasonably be expected to result in a Material Adverse Change.

4.16. Use of Proceeds. Borrower shall use the proceeds of the Credit Extensions solely to repay in full the Indebtedness outstanding under the Existing Oxford Loan Agreement and any and all associated costs and expenses and to fund its general business requirements and not for any other purposes, including personal, family, household or agricultural purposes.

4.17. Full Disclosure. No representation or warranty of any Credit Party contained in any Loan Document or in any other documents, certificates or written statements (excluding any projections and pro forma financial information, any presentations made by Borrower and any third party agreements of Borrower) furnished to Lender by or on behalf of any Credit Party for use in connection with the transactions contemplated hereby contains any untrue statement of a material fact or omits to state a material fact (to the Knowledge of each Credit Party or any of its Subsidiaries, in the case of any document not furnished by it) necessary in order to make the statements contained herein or therein, not misleading in light of the circumstances in which the same were made. Any projections and pro forma financial information contained in such materials represent the best good faith estimates of the Credit Party furnishing such materials and are based on assumptions believed by such Credit Party to be fair and reasonable at the time made. Lender acknowledges and agrees that projections as to future events are not to be viewed as facts and that the actual results during the period or periods covered by such projections may differ from the projected results.

4.18. FCPA; Patriot Act; OFAC.

(a) None of Borrower, its Subsidiaries or, to the Knowledge of each Credit Party or any of its Subsidiaries, any director, officer, agent or employee or Borrower or any Subsidiary of Borrower has (i) used any corporate funds of Borrower or any of its Subsidiaries for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity, (ii) made any direct or indirect unlawful payment to any foreign or

domestic government official or employee from corporate funds of Borrower or any of its Subsidiaries, (iii) violated or is in violation of any provision of the Foreign Corrupt Practices Act of 1977, as amended (the "**FCPA**") or (iv) made any bribe, rebate, payoff, influence payment, kickback or other unlawful payment, and no part of the proceeds of any Credit Extension will be used, directly or indirectly, for any payments to any governmental official or employee, political party, official of a political party, candidate for political office or anyone else acting in an official capacity, in order to obtain, retain or direct business or obtain any improper advantage in violation of the FCPA;

(b) (i) The operations of Borrower and its Subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the Bank Secrecy Act of 1970, as amended by Title III of the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT) Act of 2001 and the money laundering laws, rules and regulations of each jurisdiction (foreign or domestic) in which Borrower or any of its Subsidiaries is subject to such jurisdiction's Requirements of Law (collectively, the "**Money Laundering Laws**") and (ii) no action, suit or proceeding by or before any Governmental Authority or any arbitrator involving Borrower or any of its Subsidiaries with respect to the Money Laundering Laws is pending or threatened in writing; and

(c) None of Borrower, its Subsidiaries or, to the Knowledge of each Credit Party or any of its Subsidiaries, any director, officer, agent or employee of Borrower or any Subsidiary of Borrower is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury ("**OFAC**") or imposed by the Trading with the Enemy Act, 50 U.S.C. App. 1 et seq. Borrower will not, directly or, to the Knowledge of each Credit Party or any of its Subsidiaries, indirectly through an agent, use the proceeds of the Credit Extension, or lend, contribute or otherwise make available such proceeds to any Subsidiary, joint venture partner or other Person, for the purpose of financing the activities of any Person currently subject to any U.S. sanctions administered by OFAC.

4.19. Insurance Contracts. Schedule 4.19 of the Disclosure Letter contains a true, correct and complete list of all insurance companies with which any Credit Party or any of its Subsidiaries has agreed to contracted pricing for the Products.

4.20. Health Care Matters.

(a) *Compliance with Health Care Laws*. Each Credit Party and each of its Subsidiaries, and each officer, affiliate and employee acting on behalf of each Credit Party or any of its Subsidiaries, is in compliance in all material respects with all Health Care Laws applicable to such Credit Party or Subsidiary, its products and its properties or other assets or its business or operations, including all applicable statutes, rules, regulations, standards, policies and orders administered or issued by any Governmental Authority relating to any of the foregoing.

(b) *Compliance with FDA Laws (and Foreign Equivalents)*. Each Credit Party and each of its Subsidiaries are in compliance in all material respects with all applicable FDA Laws, including all applicable requirements of the Food, Drug and Cosmetic Act or any of its implementing regulations ("**FDCA**") and all applicable statutes, rules, regulations, standards, policies and orders administered or issued by any foreign Governmental Authority, relating to any Product or any aspect of the development, Manufacture, production or Commercialization thereof or otherwise. (i) None of the Products are articles which may not be introduced into interstate commerce pursuant to the requirements of the FDCA (or foreign equivalent), (ii) each Product has been developed, Manufactured or produced in all material respects in accordance with FDA Good Manufacturing Practices (or any foreign equivalent) and FDA Registration and Listing Requirements (or foreign equivalent) and (iii) each of the Products required to be approved or cleared by the FDA pursuant to the FDCA (or any foreign equivalent) has been so approved or cleared.

(c) *Material Statements*. None of the Credit Parties or their respective Subsidiaries nor any officer, affiliate, employee or, to the Knowledge of each Credit Party or any of its Subsidiaries, agent, of any Credit Party or its Subsidiaries, has (i) made an untrue statement of any material fact or fraudulent statement to any Governmental Authority (including the FDA), (ii) failed to disclose any material fact to any Governmental Authority (including the FDA), or (iii) committed any act, made any statement, or failed to make any statement that, in any such case, at the time such disclosure was made, could reasonably be expected to constitute a material violation of any Health Care Law or FDA Law.

(d) *Proceedings; Audits*. To the Knowledge of each Credit Party or any of its Subsidiaries, there are no facts, circumstances or conditions that could reasonably be expected to form the basis for any material investigation, suit, claim, audit, action (legal or regulatory) or proceeding (legal or regulatory) by a Governmental Authority (other than any routine Quality System Regulation or Good Clinical Practice compliance audits required by the FDA or any routine audits conducted by notified bodies with respect to any foreign good manufacturing practices requirements) pending or threatened in writing against any Credit Party or any of its Subsidiaries relating to any of the Health Care Laws, FDA Laws or any applicable statutes, rules, regulations, standards, policies or orders administered or issued by any foreign Governmental Authority.

(e) *Prohibited Transactions*. None of the Credit Parties or their Subsidiaries, or any of their respective officers, affiliates or employees or, to the Knowledge of each Credit Party or any of its Subsidiaries, any Person acting on behalf of any Credit Party or any of its Subsidiaries, directly or indirectly: (i) offered or paid any remuneration, in cash or in kind, to, or made any financial arrangements with, any past, present or potential patient, supplier, physician, or contractor, in order to illegally obtain business or payments from such person in material violation of any Health Care Law; (ii) has given or agreed to give, made, or is party to any illegal Contract to make, any illegal gift or gratuitous payment of any kind, nature or description (whether in money, property or services) to any past, present or potential patient, supplier, physician, contractor, or any other person in material violation of any Health Care Law; (iii) made or agreed to make, or is party to any Contract to make on behalf of any Credit Party or any of its Subsidiaries, any contribution, payment or gift of funds or property to, or for the private use of, any governmental official, employee or agent where either the contribution, payment or gift or the purpose of such contribution, payment or gift is or was a material violation of the laws of any Governmental Authority having jurisdiction over such payment, contribution or gift; (iv) established or maintained any unrecorded fund or asset for any purpose or made any materially misleading, false or artificial entries on any of its books or records for any reason; or (v) made, or agreed to make, or is party to any Contract to make, any payment to any person with the intention or understanding that any part of such payment would be in material violation of any Health Care Law or that was used or given for any purpose other than that described in the documents supporting such payment. To the Knowledge of each Credit Party or any of its Subsidiaries, there are no actions threatened in writing or pending against any Credit Party or any of its Subsidiaries or their Affiliates under any federal or state whistleblower statute, including under the False Claims Act of 1863 (31 U.S.C. § 3729 et seq.).

(f) *Exclusion*. None of the Credit Parties or their Subsidiaries, nor any officer, affiliate or employee having authority to act on behalf of any Credit Party or any of its Subsidiaries has been, or, to the Knowledge of each Credit Party or any of its Subsidiaries, has been threatened in writing to be, (i) excluded from any Governmental Payor Program pursuant to 42 U.S.C. § 1320a-7b and related regulations, (ii) "suspended" or "debarred" from selling products to the U.S. government or its agencies pursuant to the Federal Acquisition Regulation, relating to debarment and suspension applicable to federal government agencies generally (42 C.F.R. Subpart 9.4), or other Requirements of Law, (iii) debarred, disqualified, suspended or excluded from participation in Medicare, Medicaid or any other health care program or is listed on the General Services Administration list of excluded parties, nor, to the Knowledge of each Credit Party or any of its Subsidiaries, is any such debarment, disqualification, suspension or exclusion threatened in writing or pending, or (iv) made a party to any other action by any Governmental Authority that may prohibit the applicable Credit Party or Subsidiary from selling Products or providing services to any governmental or other purchaser pursuant to any Health Care Laws.

(g) *HIPAA*. Each Credit Party and each of its Subsidiaries is in material compliance with all applicable foreign, federal, state and local laws and regulations regarding the privacy and security of health information and electronic transactions, including HIPAA, and the provisions of all business associate agreements (as such term is defined by HIPAA) to which it is a party, if any, and has implemented adequate policies, procedures and training designed to assure continued compliance and to detect non-compliance, to the extent applicable. To the extent applicable to any Credit Party and for so long as (i) any Credit Party is a "covered entity" as defined in 45 C.F.R. § 160.103, (ii) any Credit Party is a "business associate" as defined in 45 C.F.R. § 160.103, (iii) any Credit Party is subject to or covered by the HIPAA Administrative Requirements codified at 45 C.F.R. Parts 160 & 162 or the HIPAA Security and Privacy Requirements codified at 45 C.F.R. Parts 160 & 164, or (iv) any Credit Party sponsors any "group health plans" as defined in 45 C.F.R. § 160.103, such Credit Party has: (A) completed thorough

and detailed surveys, audits, inventories, reviews, analyses and/or assessments, including risk assessments, (collectively "**Assessments**") of all material areas of its business and operations subject to HIPAA or that could be materially and adversely affected by the failure of such Credit Party, or any Person acting on behalf of any Credit Party, as the case may be, to the extent these Assessments are appropriate or required for such Credit Party to be in material compliance with HIPAA; (B) developed a detailed plan and time line for becoming in material compliance with HIPAA (a "**HIPAA Compliance Plan**"); and (C) implemented those provisions of its HIPAA Compliance Plan necessary to ensure that such Credit Party is in material compliance with HIPAA.

(h) *Corporate Integrity Agreement*. None of the Credit Parties or their Subsidiaries or their Affiliates, nor any officer, director, managing employee or, to the Knowledge of each Credit Party or any of its Subsidiaries, agent (as those terms are defined in 42 C.F.R. § 1001.1001) thereof, is a party to, or bound by, any order, individual integrity agreement, or corporate integrity agreement with any Governmental Authority concerning compliance with any laws, rules, or regulations, issued under or in connection with a Governmental Payor Program.

(i) *Reimbursement Coding*. To the extent that any Credit Party or any of its Subsidiaries provides to its customers or any other Persons reimbursement coding or billing advice, such advice, to the Knowledge of each Credit Party or any of its Subsidiaries, is complete and accurate and conforms to applicable coding systems.

4.21. Regulatory Approvals.

(a) Schedule 4.21 of the Disclosure Letter contains a list of all Products that have been Commercialized. Each Credit Party and its Subsidiaries, as applicable, has all Regulatory Approvals necessary to conduct its business in the manner in which such business is currently conducted. Borrower has previously made available to Lender all Regulatory Approvals, all material correspondence with Regulatory Agencies (including the FDA and any foreign equivalent) with respect to such Regulatory Approvals and all adverse event reports with respect to the Products that have been Commercialized and all requested documents related to the Products that have been Commercialized, in each case, in the possession and control of Borrower or any of its Subsidiaries. Borrower has not withheld any document or information with respect to the Products that have been Commercialized that would reasonably be considered to be material to Lender's decision to provide the financing contemplated by this Agreement.

(b) Each Credit Party and its Subsidiaries, and, to the Knowledge of each Credit Party or any of its Subsidiaries, each licensee of a Credit Party or any of its Subsidiaries of any Intellectual Property, are in compliance with, and have complied with, all applicable federal, state, local and foreign laws, rules and regulations, governing its business, including all regulations promulgated by each applicable Regulatory Agency, the failure of compliance with which could reasonably be expected to result in a Material Adverse Change. No Credit Party or its Subsidiaries has received any written notice from any Regulatory Agency citing action or inaction by any Credit Party or any of its Subsidiaries that would constitute a violation of any applicable federal, state, local and foreign laws, rules, regulations or standards, which could reasonably be expected to result in a Material Adverse Change.

(c) Without limiting the generality of clause (b) above, to the Knowledge of each Credit Party or any of its Subsidiaries, any and all studies, tests and preclinical and clinical trials and investigations conducted by or on behalf of the Credit Parties relating to any Product have been, and are being, conducted in all material respects in accordance with all Requirements of Law, including good clinical practices (including under FDA (and foreign equivalent) regulations (including the requirements set forth in 21 C.F.R. Part 11, Part 50, Part 54, Part 56, Part 812 and Part 814, as applicable)), good laboratory practices and investigational device exemption requirements; Borrower has previously made available to Lender descriptions of the results of such studies, tests, trials and investigations, which are accurate in all material respects; and no Credit Party or any of its Subsidiaries has received any notices or correspondence from any applicable Regulatory Agency or comparable authority requiring the termination, suspension, material modification or clinical hold of any such studies, tests, trials or investigations conducted by or on behalf of a Credit Party or its Subsidiaries, which termination, suspension, material modification or clinical hold could reasonably be expected to result in a Material Adverse Change.

4.22. Supply and Manufacturing.

(a) To the Knowledge of each Credit Party or any of its Subsidiaries, the development, Manufacturing and production of each Product has at all times been (i) in compliance in all material respects with the final release quality specifications in effect for such Product and (ii) in compliance in all material respects with Requirements of Law, including the FDCA (and any foreign equivalent). Except as set forth on Schedule 4.22(a) of the Disclosure Letter, to the Knowledge of each Credit Party or any of its Subsidiaries, no Person currently Manufacturing Product and currently party to a Manufacturing Agreement and, to the actual knowledge of each Credit Party or any of its Subsidiaries, no other Person Manufacturing Product, in each case has received in the past five (5) years a Form 483 or is currently subject to a Form 483 impacting any Product with respect to any facility Manufacturing Product and that, with respect to each such Form 483, all scientific and technical violations or other issues relating to good manufacturing practice requirements documented therein, and any disputes regarding any such violations or issues, have been corrected or otherwise resolved. Each Product that has been Commercialized has at all times been Manufactured in sufficient quantities and of a sufficient quality to satisfy at least the forecasted demand of such Product (as reasonably determined by a Responsible Officer of Borrower in good faith and based upon reasonable assumptions).

(b) Except as set forth on Schedule 4.22(b) of the Disclosure Letter, (i) no Product has been recalled, suspended or discontinued as a result of any action by the FDA or any other Governmental Authority (or any foreign equivalent), by any Credit Party or any of its Subsidiaries or by any licensee, distributor or marketer of such Product and (ii) the Credit Parties and their Subsidiaries have maintained global post-marketing surveillance programs and procedures specifically designed to comprehensively monitor, collect and timely report any medical device reports required to be reported in relation to any of the Products in accordance with any Requirements of Law. To the Knowledge of each Credit Party or any of its Subsidiaries, there are no facts, circumstances, or conditions that could reasonably be expected to result in a recall, suspension, or discontinuance of any Product.

(c) Schedule 4.22(c) of the Disclosure Letter contains a true, correct and complete list of all manufacturing and supply Contracts entered into by any Credit Party or any of its Subsidiaries with third parties and in effect for the supply of Product (the "**Manufacturing Agreements**") as of the Tranche A Closing Date. Borrower has previously made available to Lender true, correct and complete copies of each Manufacturing Agreement. After giving effect to consummation of the transactions contemplated by this Agreement and the other Loan Documents, except as described on Schedule 4.22(c) of the Disclosure Letter, each Manufacturing Agreement is a valid and binding obligation of the applicable Credit Party or Subsidiary and is in full force and effect, and to the Knowledge of each Credit Party or any of its Subsidiaries, is a valid and binding obligation of any other party thereto, and neither the applicable Credit Party or its Subsidiaries or, to the Knowledge of each Credit Party or any of its Subsidiaries, any other party thereto is in breach thereof or default thereunder. Except as described on Schedule 4.22(c) of the Disclosure Letter, no Credit Party or any of its Subsidiaries has received any notice from any party thereto, oral or written, regarding (i) the cancellation, termination or invalidation of any Manufacturing Agreement or (ii) any indication by or intent or threat of, such party, oral or written, to reduce or cease the supply of Product through calendar year 2022.

4.23. Additional Representations and Warranties.

(a) Except as set forth on Schedule 4.23(a) of the Disclosure Letter, after giving effect to consummation of the transactions contemplated by this Agreement and the other Loan Documents, as of the Tranche A Closing Date, there is no Subordinated Debt.

(b) There are no Hedging Agreements other than Permitted Hedging Agreements.

(c) Since December 31, 2016, there shall not have occurred or failed to occur any change or event that has had or could reasonably be expected to have, either alone or in conjunction with any other change(s), event(s) or failure(s), a Material Adverse Change.

(d) No Default exists hereunder.

(e) Neither any Credit Party nor any of its Subsidiaries own or have owned in the past any real property and neither any Credit Party nor any of its Subsidiaries lease any real property other than the properties subject to the leases set forth in Schedule 4.23(e) of the Disclosure Letter.

(f) There are no Consulting Royalties due and payable with respect to any Product and there are no Contracts pursuant to which any Consulting Royalties will become due and payable with respect to any Product.

5. AFFIRMATIVE COVENANTS

Each Credit Party covenants and agrees that, until payment in full of all Obligations (other than inchoate indemnity obligations), each Credit Party shall, and shall cause each of its Subsidiaries to:

5.1. Government Compliance. Except as permitted in Section 6.3, maintain its and all its Subsidiaries' legal existence and good standing in their respective jurisdictions of formation and maintain qualification in each other jurisdiction in which the failure to so qualify could reasonably be expected to result in a Material Adverse Change. Each Credit Party shall (i) comply, and cause each of its Subsidiaries to comply, with all Requirements of Law of any Governmental Authority to which it is subject, noncompliance with which could reasonably be expected to result, individually or in the aggregate, in a Material Adverse Change, (ii) maintain policies that assure that each of its employees has all required licenses, credentials, approvals and other certifications to perform his or her duties and (iii) obtain, and take all necessary action to timely renew, all material permits, licenses and authorizations which are necessary in the proper conduct of its business.

5.2. Financial Statements, Compliance Certificates; Notices; Reports. Deliver to Lender:

(a) Financial Statements; Compliance Certificate; Other Information.

(i) Annual Financial Statements. So long as Borrower is not a Public Reporting Company, (1) as soon as available, but in any event within one hundred eighty (180) days after the end of each fiscal year of Borrower, beginning with the fiscal year ending December 31, 2017, a consolidated balance sheet of Borrower and its Subsidiaries as of the end of such fiscal year, and the related consolidated statements of income, cash flows and stockholders' equity for such fiscal year, setting forth in each case in comparative form the figures for the previous fiscal year, with such consolidated financial statements to be audited and accompanied by (A) a report and opinion of Borrower's independent certified public accounting firm of recognized national or regional standing (which report and opinion shall be prepared in accordance with Applicable Accounting Standards and shall not be subject to any qualification as to scope of audit, but which may be subject to a qualification as to "going concern"), stating that such financial statements fairly present, in all material respects, the consolidated financial condition, results of operations and cash flows of Borrower as of the dates and for the periods specified in accordance with Applicable Accounting Standards, and (B) (if and only if Borrower is required to comply with the internal control provisions pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 requiring an attestation report of such independent certified public accounting firm) an attestation report of such independent certified public accounting firm as to Borrower's internal controls pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 attesting that such internal controls meet the requirements of the Sarbanes-Oxley Act of 2002 and (2) as soon as available, but in any event within sixty (60) days after the end of each fiscal year of Borrower, beginning with the fiscal year ending December 31, 2017, an unaudited consolidated balance sheet of Borrower and its Subsidiaries as of the end of such fiscal year, and the related unaudited consolidated statements of income, cash flows and stockholders' equity for such fiscal year, setting forth in each case in comparative form the figures for the previous fiscal year. Each of the foregoing consolidated financial statements shall be certified by a Responsible Officer as, to his or her knowledge, fairly presenting, in all material respects, the consolidated financial condition, results of operations and cash flows of Borrower and its Subsidiaries as of the dates and for the periods specified in accordance with Applicable Accounting Standards consistently applied;

(ii) Quarterly Financial Statements. So long as Borrower is not a Public Reporting Company, as soon as available, but in any event within sixty (60) days after the end of each of the first three (3) fiscal quarters of each fiscal year of Borrower, beginning with the fiscal quarter ending March 31, 2018, a consolidated balance sheet of Borrower and its Subsidiaries as of the end of such fiscal quarter, and the related consolidated statements of income and cash flows and for such fiscal quarter and (in respect of the second and third fiscal quarters of such fiscal year) for the then-elapsed portion of Borrower's fiscal

year, setting forth in each case in comparative form the figures for the comparable period or periods in the previous fiscal year, subject to normal year-end audit adjustments and the absence of disclosures normally made in footnotes. Such consolidated financial statements shall be certified by a Responsible Officer as, to his or her knowledge, fairly presenting, in all material respects, the consolidated financial condition, results of operations and cash flows of Borrower and its Subsidiaries as of the dates and for the periods specified in accordance with Applicable Accounting Standards consistently applied, and on a basis consistent with the audited consolidated financial statements referred to under Section 5.2(a)(i), subject to normal year-end audit adjustments and the absence of footnotes;

(iii) Quarterly Compliance Certificate. As soon as available, but in no event later than sixty (60) days after the last day of each fiscal quarter, commencing with the fiscal quarter ending December 31, 2017, a duly completed Compliance Certificate signed by a Responsible Officer, among other things (i) certifying that no Event of Default or Default has occurred or, if such an Event of Default or Default has occurred, specifying the nature and extent thereof and any corrective action taken or proposed to be taken with respect thereto and (ii) setting forth computations in reasonable detail satisfactory to Lender, acting reasonably, demonstrating compliance with the covenants contained in Section 5.12 and Section 6.17;

(iv) SEC Statements. After Borrower becomes a Public Reporting Company: (A) within five (5) days of filing, access (via posting such reports, or providing a link thereto, on Borrower's website on the internet at Borrower's website address) to all reports on Form 10-K and Form 10-Q filed with the SEC, any Governmental Authority succeeding to any or all of the functions of the SEC or with any national securities exchange; (B) within five (5) days of filing, written notice and access (via posting such reports, or providing a link thereto, on Borrower's website on the internet at Borrower's website address) to all reports on Form 8-K filed with the SEC; and (C) copies of (via posting such reports, statements or materials, or providing a link thereto, on Borrower's website on the internet at Borrower's website address) all other reports, proxy statements and other materials filed by Borrower with the SEC, any Governmental Authority succeeding to any of the functions of the SEC or with any national securities exchange; and

(v) Information during Event of Default. As promptly as practicable (and in any event within five (5) Business Days of the request therefor), such additional information regarding the business or financial affairs of Borrower or any of its Subsidiaries, or compliance with any of the terms or provisions of this Agreement or any other Loan Document, as Lender may from time to time reasonably request during the existence of any Event of Default (subject to reasonable requirements of confidentiality, including requirements imposed by law or Contract; provided that Borrower shall not be obligated to disclose any information that is reasonably subject to the assertion of attorney-client privilege);

All statements and certificates (as applicable) of Borrower and each of its Subsidiaries required to be delivered to Lender pursuant to this Section 5.2(a) will be prepared in conformity with Applicable Accounting Standards (other than any immaterial deviations thereto) applied on a consistent basis throughout the periods covered thereby and will fairly present in all material respects the consolidated financial condition of Borrower and its Subsidiaries and their consolidated results of operations as of the dates indicated and the changes in their cash flows for the periods specified (other than any pro forma statements and projections provided to Lender, such pro forma statements and projections representing the best good faith estimates of Borrower and being based on assumptions believed by Borrower to be fair and reasonable at the time made, and with respect to any such pro forma statements or projections which include adjustments from Applicable Accounting Standards, such adjusted pro forma statements and projections being in the same format as provided to the audit committee of the Board of Directors);

(b) [Reserved];

(c) Other Statements. So long as Borrower is not a Public Reporting Company, copies of all statements, reports and notices made available to Borrower's security holders generally or to any holders of Subordinated Debt, in each case, within five (5) days of delivery to any such Person;

(d) Legal Action Notice. As promptly as practicable, a report of any legal action, litigation, investigation or proceeding pending or, in each case, threatened in writing against any Credit Party or any Subsidiary, or any material development in any such legal action, litigation, investigation or proceeding (i) that could result in damages or costs to such Credit Party or such Subsidiary in an amount in excess of $250,000, individually, or $500,000, in the aggregate, when aggregated with all pending or threatened (in writing) legal actions against all Credit Parties and their respective Subsidiaries or (ii) which alleges potential violations of the Health Care Laws, the FDA Laws or any applicable statutes, rules, regulations, standards, policies or orders administered or issued by any foreign Governmental Authority, which, individually or in the aggregate, could reasonably be expected to have a Material Adverse Change;

(e) Consolidated Plan and Financial Forecast; Board Approved Projections. No later than March 1 of each fiscal year of Borrower, a consolidated plan and financial forecast of Borrower and its Subsidiaries through the Term Loan Maturity Date, including a forecasted consolidated balance sheet, statements of income and cash flows, and an explanation of the assumptions on which such forecast is based and demonstrating projected compliance with the financial covenants set forth in Sections 5.12 and 6.17 and any amendments thereto or financial projections (or amendments to financial projections) approved by the Board of Directors, whether quarterly or otherwise;

(f) Other Financial Information. As promptly as practicable, other financial information reasonably requested by Lender;

(g) Notice of Defaults, Events of Default, ERISA Events and Material Adverse Change. Written notice as promptly as practicable (and in any event within five (5) Business Days) after a Responsible Officer of Borrower or any of its Subsidiaries shall have obtained knowledge of the occurrence of (i) any Default or Event of Default, (ii) any ERISA Event or (iii) any event or circumstance that would render the representations and warranties in Section 4.23(c) or the ultimate sentence of Section 4.7(a) untrue if made at such time;

(h) Intellectual Property; Regulatory. Written notice as promptly as practicable (and in any event no later than five (5) Business Days) after a Responsible Officer of Borrower or any of its Subsidiaries shall have obtained Knowledge of any of the following:

(i) any material breach or default by Borrower or any of its Subsidiaries of any covenant, agreement or other provision of (A) this Agreement or any other Loan Document, or (B) any Current Company IP Agreement or any Material Contract (other than this Agreement or any other Loan Document) that, individually or together with any other such breach or default, could reasonably be expected to result in a Material Adverse Change;

(ii) any license to a third party of any rights to develop, Manufacture, use or Commercialize the Products in the Territory (other than agreements and arrangements that are Permitted Licenses pursuant to clauses (c) or (d) of the definition thereof);

(iii) any material breach or default by a counterparty under any Current Company IP Agreement or any Material Contract, or the termination of any Current Company IP Agreement or Material Contract (irrespective of whether pursuant to the terms thereof), in each case, that, individually or together with any other such breach, default or termination, could reasonably be expected to result in a Material Adverse Change;

(iv) the commencement of any action or proceeding against Borrower or any of its Subsidiaries which could reasonably be expected to result in a Material Adverse Change, or which challenges the validity of any claim in any Patent within the Company IP utilized in connection with any Product that could reasonably be expected to materially and adversely affect the exploitation of (including the ability to own or license) such Product by Borrower or any of its Subsidiaries;

(v) any written notice that the FDA (or foreign equivalent) or other Regulatory Agency is limiting, suspending or revoking any Regulatory Approval, changing the market classification or labeling of or otherwise materially restricting Manufacture or Commercialization of any Product, or is considering any of the foregoing;

(vi) Borrower or any of its Subsidiaries becoming subject to any administrative or regulatory enforcement action, warning letter or written notice of violation letter from the FDA (or foreign equivalent) or other Regulatory Agency, or any Product of Borrower or any of its Subsidiaries being seized, withdrawn, recalled, detained or subject to a suspension of Manufacturing, or the commencement of any proceedings in the United States seeking the withdrawal, recall, suspension, import detention or seizure of any Product; or

(vii) the occurrence of any event (including the occurrence of a Manufacturing disruption) with respect to any Product which could reasonably be expected to result in a Material Adverse Change.

(i) Governmental Recommendations. Within five (5) Business Days of receipt thereof, copies of any written recommendation from any Governmental Authority or other regulatory body that Borrower or any of its Subsidiaries should have its licensure, provider or supplier number, or accreditation suspended, revoked, or limited in any material way, or any penalties or sanctions imposed; or

(j) Change in Control.

(i) Written notice promptly, and in any event no later than two (2) Business Days, after the execution of any definitive acquisition, merger or restructuring agreement, pursuant to which a Change in Control is contemplated to occur, which notice shall include reasonable detail as to the nature, timing and other circumstances of such Change in Control; and

(ii) A Change in Control Notice promptly, and in any event no later than two (2) Business Days, after the consummation of a Change in Control.

5.3. Inventory; Returns; Maintenance of Properties. Keep all Inventory in good and marketable condition, free from material defects. Returns and allowances between Borrower and its Account Debtors shall follow Borrower's customary practices as they exist at the Effective Date and each Credit Party shall promptly notify Lender in writing of all returns, allowances, recoveries, disputes and claims that involve more than $500,000, individually, or more than $1,000,000, in the aggregate, when aggregated with any and all other returns, allowances, recoveries, disputes and claims. Each Credit Party will, and will cause each of its Subsidiaries to, maintain or cause to be maintained in good repair, working order and condition, ordinary wear and tear, casualty and condemnation excepted, all material tangible properties used or useful in its respective business, and from time to time will make or cause to be made all appropriate repairs, renewals and replacements thereof.

5.4. Taxes; Pensions. Borrower shall timely file, and require each of its Subsidiaries to timely file, all income and other material required Tax returns and reports or extensions therefor and timely pay, and require each of its Subsidiaries to timely pay, all material foreign, federal, state and local Taxes, assessments, deposits and contributions imposed upon it or any of its properties or assets or in respect of any of its income, businesses or franchises before any penalty or fine accrue thereon, and all claims (including claims for labor, services, materials and supplies) for sums that have become due and payable and that by law have or may become a Lien upon any of its properties or assets, prior to the time when any penalty or fine shall be incurred with respect thereto; provided that no such Tax or claim need be paid if it is being contested in good faith by appropriate proceedings promptly instituted and diligently conducted, so long as (i) adequate reserve or other appropriate provision, as shall be required in conformity with Applicable Accounting Standards shall have been made therefor and (ii) in the case of a Tax or claim which has or may become a Lien against any of the Collateral, such contest proceedings conclusively operate to stay the sale of any portion of the Collateral to satisfy such Tax or claim. No Credit Party will, nor will it permit any of its Subsidiaries to, file or consent to the filing of any consolidated income Tax return with any Person (other than Borrower or any of its Subsidiaries).

5.5. Insurance. Maintain or cause to be maintained, with financially sound and reputable insurers, such public liability insurance, third party property damage insurance, business interruption insurance and casualty insurance with respect to liabilities, losses or damage in respect of the assets, properties and businesses of Borrower and its Subsidiaries as may customarily be carried or maintained under similar circumstances by Persons of established reputation engaged in similar businesses, in each case, in such amounts, with such deductibles, covering such risks and otherwise on such terms and conditions as shall be customary for such Persons. All property policies of the Credit Parties shall have a loss payable endorsement showing Lender as loss payee and waive subrogation against Lender and shall provide that the insurer must give Lender at least twenty (20) days' notice before canceling its policy (or ten (10) days' notice in the case of the failure to pay any premiums thereunder). At the request of Lender, each Credit Party shall deliver to Lender copies of policies and evidence of all premium payments. All liability policies of the Credit Parties shall show, or have endorsements showing, Lender as an additional insured, and all such policies (or the loss payable and additional insured endorsements) shall provide that the insurer shall endeavor to give Lender at least twenty (20) days' notice before canceling its policy (or ten (10) days' notice in the case of the failure to pay any premiums thereunder). If Borrower or any of its Subsidiaries fails to obtain insurance as required under this Section 5.5 or to pay any amount or furnish any required proof of payment to third persons and Lender, upon the occurrence and during the continuance of an Event of Default, Lender may make all or part of such payment or obtain such insurance policies required in this Section 5.5, and take any action under the policies Lender deems prudent. Borrower may later cancel any insurance purchased by Lender, but only after providing Lender with evidence that there has been obtained insurance as required in this Section 5.5. No payments by Lender pursuant to this Section 5.5 are deemed an agreement to make similar payments in the future or Lender's waiver of any Default or Event of Default.

5.6. Operating Accounts. In the case of any Credit Party, not establish any new Collateral Account at or with any bank or financial institution unless contemporaneously with such establishment, such account is subject to a Control Agreement that is reasonably acceptable to Lender. For each Collateral Account that each Credit Party at any time maintains, such Credit Party shall cause the applicable bank or financial institution at or with which any Collateral Account is maintained to execute and deliver a Control Agreement or other appropriate instrument with respect to such Collateral Account to perfect Lender's Lien in such Collateral Account in accordance with the terms hereunder, which Control Agreement may not be terminated without the prior written consent of Lender. The provisions of the previous two (2) sentences shall not apply to deposit accounts exclusively used for payroll, payroll Taxes and other employee wage and benefit payments to or for the benefit of any Credit Party's employees, zero balance accounts, accounts (including trust accounts) used exclusively for escrow, customs, insurance or fiduciary purposes, merchant accounts, accounts used exclusively for compliance with any Requirements of Law to the extent such Requirements of Law prohibits the granting of a Lien thereon and any other deposit accounts established after the Tranche A Closing Date and then only so long as such deposit accounts do not hold in the aggregate more than $50,000 and for the first thirty (30) days following the establishment of such deposit account (all such accounts, collectively, the "**Excluded Accounts**"); provided that, in each case, Borrower shall identify to Lender all accounts which constitute Excluded Accounts. Notwithstanding the foregoing, the Credit Parties shall have until the date that is ninety (90) days following the closing date of a Permitted Acquisition or other Investment permitted hereunder to comply with the provisions of this Section 5.6 with regard to accounts of the Credit Parties acquired in connection with such Permitted Acquisition or other Investment.

5.7. Protection of Intellectual Property Rights.

(a) (i) Protect, defend and maintain the validity and enforceability of the Company IP material to its business; (ii) maintain the confidential nature of any material trade secrets and trade secret rights; (iii) promptly advise Lender in writing of material infringements, misappropriations or violations of Intellectual Property owned by any Credit Party or any of its Subsidiaries; and (iv) except as permitted by Section 6.1(j), not allow any Company IP material to its business to be abandoned, forfeited or dedicated to the public, or any material Current Company IP Agreement to be terminated by any Credit Party or any of its Subsidiaries, as applicable, without Lender's prior written consent; provided, however, that with respect to Company IP that is not owned by any Credit Party or its Subsidiaries, the obligations of each Credit Party or its Subsidiaries in clauses (i) and (iv) above shall apply only to the extent such Credit Party or its Subsidiaries have the right to take such actions or to cause any licensee or other third party to take such actions pursuant to applicable Contracts or contractual rights.

(b) Provide written notice to Lender within thirty (30) days of entering or becoming bound by any Restricted License (other than over-the-counter software that is commercially available to the public). Each Credit Party shall take such commercially reasonable steps as Lender requests to obtain the consent of, or waiver by,

any Person whose consent or waiver is necessary for (i) any Restricted License to, without giving effect to Section 9-408 of the Code, be deemed "Collateral" and for Lender to have a security interest in it that might otherwise be restricted or prohibited by law or by the terms of any such Restricted License, whether now existing or entered into in the future, and (ii) Lender to have the ability in the event of a liquidation of any Collateral to dispose of such Collateral in accordance with Lender's rights and remedies under this Agreement and the other Loan Documents.

(c) Borrower shall, and shall cause each of its Subsidiaries, as applicable, to: (i) use commercially reasonable efforts, at its sole expense, either directly or, indirectly with respect to any licensee or licensor under the terms of Borrower's (or any of its Subsidiary's) Contract with the respective licensee or licensor, as applicable, to take any and all actions (including taking legal action to specifically enforce the applicable terms of any license or Contract) and prepare, execute, deliver and file Contracts or documents which are necessary or desirable to (A) prosecute and maintain the Company IP material to its business and (B) diligently enforce or defend the Company IP against material infringement, misappropriation, violation or interference by any other Persons and, in the case of Copyrights, Trademarks and Patents within the Company IP, against any claims of invalidity or unenforceability (including by bringing any legal action for infringement, dilution, violation or defending any counterclaim of invalidity or action of a non-Affiliate third party for declaratory judgment of non-infringement or non-interference); (ii) keep Lender reasonably informed by written notice of any and all of such actions and provide Lender with the opportunity to meaningfully consult with Borrower with respect to the direction thereof and Borrower shall consider all of Lender's comments in good faith; provided that such obligations shall be subject to any confidentiality obligations of any Credit Party or any of its Subsidiaries or any protective order binding upon any Credit Party or any of its Subsidiaries; provided, further, that no Credit Party or any of its Subsidiaries shall be obligated to comply with this clause (ii) to the extent compliance would waive attorney-client privilege; and (iii) not, and shall use commercially reasonable efforts to cause any licensee or licensor of the Company IP, as applicable, not to, disclaim or abandon, or fail to take any action necessary or desirable to prevent the disclaimer or abandonment of the Company IP, in each case, only if such disclaimer or abandonment could reasonably be expected to result in a Material Adverse Change.

5.8. Litigation Cooperation. From the date hereof and continuing through the termination of this Agreement, make available to Lender, without expense to Lender, each Credit Party and its officers, employees and agents and such Credit Party's Books, to the extent that Lender may deem them reasonably necessary to prosecute or defend any third-party suit or proceeding instituted by or against Lender with respect to any Collateral or relating to such Credit Party.

5.9. Access to Collateral; Books and Records; Audits. Allow Lender, or its agents, at reasonable times during normal business hours and upon at least three (3) Business Days' notice (provided that no notice is required if an Event of Default has occurred and is continuing), to inspect the Collateral and audit and copy any Credit Party's Books. The foregoing inspections and audits shall be at Borrower's expense. Such inspections or audits shall be conducted no more often than once every twelve (12) months unless an Event of Default has occurred and is continuing or such audit reveals the occurrence of an Event of Default. Borrower shall, and shall cause each of its Subsidiaries to, maintain its Books in such manner as to contain full, true and correct entries of all material dealings and transactions in relation to its business and activities in conformity with Applicable Accounting Standards and all Requirements of Law.

5.10. Use of Proceeds. (a) Use the proceeds of the Term Loan solely to repay in full the Indebtedness outstanding under the Existing Oxford Loan Agreement and any and all associated costs and expenses and to fund its general business requirements and (b) not use the proceeds of the Term Loan to purchase or carry, or to reduce or retire or refinance any credit incurred to purchase or carry, any margin stock (within the meaning of Regulations U and X of the Board of Governors of the Federal Reserve System) or to extend credit to others for the purpose of purchasing or carrying any margin stock, in each case in violation of said Regulations. If requested by Lender, Borrower shall complete and sign Part I of a copy of Federal Reserve Form G-3 referred to in Regulation U and deliver such copy to Lender.

5.11. Environmental Disclosure. Deliver to Lender:

(a) as soon as practicable following receipt thereof, copies of all environmental audits, investigations, analyses and reports of any kind or character, whether prepared by personnel of Borrower or any of its Subsidiaries or by independent consultants, governmental authorities or any other Persons, with respect to significant environmental matters at any Facility or with respect to any material Environmental Claims;

(b) promptly upon a Responsible Officer of any Credit Party or any of its Subsidiaries obtaining knowledge of the occurrence thereof, written notice describing in reasonable detail (i) any Release required to be reported to any federal, state or local governmental or regulatory agency under any applicable Environmental Laws, (ii) any remedial action taken by any Credit Party or any other Person in response to (A) any Hazardous Materials Activities, the existence of which, individually or together with any other Hazardous Materials Activities, have a reasonable possibility of resulting in one or more Environmental Claims that could reasonably be expected to result in a Material Adverse Change or (B) any Environmental Claims which, individually or together with any other Environmental Claims, have a reasonable possibility of resulting in a Material Adverse Change and (iii) any Credit Party's discovery of any occurrence or condition on any real property adjoining or in the vicinity of any Facility that could cause such Facility or any part thereof to be subject to any material restrictions on the ownership, occupancy, transferability or use thereof under any Environmental Laws;

(c) as soon as practicable following the sending or receipt thereof by any Credit Party or any of its Subsidiaries, a copy of any and all written communications with respect to (i) any Environmental Claims that, individually or in the aggregate, have a reasonable possibility of resulting in a Material Adverse Change, (ii) any Release required to be reported to any Governmental Authority, and (iii) any request for information from any Governmental Authority that suggests such authority is investigating whether any Credit Party or any of its Subsidiaries may be potentially responsible for any Hazardous Materials Activity that, individually or together with any other Hazardous Material Activities, has a reasonable possibility of resulting in a Material Adverse Change;

(d) prompt written notice describing in reasonable detail (i) any proposed acquisition of stock, assets, or properties by Borrower or any of its Subsidiaries that could reasonably be expected to (A) expose Borrower or any of its Subsidiaries to, or result in, Environmental Claims that, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change or (B) affect the ability of Borrower or any of its Subsidiaries to maintain in full force and effect all material Governmental Approvals required under any Environmental Laws for their respective operations and (ii) any proposed action to be taken by Borrower or any of its Subsidiaries to modify current operations in a manner that, individually or together with any other such proposed actions, could reasonably be expected to subject Borrower or any of its Subsidiaries to any additional material obligations or requirements under any Environmental Laws; and

(e) with reasonable promptness, such other documents and information as from time to time may be reasonably requested by Lender in relation to any matters disclosed pursuant to this Section 5.11.

Each Credit Party shall, and shall cause each of its Subsidiaries to, promptly take any and all actions necessary to (x) cure any violation of applicable Environmental Laws by Borrower or any of its Subsidiaries that, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change, and (y) make an appropriate response to any Environmental Claim against Borrower or any of its Subsidiaries and discharge any obligations it may have to any Person thereunder where failure to do so, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change.

5.12. Minimum Liquidity. From and after the Tranche A Closing Date, after giving effect to the transactions contemplated hereunder and under the other Loan Documents, Borrower and its Subsidiaries that are Credit Parties shall have consolidated Liquidity, tested as of the end of each Business Day, of not less than Five Million Dollars ($5,000,000.00). Borrower shall deliver to Lender written notice, as promptly as practicable (and in any event within five (5) Business Days) after the occurrence, of the results of any such minimum Liquidity test which indicate that Borrower and its Subsidiaries that are Credit Parties have consolidated Liquidity, as of the applicable date of determination, of less than Five Million Dollars ($5,000,000.00). For the avoidance of doubt, no Credit Party shall be required to maintain a restricted account for purposes of complying with this Section 5.12.

5.13. Further Assurances. Subject to the limitations in Section 5.14(b), at any time or from time to time upon the reasonable request of Lender, each Credit Party will, at its expense, promptly execute, acknowledge and deliver such further documents and do such other acts and things as Lender may reasonably request in order to effectuate the transactions contemplated by the Loan Documents, including taking such steps as are reasonably deemed necessary by Lender to maintain, protect and enforce Lender's Lien on Collateral securing the Obligations created under the Security Agreement and the other Loan Documents.

5.14. Additional Collateral; Guarantors.

(a) Without limiting the generality of Section 5.13 and except as otherwise approved in writing by Lender, the Credit Parties shall cause each of their respective Domestic Subsidiaries (other than Excluded Subsidiaries and any Domestic Subsidiary that is a CFC Holding Company) to, in each case, guarantee the Obligations and to cause each such Domestic Subsidiary to grant to Lender a first priority security interest in and Lien upon, and pledge to Lender, subject to Permitted Liens, the limitations set forth herein and the limitations set forth in the other Loan Documents, all of such Domestic Subsidiary's properties and assets, whether now existing or hereafter acquired or existing, constituting Collateral to secure such guaranty. Furthermore, and except as otherwise approved in writing by Lender on a case-by-case basis, each Credit Party shall, and shall cause each of its Domestic Subsidiaries (excluding Excluded Subsidiaries and any Domestic Subsidiary that is a CFC Holding Company) to, (i) grant Lender a first priority security interest in and Lien upon, and pledge to Lender, subject to Permitted Liens, the limitations set forth herein and the limitations set forth in the other Loan Documents, all of the Equity Interests (other than Excluded Equity Interests) of each of its Domestic Subsidiaries (other than any Excluded Subsidiary and any Domestic Subsidiary that is a CFC Holding Company) and (ii) grant Lender a first priority security interest in and Lien upon, and pledge to Lender, subject to Permitted Liens, the limitations set forth herein and the limitations set forth in the other Loan Documents, sixty-five percent (65%) of the issued and outstanding voting Equity Interests (other than Excluded Equity Interests) and one hundred percent (100%) of the issued and outstanding non-voting Equity Interests (other than Excluded Equity Interests), if any, in, each Foreign Subsidiary and CFC Holding Company directly owned by any such Domestic Subsidiaries. In connection with each pledge of certificated Equity Interests required under the Loan Documents, the Credit Parties shall deliver, or cause to be delivered, to Lender, such certificate(s) together with stock powers or assignments, as applicable, properly endorsed for transfer to Lender or duly executed in blank, in each case reasonably satisfactory to Lender. In connection with each pledge of uncertificated Equity Interests required under the Loan Documents, the Credit Parties shall deliver, or cause to be delivered, to Lender such Equity Interests in accordance with Section 8-106(c)(1) of the Code or an executed uncertificated stock control agreement among the issuer, the registered owner and Lender in the form attached to the Security Agreement as Annex 4. In the event any Credit Party acquires any fee title to real estate with a fair market value in excess of $1,000,000, unless otherwise agreed by Lender, such Person shall execute or deliver, or cause to be executed or delivered, to Lender, (v) within sixty (60) days after such acquisition, an appraisal complying with the Financial Institutions Reform, Recovery and Enforcement Act of 1989, (w) within forty-five (45) days after receipt of notice from Lender that such real estate is located in a Special Flood Hazard Area, Federal Flood Insurance, (x) within sixty (60) days after such acquisition, a fully executed Mortgage, in form and substance reasonably satisfactory to Lender, together with an A.L.T.A. lender's title insurance policy issued by a title insurer reasonably satisfactory to Lender, in form and substance (including any endorsements) and in an amount reasonably satisfactory to Lender insuring that the Mortgage is a valid and enforceable first priority Lien on the respective property, free and clear of all defects, encumbrances and Liens (other than Permitted Liens), (y) simultaneously with such acquisition, then-current A.L.T.A. surveys, certified to Lender by a licensed surveyor sufficient to allow the issuer of the lender's title insurance policy to issue such policy without a survey exception and (z) within sixty (60) days after such acquisition, an environmental site assessment prepared by a qualified firm reasonably acceptable to Lender, in form and substance satisfactory to Lender.

(b) Notwithstanding anything to the contrary herein, in no event shall any Credit Party or any Subsidiary be required to (i) enter into or deliver any foreign law-governed documents, file or record any documents or agreements (including any agreements relating to Intellectual Property) with any foreign Governmental Authority or take any other actions under foreign law with respect to Collateral held outside the United States except as upon the occurrence and during the continuance of an Event of Default and then only if and to the extent then-requested in writing by Lender, or (ii) deliver any bailee agreements in respect of Inventory or Equipment held by sales representatives or customers.

5.15. Formation or Acquisition of Subsidiaries. Subject to the limitations in Section 5.14(b), if Borrower or any of its Subsidiaries at any time after the Tranche A Closing Date forms or acquires a Subsidiary, concurrently therewith, Borrower will notify Lender in writing regarding such formation or acquisition and, as promptly as practicable and in no event later than thirty (30) days after such formation or acquisition: (a) if such

Subsidiary is a Domestic Subsidiary that is not an Excluded Subsidiary or a CFC Holding Company, (i) Borrower will cause such Subsidiary to execute and deliver to Lender a joinder to the Security Agreement and, if applicable, the IP Agreements and any other relevant Collateral Document, (ii) without limiting clause (a)(i) above, such Subsidiary will, and Borrower will cause such Subsidiary to, satisfy all conditions and requirements contained in this Agreement (including Section 5.14) and each other Loan Document (including the Security Agreement) if and to the extent applicable to such Subsidiary, (iii) Borrower will deliver a certificate executed by a Responsible Officer of Borrower or such Subsidiary that all such conditions and requirements have been satisfied (such certificate to be in form and substance reasonably satisfactory to Lender) and (iv) such Subsidiary shall constitute a Guarantor and a Credit Party for all purposes hereunder as of the date of formation or acquisition of such Subsidiary; (b) Borrower will deliver to Lender (i) true, correct and complete copies of the Operating Documents of such Subsidiary, (ii) a Secretary's Certificate, certifying that the copies of such Operating Documents are true, correct and complete (such Secretary's Certificate to be in form and substance reasonably satisfactory to Lender) and (iii) a good standing certificate (or equivalent certification if available in the case of a Subsidiary that is incorporated or organized under the laws of a jurisdiction other than the United States) for such Subsidiary, certified by the Secretary of State (or the equivalent thereof) of its jurisdiction of incorporation or organization; and (c) Borrower will deliver to Lender a Perfection Certificate, updated to reflect the formation or acquisition of such Subsidiary. Any document or Contract executed or issued pursuant to this Section 5.15 shall be a Loan Document.

5.16. Post-Closing Requirements. Borrower will, and will cause each of its Subsidiaries to, take each of the actions set forth on Schedule 5.16 of the Disclosure Letter within the time period prescribed therefor on such schedule, which shall include, among other things, (a) delivery to Lender of true, correct and complete copies of each Control Agreement required by Lender hereunder and executed and delivered by each applicable Credit Party (which shall be in form and substance reasonably satisfactory to Lender); (b) use of commercially reasonable efforts to deliver a landlord's consent in favor of Lender for each Credit Party's leased locations by the respective landlord thereof (which consent shall include an agreement by such landlord to permit reasonable access to such leased premises by Lender or its agents upon an Event of Default for purposes of removal of any and all Collateral, if such leased premises is a warehouse, distribution center or other location at which a material amount of Collateral is located), together with the duly executed original signatures thereto (which shall be in form and substance reasonably satisfactory to Lender); and (c) use of commercially reasonable efforts to deliver a bailee waiver from each bailee in possession of any Collateral (which bailee waivers shall be reasonably satisfactory in form and substance to Lender); provided that no Credit Party shall be required to use commercially reasonable efforts to deliver any bailee agreements in respect of Inventory or Equipment held by sales representatives or customers. All representations and warranties contained in this Agreement and the other Loan Documents shall be deemed modified to the extent necessary to take the actions set forth on Schedule 5.16 of the Disclosure Letter within the time periods set forth therein, rather than elsewhere provided in the Loan Documents).

5.17. Commercialization. Each of Borrower and its Subsidiaries shall use commercially reasonable efforts to (a) Commercialize the Products and (b) otherwise fully exploit the market potential of the Products in the Territory. In connection therewith, from and after the Tranche A Closing Date through December 31, 2022, the Products will be Manufactured in sufficient quantities and of a sufficient quality to satisfy at least the forecasted demand of the Products (as reasonably determined by a Responsible Officer of Borrower in good faith and based upon reasonable assumptions).

5.18. Lender Meetings. Upon the request of Lender, participate in a meeting with Lender once during each fiscal year to be held at Borrower's corporate offices (or at such other location as may be agreed to by Borrower and Lender) at such time as may be agreed to by Borrower and Lender.

6. NEGATIVE COVENANTS

Each Credit Party covenants and agrees that, until payment in full of all Obligations (other than inchoate indemnity obligations), such Credit Party shall not, and shall cause each of its Subsidiaries not to:

6.1. Dispositions. Convey, sell, exchange, lease, transfer, assign, exclusively license out, non-exclusively license out, agree to any covenant not to sue, enter into a co-existence Contract or otherwise dispose of (including any sale-leaseback), directly or indirectly and whether in one or a series of transactions, all or any part of its properties or assets (collectively, "**Transfer**"), except for the following (collectively, "**Permitted Transfers**"):

(a) Transfers of Inventory in the ordinary course of business (including between Credit Parties and Subsidiaries which are not Credit Parties; provided that such Transfers are on a cost-plus basis);

(b) Transfers of surplus, damaged, worn out or obsolete Equipment that is, in the reasonable judgment of Borrower exercised in good faith, no longer economically practicable to maintain or useful in the ordinary course of business and Transfers of other properties or assets in lieu of any pending or threatened institution of any proceedings for the condemnation or seizure of such properties or assets or for the exercise of any right of eminent domain;

(c) Permitted Licenses;

(d) Transfers made in connection with Permitted Liens and Permitted Investments and Transfers permitted by Sections 6.3, 6.6(b), 6.8, 6.9 and 6.10;

(e) Transfers consisting of licenses or covenants not to sue made in connection with the settlement of the litigation matters described on Schedule 4.6 of the Disclosure Letter or about which Lender receives written notice pursuant to Section 5.2(d);

(f) Transfers of cash and Cash Equivalents in a manner that is not prohibited by the terms of this Agreement or the other Loan Documents;

(g) (i) Transfers between or among Credit Parties and (ii) Transfers between or among non-Credit Parties;

(h) the sale or issuance of Equity Interests of any Subsidiary of Borrower to any Credit Party or to any other Subsidiary of Borrower;

(i) the sale or discount without recourse of accounts receivable arising in the ordinary course of business in connection with the compromise or collection thereof;

(j) any abandonment, cancellation, non-renewal or discontinuance of use or maintenance of Intellectual Property (or rights relating thereto) of Borrower and its Subsidiaries that Borrower reasonably determines in good faith is no longer economically practicable to maintain or useful in the ordinary course of business and that is not adverse to the rights, remedies and benefits available to, or conferred upon, Lender under any Loan Document in any material respect or otherwise does not materially diminish the value of the Collateral securing the Obligations;

(k) the granting of Consulting Royalties;

(l) Transfers in connection with the cancellation by Borrower of Indebtedness owed to Borrower listed on Schedule 6.1(l) of the Disclosure Letter;

(m) intercompany licenses or grants of distribution, co-product or similar commercial rights relating to Intellectual Property between or among the Credit Parties and their Subsidiaries, in each case as to geography other than the United States;

(n) other Transfers made in the ordinary course of business on commercially reasonable arm's length terms; and

(o) other Transfers in which such Credit Party will receive cash proceeds in an amount equal to no less than seventy-five percent (75%) of all Transfer consideration (fixed or contingent) paid or payable to such Credit Party or Subsidiary, but only so long as the net cash proceeds of such Transfer are utilized to repay or prepay, in whole or in part, Indebtedness to Lender under and in accordance with this Agreement and the other Loan Documents.

Except as otherwise expressly permitted under this Agreement, no Transfer of all or any part of the properties or assets of any Credit Party to any Affiliate of Borrower that is not a Credit Party shall constitute a Permitted Transfer without the prior written consent of Lender.

6.2. Changes in Business, Management or Business Locations. (a) (i) Engage in any business other than the types of businesses engaged in by such Credit Party and its Subsidiaries on the Tranche A Closing Date or that are reasonably similar, related, complementary, ancillary or incidental thereto or (ii) in the case of Borrower, have a change in chief executive officer or chief financial officer and, to the extent that Borrower's Board of Directors determines a replacement is necessary, a replacement satisfactory to Borrower's Board of Directors is not made within ninety (90) days after such individual's departure.

(b) Without at least twenty (20) days' prior written notice to Lender: (i) change such Credit Party's jurisdiction of organization, (ii) change such Credit Party's organizational structure or type, (iii) change such Credit Party's legal name, or (iv) change any organizational number (if any) assigned by such Credit Party's jurisdiction of organization.

(c) Deliver any portion of the Collateral to one or more bailees or leased locations if the aggregate value of such portion of Collateral, individually or together with any other Collateral at such location(s), is in excess of $1,000,000 (as reasonably determined by a Responsible Officer of Borrower in good faith and based upon reasonable assumptions), unless such Credit Party shall have used commercially reasonable efforts to deliver to Lender:

(i) Subject to Section 5.14(b), a bailee agreement in form and substance reasonably satisfactory to Lender within thirty (30) days of such delivery of Collateral; or

(ii) A landlord's consent in favor of Lender in form and substance reasonably satisfactory to Lender within thirty (30) days of such delivery of Collateral.

6.3. Mergers, Acquisitions, **Liquidations or Dissolutions**.

(a) Merge, consolidate, liquidate or dissolve with or into any other Person, except that:

(i) any Subsidiary of Borrower that is a Credit Party may merge or consolidate with Borrower or any other Subsidiary of Borrower that is a Credit Party; provided that Borrower or such other Credit Party is the surviving entity;

(ii) any Subsidiary of Borrower that is not a Credit Party may merge or consolidate with another Subsidiary of Borrower that is not a Credit Party;

(iii) any Subsidiary of Borrower that is not a Credit Party may merge or consolidate with a Credit Party; provided that such Credit Party is the surviving entity;

(iv) any Subsidiary of Borrower may be dissolved or liquidated; provided that any and all of the properties and assets of such Subsidiary are distributed to one or more Credit Parties or a Subsidiary that is not a Credit Party if the dissolved Subsidiary is not a Credit Party;

(v) any Credit Party may merge, consolidate or dissolve with or into any Person in connection with a Permitted Acquisition; provided, however, that such Person (1) is at the time of such transaction a Credit Party or (2) in connection with the consummation of such transaction, (A) executes and delivers to Lender a joinder to the Security Agreement and, if applicable, the IP Agreements and any other relevant Collateral Document, (B) without limiting sub-clause (A) above, satisfies all conditions and requirements contained in this Agreement (including Section 5.14) and each other Loan Document (including the Security Agreement) if and to the extent applicable to such Person, (C) delivers a certificate executed by a Responsible Officer of such Person that all such conditions and requirements have been satisfied (such certificate to be in form and substance reasonably satisfactory to Lender) and (D) shall constitute a Guarantor and a Credit Party for all purposes hereunder as of the date of consummation of such transaction;

(vi) any Subsidiary that is not a Credit Party may merge, consolidate or dissolve with or into any Person in connection with a Permitted Acquisition; and

(vii) any Investment permitted by Section 6.8 may be structured as a merger or consolidation; or

(b) make, or permit any of its Subsidiaries to make, Acquisitions outside the ordinary course of business, including any purchase of the assets of any division or line of business of any other Person, other than Permitted Acquisitions or Permitted Investments.

6.4. Indebtedness. Directly or indirectly, create, incur, assume or guaranty, or otherwise become or remain directly or indirectly liable with respect to, any Indebtedness, other than Permitted Indebtedness.

6.5. Encumbrance. Except for Permitted Liens, create, incur, allow, or suffer to exist any Lien on any of its properties or assets, or assign or convey any right to receive income (except as permitted by Section 6.1 or in connection with royalties payable in connection with any Permitted Acquisition), including the sale of any Accounts (except as permitted by Section 6.1), or permit any Collateral not to be subject to the first priority security interest granted in the Security Agreement or otherwise pursuant to the other Collateral Documents (except for Permitted Liens that are permitted by the terms of this Agreement to have priority over Lender's Lien). The parties hereto acknowledge and agree that at all times prior to the Tranche A Closing Date, this covenant shall not apply to Company IP to the extent the application of this covenant would violate the terms of the Existing Oxford Loan Agreement.

6.6. No Further Negative Pledges; Negative Pledge.

(a) Enter into any Contract or document directly or indirectly prohibiting or limiting the assignment, mortgage or pledge of, or the grant of a security interest in or the creation, incurrence or existence of any Lien upon, any of its properties or assets, whether now owned or hereafter acquired, to or in favor of Lender pursuant to the Loan Documents, except with respect to the following:

(i) specific properties or assets encumbered by Permitted Liens to secure payment of Permitted Indebtedness (including the Permitted Indebtedness set forth in clause (e) of the definition of "Permitted Indebtedness"), if and only to the extent each such prohibition or limitation applies only to such properties or assets;

(ii) prohibitions or limitations set forth in any Contract relating to unsecured Permitted Indebtedness or the Permitted Indebtedness set forth in clause (e) of the definition of "Permitted Indebtedness", in the case of each such Contract if and only to the extent such prohibitions or limitations, taken as a whole, are not materially more restrictive than the prohibitions and limitations set forth in this Agreement or any other Loan Document, taken as a whole (as reasonably determined by a Responsible Officer of Borrower in good faith);

(iii) customary provisions restricting assignments, subletting, sublicensing or other transfer of property subject thereto set forth in leases, subleases, licenses (including Permitted Licenses), asset sale agreements and other similar Contracts that are not prohibited under this Agreement or any other Loan Document, if and only to the extent each such restriction applies only to the properties or assets subject to such leases, subleases, licenses, agreements or Contracts;

(iv) prohibitions or limitations on the transfer or assignment of any properties, assets or Equity Interests set forth in any Contract entered into in the ordinary course of business that is not prohibited under this Agreement or any other Loan Document (including Section 6.6(b) below, if applicable), if and only to the extent each such prohibition or limitation applies only to such properties, assets or Equity Interests;

(v) prohibitions or limitations imposed by Requirements of Law;

(vi) prohibitions or limitations that exist as of the Tranche A Closing Date under Indebtedness existing on the Tranche A Closing Date (set forth on Schedule 13.1 of the Disclosure Letter); provided, however, that at all times prior to the Tranche A Closing Date, this covenant shall not apply to Company IP to the extent the application of this covenant would violate the terms of the Existing Oxford Loan Agreement;

(vii) customary provisions in shareholders agreements, joint venture agreements, organizational documents or similar binding Contracts relating to any joint venture entity or non-Wholly-Owned Subsidiary and applicable solely to such joint venture entity or non-Wholly-Owned Subsidiary and the Equity Interests issued thereby;

(viii) customary net worth provisions set forth in real property leases entered into by Subsidiaries of Borrower, so long as such net worth provisions could not reasonably be expected to impair the ability of Borrower or its Subsidiaries to meet their ongoing obligations (as reasonably determined by a Responsible Officer of Borrower in good faith);

(ix) customary net worth provisions set forth in customer Contracts entered into in the ordinary course of business that are not prohibited under this Agreement or any other Loan Document, so long as such net worth provisions could not reasonably be expected to impair the ability of Borrower or its Subsidiaries to meet their ongoing obligations (as reasonably determined by a Responsible Officer of Borrower in good faith);

(x) restrictions on cash or other deposits (including escrowed funds) imposed by Contracts entered into in the ordinary course of business that are not otherwise not prohibited under this Agreement or any other Loan Document;

(xi) prohibitions or limitations set forth in any Contract in effect at the time any Person becomes a Subsidiary (but not any amendment, modification, restatement, renewal, extension, supplement or replacement expanding the scope of any such restriction or condition); provided that such Contract was not entered into in contemplation of such Person becoming a Subsidiary and each such prohibition or limitation does not apply to Borrower or any other Subsidiary (other than such Person and any other Person that is a Subsidiary of such first Person at the time such first Person becomes a Subsidiary);

(xii) prohibitions or limitations imposed by any Loan Document;

(xiii) customary provisions set forth in joint venture agreements or Contracts governing minority investments that are not prohibited by this Agreement or any other Loan Document, if and only to the extent each such prohibition or limitation applies only to the joint venture entity or minority investment that is the subject of such agreement or Contract; and

(xiv) prohibitions or limitations imposed by any amendments, modifications, restatements, renewals, extensions, supplements or replacements of any of the Contracts referred to in clauses (i) through (xiii) above, except to the extent that any such amendment, modification, restatement, renewal, extension, supplement or replacement expands the scope of any such prohibition or limitation.

(b) Except as permitted by Section 6.1(h), Transfer or create, incur, allow or suffer to exist any Lien on, any Equity Interests constituting Collateral issued by any Subsidiary which are owned or otherwise held by such Credit Party or any Subsidiary thereof, except for any Lien or claim in favor of Lender pursuant to the Loan Documents, any Permitted Lien and sales, assignments, transfers, exchanges or other dispositions to qualify directors if required by Requirements of Law or otherwise permitted under this Agreement; provided that, in the case of sales, assignments, transfers, exchanges or other dispositions to qualify directors as required by Requirements of Law, such sale, assignment, transfer, exchange or other disposition shall be for the minimum number of Equity Interests as are necessary for such qualification under Requirements of Law.

6.7. Maintenance of Collateral Accounts. Maintain any Collateral Account except pursuant to the terms of Section 5.6 hereof.

6.8. Distributions; Investments. (a) Pay any dividends or make any distribution or payment on or redeem, retire or purchase any capital stock, except for the following:

(i) The conversion by Borrower of any of its convertible securities into other securities pursuant to the terms of such convertible securities or otherwise in exchange thereof;

(ii) The payment of dividends by Borrower solely in non-cash pay and non-redeemable capital stock (including, for the avoidance of doubt, dividends and distributions payable solely in Equity Interests);

(iii) The redemption or repurchase of Equity Interests by Borrower from current or former officers, employees, directors and consultants of Borrower, so long as (A) an Event of Default does not exist at the time of such redemption or repurchase and would not exist after giving effect to such redemption or repurchase and (B) the amount paid for all such redemptions and repurchases shall not exceed $500,000 in the aggregate, in any fiscal year of Borrower;

(iv) The repurchase or other acquisition of Equity Interests deemed to occur (A) upon the exercise of stock options, warrants, restricted stock units or other rights to purchase Equity Interests if such Equity Interests represent a portion of the exercise price thereof or conversion price thereof and (B) in connection with any tax withholding imposed, levied, collected, withheld or assessed by any Governmental Authority upon the grant of or any exercise or vesting of any Equity Interests (or options in respect thereof) of current or former officers, employees, directors and consultants of Borrower;

(v) Cash payments in lieu of the issuance of fractional shares in connection with the exercise of warrants, options or other securities convertible into or exchangeable for Equity Interests;

(vi) In connection with any Permitted Acquisition by Borrower or any of its Subsidiaries, (A) the receipt or acceptance of the return to Borrower or any of its Subsidiaries of Equity Interests of Borrower constituting a portion of the purchase price consideration in settlement of indemnification claims, or as a result of a purchase price adjustment (including earn-outs or similar obligations) and (B) payments or distributions to equity holders pursuant to appraisal rights required under Requirements of Law; and

(vii) The distribution of rights pursuant to any shareholder rights plan or the redemption of such rights for nominal consideration in accordance with the terms of any shareholder rights plan; or

(b) Directly or indirectly (including by the formation of any Subsidiary) make any Investment other than Permitted Investments.

Notwithstanding the foregoing, (x) Subsidiaries shall be permitted to pay dividends or make distributions to any Credit Party, and (y) Subsidiaries that are not Credit Parties shall be permitted to pay dividends or make distributions to other Subsidiaries that are not Credit Parties.

6.9. Restrictions on Subsidiary Distributions. Create or otherwise cause or suffer to exist or become effective any consensual encumbrance or restriction of any kind on the ability of any Subsidiary of Borrower to (a) pay dividends or make any other distributions on any of such Subsidiary's Equity Interests owned by Borrower or any other Subsidiary of Borrower, (b) repay or prepay any Indebtedness owed by such Subsidiary to Borrower or any other Subsidiary of Borrower, (c) make loans or advances to Borrower or any other Subsidiary of Borrower, or (d) Transfer any of its properties or assets to Borrower or any other Subsidiary of Borrower, other than any of the following restrictions or encumbrances, as applicable:

(i) encumbrances of specific properties or assets under Permitted Liens to secure payment of Permitted Indebtedness (including the Permitted Indebtedness set forth in clause (e) of the definition of "Permitted Indebtedness"), if and only to the extent each such encumbrance applies only to such properties or assets;

(ii) restrictions or encumbrances set forth in any Contract relating to unsecured Permitted Indebtedness or the Permitted Indebtedness set forth in clause (e) of the definition of "Permitted Indebtedness", in the case of each such Contract if and only to the extent such prohibitions or limitations, taken as a whole, are not materially more restrictive than the prohibitions and limitations set forth in this Agreement or any other Loan Document, taken as a whole (as reasonably determined by a Responsible Officer of Borrower in good faith);

(iii) customary provisions restricting assignments, subletting, sublicensing or other transfer of property subject thereto set forth in leases, subleases, licenses (including Permitted Licenses), asset sale agreements and other similar Contracts that are not prohibited under this Agreement or any other Loan Document, if and only to the extent each such restriction applies only to the properties or assets subject to such leases, subleases, licenses, agreements or Contracts;

(iv) restrictions or encumbrances on the transfer or assignment of any properties, assets or Equity Interests set forth in any Contract entered into in the ordinary course of business that is not prohibited under this Agreement or any other Loan Document, if and only to the extent each such restriction or encumbrance applies only to such properties, assets or Equity Interests;

(v) restrictions or encumbrances imposed by Requirements of Law;

(vi) restrictions or encumbrances that exist as of the Tranche A Closing Date under Indebtedness existing on the Tranche A Closing Date (set forth on Schedule 13.1 of the Disclosure Letter); provided, however, that at all times prior to the Tranche A Closing Date, this covenant shall not apply to Company IP to the extent the application of this covenant would violate the terms of the Existing Oxford Loan Agreement;

(vii) customary provisions in shareholders agreements, joint venture agreements, organizational documents or similar binding Contracts relating to any joint venture entity or non-Wholly-Owned Subsidiary and applicable solely to such joint venture entity or non-Wholly-Owned Subsidiary and the Equity Interests issued thereby;

(viii) customary net worth provisions contained in real property leases entered into by Subsidiaries of Borrower, so long as such net worth provisions could not reasonably be expected to impair the ability of Borrower or its Subsidiaries to meet their ongoing obligations (as reasonably determined by a Responsible Officer of Borrower in good faith);

(ix) customary net worth provisions set forth in customer Contracts entered into in the ordinary course of business that are not prohibited under this Agreement or any other Loan Document, so long as such net worth provisions could not reasonably be expected to impair the ability of Borrower or its Subsidiaries to meet their ongoing obligations (as reasonably determined by a Responsible Officer of Borrower in good faith);

(x) restrictions on cash or other deposits (including escrowed funds) imposed by Contracts entered into in the ordinary course of business that are not otherwise not prohibited under this Agreement or any other Loan Document;

(xi) restrictions or encumbrances set forth in any Contract in effect at the time any Person becomes a Subsidiary (but not any amendment, modification, restatement, renewal, extension, supplement or replacement expanding the scope of any such restriction or condition); provided that such Contract was not entered into in contemplation of such Person becoming a Subsidiary and each such prohibition or limitation does not apply to Borrower or any other Subsidiary (other than such Person and any other Person that is a Subsidiary of such first Person at the time such first Person becomes a Subsidiary);

(xii) restrictions or encumbrances imposed by any Loan Document;

(xiii) customary provisions set forth in joint venture agreements or Contracts governing minority investments that are not prohibited by this Agreement or any other Loan Document, if and only to the extent each such restriction or encumbrance applies only to the joint venture entity or minority investment that is the subject of such agreement or Contract; and

(xiv) restrictions or encumbrances imposed by any amendments, modifications, restatements, renewals, extensions, supplements or replacements of any of the Contracts referred to in clauses (i) through (xiii) above, except to the extent that any such amendment, modification, restatement, renewal, extension, supplement or replacement expands the scope of any such restriction or encumbrance.

6.10. Transactions with Affiliates. Directly or indirectly enter into or permit to exist any material transaction with any Affiliate of any Credit Party or any owner of ten percent (10%) or more of the Equity Interests of any Credit Party or any of its Subsidiaries, except for:

(a) transactions that are in the ordinary course of such Credit Party's or Subsidiary's business consistent with past practice, upon fair and reasonable terms that are no less favorable to such Credit Party or Subsidiary than would be obtained in an arm's length transaction with a non-affiliated Person, in each case as reasonably determined by a Responsible Officer of Borrower in good faith;

(b) any transaction between or among any Credit Party and its Subsidiaries not prohibited by this Agreement or any other Loan Document;

(c) reasonable and customary compensation arrangements (including fees, benefits, severance, change of control payments and incentive arrangements) for members of the Board of Directors of Borrower and its Subsidiaries (or similar governing body) in the ordinary course of business;

(d) reasonable compensation arrangements (including fees, benefits, severance, change of control payments and incentive arrangements) for officers, employees, consultants and agents of Borrower and its Subsidiaries entered into in the ordinary course of business;

(e) Investments permitted under clauses (a), (e), (f), (g), (k), (l), (m), (o), (p) and (q) of the definition of Permitted Investments;

(f) Investments in Borrower comprised of the proceeds of equity financings and the granting of registration and other customary rights in connection therewith, any contribution to the Equity Interests of Borrower or any of its Subsidiaries and unsecured debt financings from Borrower's shareholders, in each case, if and only to the extent any and all such Indebtedness is Subordinated Debt and does not violate Section 6.5;

(g) transactions pursuant to a Contract in existence at the time any Credit Party or Subsidiary of a Credit Party that is a party to such transaction is acquired pursuant to a Permitted Acquisition or similar Investment permitted by Section 6.8;

(h) any transaction in connection with Contracts existing on the Tranche A Closing Date and set forth on Schedule 4.14 of the Disclosure Letter; and

(i) any distribution permitted by Section 6.8.

6.11. Subordinated Debt (a) Make or permit any payment on any Subordinated Debt, except (i) under the terms of the subordination, intercreditor or other similar Contract to which such Subordinated Debt is subject and (ii) refinancings of any Subordinated Debt with any Indebtedness permitted to be incurred under Section 6.4, or (b) amend any provision in any Contract or document relating to any Subordinated Debt that would increase the

principal amount thereof, provide for the payment of interest applicable thereto at any time prior to the date on which all of the Obligations have been paid in full, shorten the final maturity thereof or require any payment thereunder to be made sooner than originally scheduled, increase the interest rate applicable thereto or add or change any other terms thereof, in each case except under the terms of the subordination, intercreditor, or other similar Contract to which such Subordinated Debt is subject, or adversely affect the subordination thereof to Obligations owed to Lender.

6.12. Amendments or Waivers of Organizational Documents. Amend, restate, supplement or otherwise modify, or waive, any provision of its Operating Documents in a manner that would adversely affect its ability to perform any of its agreements or obligations under any of the Loan Documents or would adversely affect any of the rights or remedies available to, or conferred upon, Lender under any Loan Document.

6.13. Fiscal Year. Borrower will cause (a) each of its and its Subsidiaries' fiscal years to end on December 31 of each calendar year and (b) each of its and its Subsidiaries' fiscal quarters to end on March 31, June 30, September 30 and December 31. Except to the extent necessary to comply with the foregoing, no Credit Party shall, nor shall it permit any of its Subsidiaries to, change its fiscal year without prior written notice to Lender.

6.14. Compliance. Become an "investment company" under the Investment Company Act of 1940, as amended, or a company controlled by an "investment company" or undertake as one of its important activities extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of the Credit Extensions for that purpose; no ERISA Affiliate shall cause or suffer to exist (a) any event that could result in the imposition of a Lien on any asset of a Credit Party or a Subsidiary of a Credit Party with respect to any Plan or Multiemployer Plan or (b) any other ERISA Event, in the case of clauses (a) and (b), that would, in the aggregate, result in liabilities which reasonably could be expected to result in a Material Adverse Change; fail to comply with the Federal Fair Labor Standards Act or violate any other Requirements of Law, if such failure or violation, individually or together with any other such failures or violations, could reasonably be expected to have a Material Adverse Change; or permit the occurrence of any other event with respect to any present pension, profit sharing or deferred compensation plan which, individually or together with any other such events, could reasonably be expected to result in a Material Adverse Change.

6.15. Compliance with Anti-Terrorism Laws. Lender hereby notifies each Credit Party that pursuant to the requirements of Anti-Terrorism Laws, and Lender's policies and practices, Lender is required to obtain, verify and record certain information and documentation that identifies each Credit Party and its principals, which information includes the name and address of each Credit Party and its principals and such other information that will allow Lender to identify such party in accordance with Anti-Terrorism Laws. No Credit Party will, nor will any Credit Party permit any of its Subsidiaries or Affiliates to, directly or indirectly, knowingly enter into any documents or Contracts with any Person listed on the OFAC Lists. Each Credit Party shall immediately notify Lender in writing if such Credit Party or any of its Subsidiaries has knowledge that any Credit Party or any Subsidiary or Affiliate of any Credit Party is listed on the OFAC Lists or (a) is convicted on, (b) pleads *nolo contendere* to, (c) is indicted on, or (d) is arraigned and held over on charges involving money laundering or predicate crimes to money laundering. No Credit Party will, nor will any Credit Party permit any of its Subsidiaries or Affiliates to, directly or indirectly, (i) conduct any business or engage in any transaction or dealing with any Blocked Person, including the making or receiving of any contribution of funds, goods or services to or for the benefit of any Blocked Person, (ii) deal in, or otherwise engage in any transaction relating to, any property or interests in property blocked pursuant to Executive Order No. 13224, any similar executive order or other Anti-Terrorism Law, or (iii) engage in or conspire to engage in any transaction that evades or avoids, or has the purpose of evading or avoiding, or attempts to violate, any of the prohibitions set forth in Executive Order No. 13224 or other Anti-Terrorism Law.

6.16. Current Company IP Agreements and Material Contracts. Except as described on Schedule 4.11 of the Disclosure Letter with respect to the Existing Oxford Loan Agreement, (a) waive, amend, cancel or terminate, or exercise or fail to exercise, or fail to enforce, any material rights under or relating to any of the Current Company IP Agreements or any Material Contract, (b) default under, or take any action or fail to take any action that with the passage of time or the giving of notice or both would constitute a material breach of, or a default or event of default under, any of the Current Company IP Agreements or any Material Contract, (c) fail to diligently monitor the performance of any counterparty to any Current Company IP Agreement or Material Contract and enforce all rights under such Contracts, in each case, which, individually or together with any other such waivers,

amendments, cancellations, terminations, agreements, exercises, failures, defaults or actions, could reasonably be expected to result in a Material Adverse Change or (d) enter into any Contract pursuant to which any Consulting Royalties may become due and payable with respect to the Products that have been Commercialized on or prior to the Tranche A Closing Date.

6.17. Minimum Net Sales; Minimum Consolidated EBITDA.

(a) Permit trailing twelve-month Net Sales of Borrower and its Subsidiaries on a consolidated basis, tested at the end of each fiscal quarter commencing with the fiscal quarter ending December 31, 2017 through the fiscal quarter ending December 31, 2018 to fall below:

Twelve Months Ending	Minimum Net Sales
December 31, 2017	$ 46,000,000
March 31, 2018	$ 46,500,000
June 30, 2018	$ 47,500,000
September 30, 2018	$ 48,500,000
December 31, 2018	$ 50,000,000

(b) Permit both of (i) trailing twelve-month Net Sales of Borrower and its Subsidiaries on a consolidated basis and (ii) realized trailing twelve-month Consolidated EBITDA, in each case, tested at the end of each fiscal quarter commencing with the fiscal quarter ending March 30, 2019, to fall below:

Twelve Months Ending	Minimum Net Sales		Trailing 12-Month Consolidated EBITDA
March 31, 2019	$ 52,000,000	or	($ 5,000,000)
June 30, 2019	$ 53,500,000	or	($ 3,500,000)
September 30, 2019	$ 54,500,000	or	($ 2,000,000)
December 31, 2019	$ 56,000,000	or	$ 0.00
March 31, 2020	$ 57,500,000	or	$ 1,000,000
June 30, 2020	$ 58,500,000	or	$ 2,000,000
thereafter, as applicable	$ 60,000,000	or	$ 3,000,000

For the avoidance of doubt, for any twelve-month period, if Borrower complies with either the applicable trailing twelve-month Net Sales amount or the applicable trailing twelve-month Consolidated EBITDA amount set forth above, Borrower shall be deemed to have complied with this Section 6.17(b).

(c) Notwithstanding anything to the contrary contained in Section 7 and subject to the ultimate sentence of this Section 6.17(c), in the event that Borrower fails to comply with the covenants contained in Section 6.17(a) or (b) in respect of any applicable fiscal quarter (such covenants for such applicable periods being the "**Specified Financial Covenants**") following the test for compliance therewith on the relevant date of determination, Borrower shall notify Lender in writing of such Event of Default pursuant to Section 5.2(g) and shall have the right within sixty (60) days after the end of such applicable fiscal quarter to issue additional shares of

Equity Interests in exchange for cash (the "**Cure Right**"), in an amount equal to the product of (i) three (3) multiplied by (ii) an amount equal to the minimum trailing twelve-month Net Sales of Borrower and its Subsidiaries on a consolidated basis required by the applicable Specified Financial Covenant less the actual trailing twelve-month Net Sales of Borrower and its Subsidiaries on a consolidated basis (the "**Cure Amount**"). The cash proceeds from the exercise of the Cure Right shall immediately be contributed as equity to Borrower, and promptly upon the receipt thereof by Borrower, Borrower shall prepay, in whole or in part, the Term Loans advanced by Lender under this Agreement; provided that (A) Borrower provides written notice to Lender of its intention to exercise the Cure Right (the "**Cure Notice**") (which may be combined with the aforementioned notice of Default and which such exercise Lender acknowledges will be conditional upon Borrower's successful issuance of Equity Interests for cash) to prepay the Term Loans promptly upon receipt of the cash proceeds from the exercise of the Cure Right in an amount equal to the Cure Amount and (B) such prepayment shall be (1) in the event of a prepayment in part and not in whole, inclusive of any amounts payable pursuant to Section 2.2(e) or Section 2.2(f) (as applicable) and any other amounts payable or accrued and not yet paid under Section 2.4 and (2) in the event of a prepayment in whole and not in part accompanied by any amounts payable pursuant to Section 2.2(e) or Section 2.2(f) (as applicable) and any other amounts payable or accrued and not yet paid under this Agreement and the other Loan Documents. Upon delivery by Borrower to Lender of the Cure Notice and until the sixtieth (60th) day after the end of such applicable fiscal quarter, so long as no other Event of Default has occurred and is continuing during such period, Lender shall not exercise the right to accelerate the time on which the Obligations are due and payable or stop advancing money or extending credit for Borrower's benefit or exercise any right to foreclose on or take possession of the Collateral under Section 8.1, in each case, solely with respect to such Event of Default having occurred under the Specified Financial Covenants; provided, however, that, if Borrower fails to remit the Cure Amount to Lender on or prior to the sixtieth (60th) day after the end of such applicable fiscal quarter, such Event of Default under the Specified Financial Covenants shall be deemed to have occurred as of such relevant date of determination with the same effect as though there had been no cure right with respect thereto, and Lender shall have the right to exercise any and all of its rights and remedies under Section 8.1 or otherwise in respect thereof in its sole and absolute discretion. Upon receipt by Lender of the Cure Amount within such 60-day period, Borrower shall be deemed to have satisfied the requirements of the applicable Specified Financial Covenant for the applicable fiscal quarter as of the relevant date of determination with the same effect as though there had been no failure to comply therewith at such date, and the applicable Event of Default under the Specified Financial Covenants that had occurred shall be deemed cured without any further action of Borrower or Lender for all purposes under the Loan Documents. Notwithstanding the foregoing, Borrower shall have no further right to exercise the Cure Right after it has exercised the Cure Right in respect of any two (2) fiscal quarters.

7. EVENTS OF DEFAULT

Any one of the following shall constitute an event of default (an "**Event of Default**") under this Agreement:

7.1. Payment Default. Any Credit Party fails to (a) make any payment of any principal of any Term Loan when and as the same shall become due and payable, whether at the due date thereof (including pursuant to Section 2.2(c)) or at a date fixed for prepayment thereof (whether voluntary or mandatory) or by acceleration thereof or otherwise, (b) make any payment of interest or premium pursuant to Section 2.2, including any applicable Makewhole Amount or Prepayment Premium when and as the same shall become due and payable or (c) pay any other Obligations within three (3) Business Days after such Obligations are due and payable (which such three (3) Business Day cure period shall not apply to payments due on the Term Loan Maturity Date or the date of acceleration pursuant to Section 8.1(a) hereof). A failure to pay any other Obligations pursuant to the foregoing clause (c) prior to the end of such three (3) Business Day period shall not constitute an Event of Default.

7.2. Covenant Default.

(a) The Credit Parties: (i) fail or neglect to perform any obligation in Sections 5.4, 5.6, 5.10 or 5.15; (ii) fail or neglect to perform any obligation in Section 5.12, and as to any default under Section 5.12, have failed to cure such default within thirty (30) days of the first Business Day on which Borrower and its Subsidiaries fail to have consolidated Liquidity of at least Five Million Dollars ($5,000,000.00); or (iii) violate any covenant in Section 6; or

(b) The Credit Parties fail or neglect to perform, keep, or observe any other term, provision, condition, covenant or agreement contained in this Agreement or any other Loan Document and, as to any default (other than those specified elsewhere in this Section 7) under such other term, provision, condition, covenant or agreement that can be cured, have failed to cure the default within thirty (30) days after the occurrence thereof (but no Credit Extensions shall be made during such thirty (30) day cure period). Cure periods provided under this Section 7.2(b) shall not apply to any of the covenants referenced in clause (a) above.

7.3. Material Adverse Change A Material Adverse Change occurs.

7.4. Attachment; Levy; Restraint on Business.

(a) (i) The service of process seeking to attach, by trustee or similar process, any funds of any Credit Party or of any entity under the control of any Credit Party in excess of $25,000 on deposit or otherwise maintained with Lender or any of Lender's Affiliates or (ii) a notice of lien or levy is filed against any assets of any Credit Party or any entity under the control of any Credit Party by any Governmental Authority, and the same under clauses (i) and (ii) hereof are not, within twenty (20) days after the occurrence thereof, discharged or stayed (whether through the posting of a bond or otherwise); provided, however, that no Credit Extensions shall be made during any such twenty (20) day period; or

(b) (i) Any material portion of any Credit Party's assets is attached, seized, levied on, or comes into possession of a trustee or receiver, or (ii) any court order enjoins, restrains, or prevents any Credit Party from conducting any material part of its business.

7.5. Insolvency.

(a) An involuntary proceeding shall be commenced or an involuntary petition shall be filed in a court of competent jurisdiction seeking: (i) relief in respect of any Credit Party or any of its Subsidiaries, or of a substantial part of the properties or assets of any Credit Party or any of its Subsidiaries, under Title 11 of the United States Code, as now constituted or hereafter amended, or any other federal, state or foreign bankruptcy, insolvency, receivership or similar law; (ii) the appointment of an examiner, receiver, trustee, custodian, sequestrator, conservator or similar official for any Credit Party or any of its Subsidiaries or for a substantial part of the properties or assets of any Credit Party or any of its Subsidiaries; or (iii) the winding-up or liquidation of any Credit Party or any of its Subsidiaries, and such proceeding or petition shall continue undismissed for sixty (60) days or an order or decree approving or ordering any of the foregoing shall be entered;

(b) Any Credit Party or any of its Subsidiaries shall: (i) voluntarily commence any proceeding or file any petition seeking relief under Title 11 of the United States Code, as now constituted or hereafter amended, or any other federal, state or foreign bankruptcy, insolvency, receivership or similar law; (ii) consent to the institution of, or fail to contest in a timely and appropriate manner, any proceeding or the filing of any petition described in clause (a) above; (iii) apply for or consent to the appointment of a receiver, trustee, custodian, sequestrator, conservator or similar official for any Credit Party or any of its Subsidiaries or for a substantial part of the properties or assets of any Credit Party or any of its Subsidiaries; (iv) file an answer admitting the material allegations of a petition filed against it in any such proceeding; (v) make a general assignment for the benefit of creditors; (vi) become unable, admit in writing its inability or fail generally to pay its debts as they become due; (vii) take any action for the purpose of effecting any of the foregoing; or (viii) wind up or liquidate (except as otherwise expressly permitted hereunder); or

(c) Borrower otherwise fails to be Solvent, Borrower and its Subsidiaries that are Credit Parties, on a consolidated basis, otherwise fail to be Solvent, or Borrower and its Subsidiaries, on a consolidated basis, otherwise fail to be Solvent.

7.6. Other Agreements. There is, under any Contract to which a Credit Party or any of its Subsidiaries is a party with a third party or parties, (a) any breach thereof or default thereunder resulting in a right by such third party or parties, whether or not exercised, to accelerate the maturity of any Indebtedness in an amount in excess of $ 500,000 individually, or in excess of $1,000,000 when aggregated with all other breaches and defaults by any of the Credit Parties or their respective Subsidiaries under Contracts with a third party or parties or (b) any default or breach by any Credit Party or any of its Subsidiaries, the effect of which, individually or together with any other such defaults or breaches, results in a Material Adverse Change.

7.7. Judgments. One or more judgments, orders, or decrees for the payment of money in an amount in excess of $1,000,000 individually, or in excess of $3,000,000 when aggregated with all other judgments, orders, or decrees for the payment of money (but excluding any judgments, orders, or decrees for the payment of money that are covered by independent third-party insurance as to which liability has been accepted by such insurance carrier), shall be rendered against any Credit Party or any of its Subsidiaries and shall remain unsatisfied, unvacated or unstayed for a period of twenty (20) days after the entry thereof; provided, however, that no Credit Extensions shall be made prior to the satisfaction, vacation or stay of such judgment, order or decree.

7.8. Misrepresentations. Any Credit Party or any Person acting for any Credit Party makes or is deemed to make any representation, warranty, or other statement now or later in this Agreement, any other Loan Document or in any writing delivered to Lender or to induce Lender to enter this Agreement or any other Loan Document, and such representation, warranty, or other statement is incorrect in any material respect (or, to the extent any such representation, warranty or other statement is qualified by materiality or Material Adverse Change, in any respect) when made or deemed to be made.

7.9. Loan Documents; Collateral.

(a) Any material provision of any Loan Document shall for any reason (other than solely due to action or inaction of Lender) cease to be valid and binding on or enforceable against any Credit Party (or any Subsidiary of a Credit Party party thereto) or any Credit Party (or any such Subsidiary) shall so state in writing or bring an action to limit its obligations or liabilities thereunder.

(b) One or more Collateral Documents governing Collateral with an aggregate value, individually with respect to any one such Collateral Document or together with any other Collateral governed by any other such Collateral Documents, in excess of $500,000 (which shall be reasonably determined by a Responsible Officer of Borrower in good faith and based upon reasonable assumptions) shall for any reason (other than pursuant to the terms thereof) cease to create a valid security interest in the Collateral purported to be covered thereby or such security interest shall for any reason cease to be a perfected and first priority security interest in the Collateral subject thereto subject only to Permitted Liens, except (i) to the extent that any such loss of perfection or priority results from the limitations of foreign laws, rules and regulations as they apply to pledges of Equity Interests in Foreign Subsidiaries or the application thereof, (ii) for the failure of Lender to maintain possession of certificates actually delivered to it representing securities pledged under the Security Agreement or to file Code financing statements (including continuation statements) or to take such other actions as Lender is required to take in order to perfect and maintain a perfected first priority security interest in the Collateral subject to Permitted Liens and (iii) to the extent that such loss is covered by a lender's title insurance policy as to which liability has been accepted by the title insurer.

7.10. Subordinated Debt. Any Contract providing for the subordination of any Subordinated Debt shall for any reason be revoked or invalidated or otherwise cease to be in full force and effect, any Credit Party or any creditor party thereto shall be in breach thereof, in default thereunder or contest in any manner the validity or enforceability thereof or deny that it has any further liability or obligation thereunder, or the Obligations shall for any reason be subordinated or shall not have the priority contemplated by this Agreement and the other Loan Documents.

7.11. Change in Control. A Change in Control occurs.

7.12. ERISA Event. An ERISA Event occurs that, individually or together with any other ERISA Events, results or could reasonably be expected to result in a Material Adverse Change or a material liability of Borrower or any of its Subsidiaries or any of their respective ERISA Affiliates or the imposition of a Lien on a material portion of the properties and assets of Borrower and its Subsidiaries, taken as a whole.

8. RIGHTS AND REMEDIES UPON AN EVENT OF DEFAULT

8.1. Rights and Remedies. Subject to Section 6.17(c) solely with respect to a violation of the Specified Financial Covenants, while an Event of Default occurs and continues, Lender may, without notice or demand:

(a) declare all Obligations (including, for the avoidance of doubt, any applicable Makewhole Amount or Prepayment Premium) immediately due and payable (but if an Event of Default described in Section 7.5 occurs all Obligations, including any applicable Makewhole Amount or Prepayment Premium, are automatically and immediately due and payable without any action by Lender), whereupon all Obligations for principal, interest, premium or otherwise (including, for the avoidance of doubt, any applicable Makewhole Amount or Prepayment Premium) shall become due and payable by Borrower without presentment, demand, protest or other notice of any kind, which are all expressly waived by the Credit Parties hereby;

(b) stop advancing money or extending credit for Borrower's benefit under this Agreement;

(c) settle or adjust disputes and claims directly with Account Debtors for amounts on terms and in any order that Lender considers advisable, notify any Person owing Borrower money of Lender's security interest in such funds, and verify the amount of such account;

(d) make any payments and do any acts it considers necessary or reasonable to protect the Collateral or its security interest in the Collateral. Borrower shall assemble the Collateral if Lender requests and make it available as Lender designates. Lender may enter premises where the Collateral is located, take and maintain possession of any part of the Collateral, and pay, purchase, contest, or compromise any Lien which appears to be prior or superior to its security interest and pay all expenses incurred. Borrower grants Lender a license to enter and occupy any of its premises, without charge, to exercise any of Lender's rights or remedies;

(e) apply to the Obligations (i) any balances and deposits of Borrower it holds, or (ii) any amount held by Lender owing to or for the credit or the account of Borrower;

(f) ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell the Collateral. With respect to any and all Intellectual Property owned by any Credit Party and, to the extent such Credit Party is permitted to do so, with respect to any and all Intellectual Property licensed by a third party to any Credit Party, each Credit Party hereby grants to Lender, as of the Tranche A Closing Date, a non-exclusive, royalty-free license or other right to use, without charge, such Credit Party's labels, Patents, Copyrights, mask works, rights of use of any name, trade secrets, trade names, Trademarks (other than any "intent-to-use" Trademarks until the earlier of the filing of a statement of use with respect thereto or the issuance of a registration therefor) and advertising matter, or any similar properties or assets as it pertains to the Collateral, in completing production of, advertising for sale, and selling any Collateral and, in connection with Lender's exercise of its rights under this Section 8.1, such Credit Party's rights under all licenses and all franchise Contracts inure to Lender's benefit;

(g) place a "hold" on any account maintained with Lender or deliver a notice of exclusive control, any entitlement order, or other directions or instructions pursuant to any Control Agreement or similar Contracts providing control of any Collateral;

(h) demand and receive possession of Borrower's Books; and

(i) exercise all rights and remedies available to Lender under the Collateral Documents or any other Loan Documents or at law or equity, including all remedies provided under the Code (including disposal of the Collateral pursuant to the terms thereof).

Lender agrees that, in connection with any foreclosure or other exercise of rights under this Agreement or any other Loan Document with respect to the Intellectual Property, the rights of the licensees under the Permitted Licenses will not be terminated, limited or otherwise adversely affected so long as no default exists under the Permitted License in a way that would permit the licensor to terminate such Permitted License (commonly termed a non-disturbance).

8.2. Power of Attorney. Borrower hereby irrevocably appoints Lender as its lawful attorney-in-fact, exercisable only upon the occurrence and during the continuance of an Event of Default, to: (a) endorse Borrower's name on any checks or other forms of payment or security; (b) sign Borrower's name on any invoice or bill of lading for any Account or drafts against Account Debtors; (c) settle and adjust disputes and claims about the Accounts directly with Account Debtors, for amounts and on terms Lender determines reasonable; (d) make, settle, and adjust all claims under Borrower's insurance policies; (e) pay, contest or settle any Lien, charge, encumbrance, security interest, and adverse claim in or to the Collateral, or any judgment based thereon, or otherwise take any action to terminate or discharge the same; and (f) transfer the Collateral into the name of Lender or a third party as the Code permits. Borrower hereby appoints Lender as its lawful attorney-in-fact to file or record any documents necessary to perfect or continue the perfection of Lender's security interest in the Collateral regardless of whether an Event of Default has occurred until all Obligations (other than inchoate indemnity obligations) have been satisfied in full and Lender is not under any further obligation to make any Credit Extensions hereunder. Lender's foregoing appointment as Borrower's attorney in fact, and all of Lender's rights and powers, coupled with an interest, are irrevocable until all Obligations (other than inchoate indemnity obligations) have been fully repaid and performed and Lender's obligation to provide any Credit Extensions hereunder terminates.

8.3. [**Reserved**.]

8.4. Application of Payments and Proceeds upon Default. If an Event of Default has occurred and is continuing, Lender may apply any funds in its possession, whether from Borrower account balances, payments, proceeds realized as the result of any collection of Accounts or other disposition of the Collateral, or otherwise, to the Obligations in such order as Lender shall determine in its sole discretion. After any such application, any surplus shall be paid to Borrower or other Persons legally entitled thereto; Borrower shall remain liable to Lender for any deficiency. If Lender directly or indirectly enters into a deferred payment or other credit transaction with any purchaser at any sale of Collateral, Lender shall have the option, exercisable at any time, of either reducing the Obligations by the principal amount of the purchase price or deferring the reduction of the Obligations until the actual receipt by Lender of cash therefor.

8.5. Lender's Liability for Collateral. So long as Lender complies with Requirements of Law regarding the safekeeping of the Collateral in the possession or under the control of Lender, Lender shall not be liable or responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage to the Collateral; or (c) any act or default of any carrier, landlord, warehouseman, bailee, or other Person. In no event shall Lender have any liability for any diminution in the value of the Collateral for any reason. Borrower bears all risk of loss, damage or destruction of the Collateral.

8.6. No Waiver; Remedies Cumulative. Lender's failure, at any time or times, to require strict performance by Borrower of any provision of this Agreement or any other Loan Document shall not waive, affect, or diminish any right of Lender thereafter to demand strict performance and compliance herewith or therewith. No waiver hereunder shall be effective unless signed by the party granting the waiver and then is only effective for the specific instance and purpose for which it is given. Lender's rights and remedies under this Agreement and the other Loan Documents are cumulative. Lender has all rights and remedies provided under the Code, by law, or in equity. Lender's exercise of one right or remedy is not an election and shall not preclude Lender from exercising any other remedy under this Agreement or other remedy available at law or in equity, and Lender's waiver of any Event of Default is not a continuing waiver. Lender's delay in exercising any remedy is not a waiver, election, or acquiescence.

8.7. Demand Waiver; Makewhole Amount; Prepayment Premium. Borrower waives demand, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees held by Lender on which Borrower is liable. Borrower acknowledges and agrees that if the maturity of all Obligations shall be accelerated pursuant to Section 8.1(a) by reason of the occurrence of an Event of Default, any applicable Makewhole Amount or Prepayment Premium, shall become due and payable by Borrower upon such acceleration, whether such acceleration is automatic or is effected by Lender's declaration thereof, as provided in Section 8.1(a), and Borrower shall pay any applicable Makewhole Amount or Prepayment Premium as compensation to Lender for the loss of its investment opportunity and not as a penalty, and Borrower waives any right to object thereto in any voluntary or involuntary bankruptcy, insolvency or similar proceeding or otherwise.

9. NOTICES

All statements, certificates, notices, reports, consents, requests, approvals, demands, or other communication by any party to this Agreement or any other Loan Document must be in writing and shall be deemed to have been validly served, given, or delivered: (a) upon the earlier of actual receipt and three (3) Business Days after deposit in the U.S. mail, first class, registered or certified mail return receipt requested, with proper postage prepaid; (b) upon transmission, when sent by electronic mail or facsimile transmission; (c) one (1) Business Day after deposit with a reputable overnight courier with all charges prepaid; or (d) when delivered, if hand-delivered by messenger, all of which shall be addressed to the party to be notified and sent to the address, facsimile number, or email address (if any) indicated below. Lender or any Credit Party may change its mailing or electronic mail address or facsimile number by giving all other parties hereto written notice thereof in accordance with the terms of this Section 9.

If to Borrower or other Credit Party:

SI-BONE, Inc.
3055 Olin Avenue, Suite 2200
San Jose, CA 95128
Attn: Jeffrey Dunn, President and Chief Executive Officer
Laura Francis, Chief Financial Officer
Telephone: +1 (408) 207-0700
Facsimile: 408.557.8312
Email: JDunn@si-bone.com; lfrancis@si-bone.com

with a copy to (which shall not constitute notice) to:

Cooley LLP
101 California Street, 5th Floor
San Francisco, CA 94111-5800
Attn: Gian-Michele a Marca
Telephone: +1 (415) 693-2148
Facsimile: +1 (415) 693-2222
Email: gmamarca@cooley.com

If to Lender:

BioPharma Credit Investments IV Sub LP
c/o Walkers Corporate Limited
Cayman Corporate Centre
27 Hospital Road
George Town, Grand Cayman KY1-9008
Cayman Islands
Attention: Pedro Gonzalez de Cosio
Telephone: +1 (212) 883-2296
Facsimile: +1 (917) 210-4048
Email: pg@PharmakonAdvisors.com

with copies (which shall not constitute notice) to:

Pharmakon Advisors LP
110 East 59th Street, #3300
New York, NY 10022
Attn: Pedro Gonzalez de Cosio
Phone: +1 (212) 883-2296
Fax: +1 (917) 210-4048
Email: pg@PharmakonAdvisors.com

and

Akin Gump Strauss Hauer & Feld LLP
One Bryant Park
New York, NY 10036-6745
Attn: Geoffrey E. Secol
Phone: (212) 872-8081
Fax: (212) 872-1002
Email: gsecol@akingump.com

10. CHOICE OF LAW, VENUE AND JURY TRIAL WAIVER

THIS AGREEMENT AND THE OTHER LOAN DOCUMENTS SHALL EACH BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO ANY PRINCIPLES OF CONFLICTS OF LAW THAT COULD REQUIRE THE APPLICATION OF THE LAW OF ANY OTHER JURISDICTION. Each of the Credit Parties and Lender submit to the exclusive jurisdiction of the courts of the State of New York sitting in New York County, and of the United States District Court of the Southern District of New York, and any appellate court from any thereof, and agrees that all claims in respect of any such action, litigation or proceeding may be heard and determined in such New York State court or, to the fullest extent permitted by Requirements of Law, in such Federal court; provided, however, that nothing in this Agreement shall be deemed to operate to preclude Lender from bringing suit or taking other legal action in any other jurisdiction to realize on the Collateral or any other security for the Obligations, or to enforce a judgment or other court order in favor of Lender. Each Credit Party expressly submits and consents in advance to such jurisdiction in any action or suit commenced in any such court, and each Credit Party hereby waives any objection that it may have based upon lack of personal jurisdiction, improper venue, or *forum non conveniens* and hereby consents to the granting of such legal or equitable relief as is deemed appropriate by such court. Each Credit Party hereby waives personal service of the summons, complaints, and other process issued in such action or suit and agrees that service of such summons, complaints, and other process may be made by registered or certified mail addressed to such Credit Party at the address set forth in (or otherwise provided in accordance with the terms of) Section 9 of this Agreement and that service so made shall be deemed completed upon the earlier to occur of such Credit Party's actual receipt thereof or three (3) Business Days after deposit in the U.S. mails, proper postage prepaid.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, EACH OF THE CREDIT PARTIES AND LENDER WAIVE ITS RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, THE OTHER LOAN DOCUMENTS OR ANY TRANSACTION CONTEMPLATED HEREBY OR THEREBY, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. EACH OF THE CREDIT PARTIES AND LENDER (A) CERTIFIES THAT NO OTHER PARTY HERETO (AND NO AFFILIATE OF ANY OTHER PARTY AND NO DIRECTOR, OFFICER, EMPLOYEE, AGENT, TRUSTEE, REPRESENTATIVE, ATTORNEY, ACCOUNTANT, ADVISOR OR CONSULTANT OF ANY OTHER PARTY OR AFFILIATE) HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER, (B) ACKNOWLEDGES THAT THE FOREGOING MUTUAL WAIVERS AND CERTIFICATIONS ARE A MATERIAL INDUCEMENT FOR IT AND THE OTHER PARTIES HERETO TO ENTER INTO THIS AGREEMENT AND (C) HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.

11. GENERAL PROVISIONS

11.1. Successors and Assigns. This Agreement binds and is for the benefit of the parties hereto and their respective successors and permitted assigns. No Credit Party may sell, transfer, assign or pledge this Agreement or any other Loan Document or any of its rights or obligations hereunder or thereunder without Lender's prior written consent. Lender may sell, transfer, assign or pledge this Agreement or any other Loan Document or any of its rights or obligations hereunder or thereunder to any third party (other than any Vulture Fund or Competitor) without Borrower's consent, including to grant or sell a participation in all or any part of, or any interest in, Lender's obligations, rights or benefits under this Agreement and the other Loan Documents (any such sale, transfer, assignment, pledge or grant or sale of a participation, a "**Lender Transfer**"). Lender shall record such

Lender Transfer in the "book entry system" maintained pursuant to Section 2.8. Any attempted sale, transfer, assignment or pledge of this Agreement or any other Loan Document or any rights or obligations hereunder or thereunder in violation of this Section 11.1 shall be null and void *ab initio* and of no effect.

11.2. Indemnification; Costs and Expenses.

(a) Borrower agrees to indemnify and hold harmless each of Lender and its Affiliates (and its or their successors and assigns) and each of its and their respective managers, members, equityholders, partners, controlling Persons, directors, officers, employees, agents or sub-agents, advisors and affiliates (each such Person, an "**Indemnified Person**") from and against any and all Indemnified Liabilities; provided that (i) Borrower shall not have any obligation to any Indemnified Person hereunder with respect to any Indemnified Liabilities to the extent such Indemnified Liabilities arise from the bad faith, gross negligence or willful misconduct of such Indemnified Person (or its Affiliates or controlling Persons or its or their respective directors, officers, managers, partners, members, equityholders, agents, sub-agents or advisors), in each case, as determined by a final, non-appealable judgment of a court of competent jurisdiction, (ii) Borrower shall not have any obligation to any Indemnified Person hereunder with respect to any Indemnified Liabilities to the extent such Indemnified Liabilities arise from a material breach of any obligation of Lender hereunder, and (iii) Borrower shall not have any obligation to any Indemnified Person hereunder with respect to any Indemnified Liabilities to the extent such Indemnified Liabilities arise from any claim by one Indemnified Person against another Indemnified Person that does not relate to any act or omission of any Credit Party or any of its Subsidiaries, and (iv) Borrower shall not be liable for any settlement of any claim or proceeding effected by any Indemnified Person without the prior written consent of such Credit Party (which consent shall not be unreasonably conditioned, withheld or delayed), but if settled with such consent or if there shall be a final judgment against an Indemnified Person, Borrower shall indemnify and hold harmless such Indemnified Person from and against any loss or liability by reason of such settlement or judgment in the manner set forth in this Agreement.

(b) To the extent permitted by Requirements of Law, no Credit Party shall assert, and each Credit Party hereby waives, any claim against Lender and its Affiliates (and its or their successors and assigns), and each manager, member, equityholder, partner, controlling Person, director, officer, employee, agent or sub-agent, advisor and affiliate thereof, on any theory of liability, for special, indirect, consequential or punitive damages (as opposed to direct or actual damages) (whether or not the claim therefor is based on contract, tort or duty imposed by any applicable legal requirement) arising out of, in connection with, arising out of, as a result of, or in any way related to, this Agreement or any Loan Document or any Contract contemplated hereby or thereby or referred to herein or therein, the transactions contemplated hereby or thereby, any Term Loan or the use of the proceeds thereof or any act or omission or event occurring in connection therewith, and each Credit Party hereby waives, releases and agrees not to sue upon any such claim or any such damages, whether or not accrued and whether or not known or suspected to exist in its favor.

(c) Any action taken by any Credit Party or any of its Subsidiaries under or with respect to any Loan Document, even if required under any Loan Document or at the request of Lender, shall be at the expense of such Credit Party or Subsidiary, and no Secured Party shall be required under any Loan Document to reimburse any Credit Party or any Subsidiary of any Credit Party therefor except as expressly provided therein. In addition, Borrower agrees to pay or reimburse upon demand (i) Lender (and its successors and assigns) for all reasonable out-of-pocket costs and expenses incurred by it or any of its Affiliates or any of its or their respective directors, officers, employees, agents and sub-agents, in connection with the investigation, development, preparation, negotiation, syndication, execution, interpretation or administration of, any modification of any term of or termination of, any Loan Document, any commitment or proposal letter therefor, any other document prepared in connection therewith or the consummation and administration of any transaction contemplated therein, (ii) Lender (and its successors and assigns) for all reasonable costs and expenses incurred by it or any of its Affiliates or any of its or their respective directors, officers, employees, agents and sub-agents in connection with internal audit reviews and Collateral audits and (iii) Lender (and its successors and assigns) and any of its Affiliates or any of its or their respective directors, officers, employees, agents and sub-agents for all costs and expenses incurred in connection with (A) any refinancing or restructuring of the credit arrangements provided hereunder in the nature of a "work-out," (B) the enforcement or preservation of any right or remedy under any Loan Document, any Obligation, with respect to the Collateral or any other related right or remedy or (C) the commencement, defense, conduct of, intervention in, or the taking of any other action with respect to, any proceeding (including any bankruptcy or insolvency proceeding) related to any Credit Party, any Subsidiary of any Credit Party, Loan Document or Obligation (or the response to and preparation for any subpoena or request for document production relating thereto), including Lender Expenses.

11.3. Severability of Provisions. In case any provision in or obligation hereunder or under any other Loan Document shall be invalid, illegal or unenforceable in any jurisdiction, the validity, legality and enforceability of the remaining provisions or obligations, or of such provision or obligation in any other jurisdiction, shall not in any way be affected or impaired thereby.

11.4. Correction of Loan Documents. Lender may correct patent errors and fill in any blanks in the Loan Documents consistent with the agreement of the parties hereto so long as Lender provides Credit Parties with written notice of such correction and allows Credit Parties at least ten (10) days to object to such correction. In the event of such objection, such correction shall not be made except by an amendment signed by Lender and Credit Parties.

11.5. Amendments; Waivers; Integration. (a) No amendment or modification of any provision of this Agreement or any other Loan Document, or waiver, discharge or termination of any obligation hereunder or thereunder, no approval or consent hereunder or thereunder (including any consent by Borrower to any departure herefrom or therefrom), shall in any event be effective unless the same shall be in writing and signed by Borrower and Lender. Any waiver, approval or consent granted shall be limited to the specific circumstance expressly described in it, and shall not apply to any subsequent or other circumstance, whether similar or dissimilar, or give rise to, or evidence, any obligation or commitment to grant any further waiver, approval or consent.

(b) This Agreement and the other Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or Contracts. All prior Contracts, understandings, representations, warranties, and negotiations between the parties hereto about the subject matter of this Agreement and the other Loan Documents merge into this Agreement and the other Loan Documents.

11.6. Counterparts. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Agreement.

11.7. Survival. All covenants, representations and warranties made in this Agreement continue in full force until this Agreement has terminated pursuant to its terms and all Obligations (other than inchoate indemnity obligations and any other obligations which, by their terms, are to survive the termination of this Agreement) have been paid in full and satisfied. The obligation of Borrower in Section 11.2 to indemnify Lender (including the obligations in Section 11.2(c)) shall survive until the statute of limitations with respect to such claim or cause of action shall have run.

11.8. Confidentiality. Any information regarding Credit Parties and their Subsidiaries and their businesses provided to Lender by or on behalf of any Credit Party pursuant to this Agreement shall be deemed "**Confidential Information**"; provided, however, that Confidential Information does not include information that is either: (i) in the public domain or in Lender's or any of its Affiliate's possession when disclosed to Lender or any of its Affiliates, or becomes part of the public domain after disclosure to Lender or any of its Affiliates other than as a result of a breach by Lender or any of its Affiliates of the obligations under this Section 11.8; or (ii) disclosed to Lender or any of its Affiliates by a third party if Lender or any of its Affiliates do not know that the third party is prohibited from disclosing the information. Lender shall not disclose any Confidential Information to a third party or use Confidential Information for any purpose other than the exercise of Lender's rights and the performance of Lender's obligations under the Loan Documents. The foregoing in this Section 11.8 notwithstanding, Lender may disclose Confidential Information: (a) to any of Lender's Subsidiaries or Affiliates; (b) to prospective transferees or purchasers of any interest in the Credit Extensions; (c) as required by law, regulation, subpoena, or other order; provided that Lender shall promptly notify the applicable Credit Party in writing, if not prohibited by Requirements of Law, and provide such Credit Party reasonable time to oppose such process; (d) to the extent requested by regulators having jurisdiction over Lender or as required in connection with Lender's examination or audit pursuant to Section 5.9 hereof; (e) as Lender considers appropriate in its reasonable, good faith discretion in exercising remedies under the Loan Documents; and (f) to third-party service providers of Lender; provided, however, that the third parties to which Confidential Information is disclosed pursuant to clauses (a), (b), (e) and (f) are bound by obligations of confidentiality and non-use that are no less restrictive than those contained herein.

The provisions of the immediately preceding paragraph shall survive the termination of this Agreement.

11.9. Attorneys' Fees, Costs and Expenses. In any action or proceeding between any Credit Party and Lender arising out of or relating to the Loan Documents, the prevailing party shall be entitled to recover its reasonable attorneys' fees and other costs and expenses incurred, in addition to any other relief to which it may be entitled.

11.10. Right of Set-Off. In addition to any rights now or hereafter granted under Requirements of Law and not by way of limitation of any such rights, upon the occurrence of an Event of Default and at any time thereafter during the continuance of any Event of Default, Lender is hereby authorized by each Credit Party at any time or from time to time, without notice to any Credit Party or to any other Person, any such notice being hereby expressly waived, to set off and to appropriate and to apply any and all deposits (general or special, including Indebtedness evidenced by certificates of deposit, whether matured or unmatured, but not including trust accounts) and any other Indebtedness at any time held or owing by Lender to or for the credit or the account of any Credit Party against and on account of the obligations and liabilities of any Credit Party to Lender hereunder and under the other Loan Documents, including all claims of any nature or description arising out of or connected hereto or with any other Loan Document, irrespective of whether or not (a) Lender shall have made any demand hereunder or (b) the principal of or the interest on the Term Loans or any other amounts due hereunder shall have become due and payable pursuant to Section 2 and although such obligations and liabilities, or any of them, may be contingent or unmatured.

11.11. Marshalling; Payments Set Aside. Lender shall not be under any obligation to marshal any assets in favor of any Credit Party or any other Person or against or in payment of any or all of the Obligations. To the extent that any Credit Party makes a payment or payments to Lender, or Lender enforces any Liens or exercises its rights of setoff, and such payment or payments or the proceeds of such enforcement or setoff or any part thereof are subsequently invalidated, declared to be fraudulent or preferential, set aside or required to be repaid to a trustee, receiver or any other party under any bankruptcy law, any other state or federal law, common law or any equitable cause, then, to the extent of such recovery, the obligation or part thereof originally intended to be satisfied, and all Liens, rights and remedies therefor or related thereto, shall be revived and continued in full force and effect as if such payment or payments had not been made or such enforcement or setoff had not occurred.

11.12. Electronic Execution of Documents. The words "execution," "signed," "signature" and words of like import in any Loan Document shall be deemed to include electronic signatures or the keeping of records in electronic form, each of which shall be of the same legal effect, validity and enforceability as a manually executed signature or the use of a paper-based recordkeeping systems, as the case may be, to the extent and as provided for in any Requirements of Law, including any state law based on the Uniform Electronic Transactions Act.

11.13. Captions. Section headings herein are included herein for convenience of reference only and shall not constitute a part hereof for any other purpose or be given any substantive effect.

11.14. Construction of Agreement. The parties hereto mutually acknowledge that they and their attorneys have participated in the preparation and negotiation of this Agreement. In cases of uncertainty this Agreement shall be construed without regard to which of the parties hereto caused the uncertainty to exist.

11.15. Third Parties. Nothing in this Agreement, whether express or implied, is intended to: (a) confer any benefits, rights or remedies under or by reason of this Agreement on any Persons other than the express parties to it and their respective successors and permitted assigns; (b) relieve or discharge the obligation or liability of any Person not an express party to this Agreement; or (c) give any Person not an express party to this Agreement any right of subrogation or action against any party to this Agreement.

11.16. No Fiduciary Duty. Lender may have economic interests that conflict with those of the Credit Parties. Each Credit Party agrees that nothing in the Loan Documents or otherwise will be deemed to create an advisory, fiduciary or agency relationship or fiduciary or other implied duty between Lender, on the one hand, and

such Credit Party, its Subsidiaries, and any of their respective stockholders or affiliates, on the other hand. Each Credit Party acknowledges and agrees that (i) the transactions contemplated by the Loan Documents are arm's-length commercial transactions between Lender, on the one hand, and such Credit Party, its Subsidiaries and their respective affiliates, on the other, (ii) in connection therewith and with the process leading to such transaction, Lender is acting solely as a principal and not the agent or fiduciary of such Credit Party, its Subsidiaries or their respective affiliates, management, stockholders, creditors or any other person, (iii) Lender has not assumed an advisory or fiduciary responsibility in favor of any Credit Party, its Subsidiaries or their respective affiliates with respect to the transactions contemplated hereby or the process leading thereto (irrespective of whether Lender or any of its affiliates has advised or is currently advising such Credit Party, its Subsidiaries or their respective affiliates on other matters) or any other obligation to such Credit Party, its Subsidiaries or their respective affiliates except the obligations expressly set forth in the Loan Documents and (iv) each Credit Party, its Subsidiaries and their respective affiliates have consulted their own legal and financial advisors to the extent each deemed appropriate. Each Credit Party further acknowledges and agrees that it is responsible for making its own independent judgment with respect to such transactions and the process leading thereto. Each Credit Party agrees that it will not claim that Lender has rendered advisory services of any nature or respect, or owes a fiduciary or similar duty to such Credit Party, its Subsidiaries or their respective affiliates in connection with such transaction or the process leading thereto.

12. LENDER AGREEMENTS

12.1. Intercreditor Agreement. In connection with the incurrence by Borrower of any Permitted Indebtedness pursuant to clause (e) of the definition of Permitted Indebtedness, Lender hereby agrees that it will enter into a subordination, intercreditor or other similar Contract with the lender in respect of such Permitted Indebtedness and Borrower, which shall provide that the security interests and Liens of such lender in and on Inventory, accounts receivable, cash, supporting obligations and all proceeds of the foregoing to secure the obligations under such loan facility shall be senior in rank, order of priority and enforcement to the security interests and Liens of Lender in any such assets to secure the Obligations at all times until all of the obligations under such facility have been paid, performed or discharged in full and Borrower has no further right to obtain any extensions of credit thereunder, in form and substance reasonably satisfactory to Lender and such lender.

12.2. Non-Disturbance Agreement. Lender hereby agrees that, at the written request of Borrower, Lender will enter into a customary non-disturbance or similar agreement in connection with any Permitted License, in each case in form and substance reasonably satisfactory to Lender and the other party or parties thereto.

13. DEFINITIONS

13.1. Definitions. For the purposes of and as used in the Loan Documents: (a) references to any Person include its successors and assigns and, in the case of any Governmental Authority, any Person succeeding to its functions and capacities; (b) except as the context otherwise requires (including to the extent otherwise expressly provided in any Loan Document), (i) references to any law, treaty, order, policy, rule or regulation include amendments, supplements and successors thereto and (ii) references to any contract, agreement, instrument or other document (including any Contract) include any amendments, restatements, supplements or modifications thereto from time to time to the extent permitted by the provisions thereof; (c) the word "shall" is mandatory; (d) the word "may" is permissive; (e) the word "or" has the inclusive meaning represented by the phrase "and/or"; (f) the words "include", "includes" and "including" are not limiting; (g) the singular includes the plural and the plural includes the singular; (h) numbers denoting amounts that are set off in parentheses are negative unless the context dictates otherwise; (i) each authorization herein shall be deemed irrevocable and coupled with an interest; (j) all accounting terms shall be interpreted, and all determinations relating thereto shall be made, in accordance with Applicable Accounting Standards; (k) references to any time of day shall be to New York time; (l) the words "herein", "hereof", "hereby", "hereto" and "hereunder" refer to this Agreement as a whole; and (m) references to specific sections, articles, annexes and exhibits are to this Agreement and references to specific schedules are to the Disclosure Letter. As used in this Agreement, the following capitalized terms have the following meanings:

"**Account**" means any "account" as defined in the Code with such additions to such term as may hereafter be made, and includes all accounts receivable, book debts, and other sums owing to Credit Parties.

"**Account Debtor**" means any "account debtor" as defined in the Code with such additions to such term as may hereafter be made.

"**Acquisition**" means (a) any Stock Acquisition or (b) any Asset Acquisition.

"**Additional Consideration**" is defined in Section 2.7.

"**Adverse Proceeding**" means any action, suit, proceeding, hearing (whether administrative, judicial or otherwise), governmental investigation or arbitration (whether or not purportedly on behalf of any Credit Party or any of its Subsidiaries) at law or in equity, or before or by any Governmental Authority, domestic or foreign (including any Environmental Claims), whether pending or, to the Knowledge of each Credit Party or any of its Subsidiaries, threatened in writing against any Credit Party or any of its Subsidiaries or any properties or assets of any Credit Party or any of its Subsidiaries.

"**Affiliate**" means, with respect to any Person, each other Person that owns or controls directly or indirectly the Person, any Person that controls or is controlled by or is under common control with the Person, and each of that Person's senior executive officers, directors, partners and, for any Person that is a limited liability company or limited liability partnership, that Person's managers and members. As used in this definition, "control" means (a) direct or indirect beneficial ownership of at least fifty percent (50%) (or such lesser percentage which is the maximum allowed to be owned by a foreign corporation in a particular jurisdiction) of the voting share capital or other equity interest in a Person or (b) the power to direct or cause the direction of the management of such Person by Contract or otherwise.

"**Agreement**" is defined in the preamble hereof.

"**Anti-Terrorism Laws**" means any Money Laundering Laws or other laws relating to terrorism or money laundering, including Executive Order No. 13224 (effective September 24, 2001), the Patriot Act, the laws comprising or implementing the Bank Secrecy Act, and the laws administered by OFAC.

"**Applicable Accounting Standards**" means with respect to Borrower and its Subsidiaries, generally accepted accounting principles in the United States as set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other Person as may be approved by a significant segment of the accounting profession, which are applicable to the circumstances as of the date of determination, consistently applied.

"**Assessments**" is defined in Section 4.20(g).

"**Asset Acquisition**" means, with respect to Borrower or any of its Subsidiaries, any purchase, inbound license or other acquisition of any assets or properties of any other Person (or of any business, division, product line or line of business of any other Person (including rights in respect of any medical device)) other than the purchase, license or other acquisition for administrative expenses and other ordinary course operating expenses; provided that, for the avoidance of doubt, "Asset Acquisition" includes any co-promotion or co-marketing arrangement for the assets or properties owned by another Person (other than Borrower or any of its Subsidiaries), pursuant to which upfront payments in excess of $5,000,000 are payable. Notwithstanding the foregoing, an Asset Acquisition shall not include any license or grant described in Section 6.1(e).

"**Bankruptcy Code**" means Title 11 of the United States Code entitled "Bankruptcy," as now and hereafter in effect, or any successor statute.

"**Blocked Person**" means (a) any Person listed in the annex to, or is otherwise subject to the provisions of, Executive Order No. 13224, (b) a Person owned or controlled by, or acting for or on behalf of, any Person that is listed in the annex to, or is otherwise subject to the provisions of, Executive Order No. 13224, (c) a Person with which Lender is prohibited from dealing or otherwise engaging in any transaction by any Anti-Terrorism Law, (d) a Person that commits, threatens or conspires to commit or supports "terrorism" as defined in Executive Order No. 13224, or (e) a Person that is named a "specially designated national" or "blocked person" on the most current list published by OFAC or other similar list.

"**Board of Directors**" means, with respect to any Person, (i) in the case of any corporation, the board of directors of such Person, (ii) in the case of any limited liability company, the board of managers of such Person, or if there is none, the Board of Directors of the managing member of such Person, (iii) in the case of any partnership, the Board of Directors of the general partner of such Person and (iv) in any other case, the functional equivalent of the foregoing.

"**Board of Governors**" means the Board of Governors of the United States Federal Reserve System, or any successor thereto.

"**Books**" means all books and records including ledgers, federal, state and foreign Tax returns, records regarding a Credit Party's assets or liabilities, the Collateral, business operations or financial condition, and all computer programs or storage or any equipment containing such information.

"**Borrower**" is defined in the preamble hereof.

"**Borrowing Resolutions**" means, with respect to any Person, those resolutions adopted by such Person's Board of Directors and delivered by such Person to Lender approving the Loan Documents to which such Person is a party and the transactions contemplated thereby (including the Term Loan), together with a certificate executed by its Secretary on behalf of such Person certifying that (a) such Person has the authority to execute, deliver, and perform its obligations under each of the Loan Documents to which it is a party, (b) that attached as Exhibit A to such certificate is a true, correct, and complete copy of the resolutions then in full force and effect authorizing and ratifying the execution, delivery, and performance by such Person of the Loan Documents to which it is a party and (c) the name(s) of the Person(s) authorized to execute the Loan Documents on behalf of such Person, together with a sample of the true signature(s) of such Person(s).

"**Business Day**" means any day that is not a Saturday or a Sunday or a day on which banks are authorized or required to be closed in New York, New York or San Jose, California.

"**Cash Equivalents**" means: (a) marketable direct obligations issued or unconditionally guaranteed by the United States or any agency or any State thereof (provided that the full faith and credit of the United States is pledged in support thereof) having maturities of not more than twelve (12) months from the date of acquisition; (b) commercial paper issued by any Person in the United States maturing no more than twelve (12) months after its creation and having the highest rating from either Standard & Poor's Ratings Group or Moody's Investors Service, Inc.; (c) Dollar denominated certificates of deposit maturing no more than twelve (12) months after issue of any Lender or any commercial bank having, or which is the principal banking subsidiary of a bank holding company having, the highest long-term unsecured debt rating from either Standard & Poor's Ratings Group or Moody's Investors Service, Inc.; (d) investments in money market funds substantially all of whose assets are comprised of securities of the types described in clauses (a) through (c) above; (e) all foreign equivalents of the securities and investments described in clauses (a) through (d) above; and (f) investments permitted by Borrower's investment policy effective March 1, 2016 and previously made available to Lender. Notwithstanding the foregoing, "Cash Equivalents" do not include, and the Credit Parties and their Subsidiaries are prohibited from purchasing, purchasing participations in, entering into any type of swap or other equivalent derivative transaction or otherwise holding or engaging in any ownership interest in, any type of debt instrument, including any corporate or municipal bonds with a long-term nominal maturity for which the interest rate is reset through a Dutch auction and more commonly referred to as an auction rate security.

"**CFC**" means a "controlled foreign corporation" within the meaning of Section 957(a) of the IRC.

"CFC Holding Company" means a Domestic Subsidiary that is a United States person as defined in Section 7701(a)(3) of the IRC, the sole material assets of which are Equity Interests in one or more CFCs and any Domestic Subsidiaries described in this definition.

"**Change in Control**" means: (a) a transaction or series of related transactions (including any merger or consolidation) in which any "person" or "group" (within the meaning of Section 13(d) and 14(d)(2) of the Exchange Act) is or becomes the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of a sufficient number of shares of all classes of stock then outstanding of Borrower ordinarily entitled to vote in the election of directors, empowering such "person" or "group" to elect a majority of the Board of Directors of Borrower, who did not have such power before such transaction; and (b) a transaction or series of related transactions involving the sale, assignment, transfer or other conveyance of all or substantially all of the assets of Borrower and its Subsidiaries on a consolidated basis; provided, however, that an underwritten initial public offering of the equity interests of Borrower that results in a listing of Borrower's equity interests on a public securities exchange shall not be deemed a Change of Control event.

"**Change in Control Notice**" is defined in Section 2.2(c)(ii).

"**Change in Law**" means the occurrence, after the date of this Agreement, of any of the following: (a) the adoption or taking into effect of any law, treaty, order, policy, rule or regulation, (b) any change in any law, treaty, order, policy, rule or regulation or in the administration, interpretation or application thereof by any Governmental Authority or (c) the making or issuance of any request or directive (whether or not having the force of law) by any Governmental Authority; provided that notwithstanding anything herein to the contrary, (x) the Dodd-Frank Wall Street Reform and Consumer Protection Act and all requests, rules or directives thereunder or issued in connection therewith and (y) all requests, rules or directives promulgated by the Bank for International Settlements, the Basel Committee on Banking Supervision (or any successor or similar authority) or the United States or foreign regulatory authorities, in each case pursuant to Basel III, shall be deemed to be a "Change in Law", regardless of the date enacted, adopted or issued. Notwithstanding the foregoing, a "Change in Law" shall not include any amendment made to FATCA after the Tranche A Closing Date.

"**Code**" means the Uniform Commercial Code, as the same may, from time to time, be enacted and in effect in the State of New York; provided that, to the extent that the Code is used to define any term herein or in any Loan Document and such term is defined differently in different Articles of the Code, the definition of such term contained in Article 9 of the Code shall govern; provided, further, that in the event that, by reason of mandatory provisions of law, any or all of the attachment, perfection, or priority of, or remedies with respect to, Lender's Lien on any Collateral is governed by the Uniform Commercial Code in effect in a jurisdiction other than the State of New York, the term "Code" shall mean the Uniform Commercial Code as enacted and in effect in such other jurisdiction solely for purposes of the provisions thereof relating to such attachment, perfection, priority, or remedies and for purposes of definitions relating to such provisions.

"**Collateral**" means, collectively, "Collateral" (as such term is defined in the Security Agreement) and all other properties or assets of whatever kind and nature subject or purported to be subject from time to time to a Lien under any Collateral Document.

"**Collateral Account**" means any Deposit Account, Securities Account or Commodity Account.

"**Collateral Documents**" means the Security Agreement, the Control Agreements, the IP Agreements, any Mortgages and all other landlord consents, bailee waivers, instruments, documents and Contracts delivered by any Credit Party pursuant to this Agreement or any of the other Loan Documents, in each case, in order to grant to Lender or perfect a Lien on any Collateral as security for the Obligations, and all amendments, restatements, modifications or supplements thereof or thereto.

"Commercialization" means, with respect to any Product, any activities undertaken with respect to commercialization of such Product, including (a) advertising, promoting, marketing, offering, selling, importing, exporting, transporting, and distributing such Product, (b) strategic marketing or sales force detailing, educating, and liaising with the medical community, (c) obtaining necessary licenses and authorization from applicable Governmental Authorities, (d) interacting with the FDA and other Governmental Authorities regarding any of the foregoing, and (e) producing, Manufacturing and supplying such Product. "**Commercialize**" and "**Commercialized**" shall have comparable meanings.

"**Commodity Account**" means any "commodity account" as defined in the Code with such additions to such term as may hereafter be made.

"**Company IP**" means any and all of the following, as they exist throughout the world: (a) Current Company IP; (b) improvements, continuations, continuations-in-part, divisions, provisionals or any substitute applications, any patent issued with respect to any of the Current Company IP, any reissue, reexamination, renewal or patent term extension or adjustment (including any supplementary protection certificate) of any such patent, and any confirmation patent or registration patent or patent of addition based on any such patent, and all foreign counterparts of any of the foregoing; (c) trade secrets or trade secret rights, including any rights to unpatented inventions, know-how, operating manuals, confidential or proprietary information, research in progress, algorithms, data, databases, data collections, designs, processes, procedures, methods, protocols, materials, formulae, drawings, schematics, blueprints, flow charts, models, strategies, prototypes, techniques, and the results of experimentation and testing, including samples, in each case, as specifically related to Product; (d) any and all IP Ancillary Rights specifically relating to any of the foregoing; and (e) regulatory filings, submissions and approvals related to the Products.

"**Competitor**" means a medical device company participating in the development, manufacture and commercialization of surgical devices for the treatment of patients with lower back symptoms.

"**Compliance Certificate**" means that certain certificate in the form attached hereto as Exhibit B.

"**Confidential Information**" is defined in Section 11.8.

"**Connection Income Taxes**" means Other Connection Taxes that are imposed on or measured by net income (however denominated) or that are franchise Taxes or branch profits Taxes.

"**Consolidated EBITDA**" means, with respect to Borrower and its Subsidiaries on a consolidated basis for any period, an amount equal to Consolidated Net Income for such period, plus each of the following to the extent deducted in calculating such Consolidated Net Income, without duplication: (i) Consolidated Net Interest Expense for such period; (ii) the sum of federal, state, local and foreign income Taxes accrued or paid in cash during such period; (iii) the amount of depreciation expense deducted in determining Consolidated Net Income for such period; (iv) the amount of amortization expense deducted in determining Consolidated Net Income for such period; (v) any non-cash stock compensation expense recorded pursuant to FASB 123R for such period; (vi) to the extent actually paid during such period, fees and expenses related to the consummation of the transactions contemplated to be closed on the Tranche A Closing Date; (vii) transaction costs related to Permitted Acquisitions, Permitted Investments or any offering by Borrower of its Equity Interests during such period; and (viii) litigation costs.

"**Consolidated Net Income** " means, with respect to Borrower and its Subsidiaries on a consolidated basis for any period, the net income (loss) of Borrower and its Subsidiaries for such period, determined on a consolidated basis and in accordance with Applicable Accounting Standards, but excluding from the determination of Consolidated Net Income (without duplication): (a) any non-cash extraordinary or non-recurring gains or losses or non-cash gains or losses from Transfers for such period; (b) any restructuring charges; (c) effects of discontinued operations in such period; (d) any Tax refunds, net operating losses or other net Tax benefits received during such period on account of any prior period; and (e) the net income (or loss) of any Person accrued prior to the date (x) it becomes a Subsidiary of Borrower or (y) all or substantially all of the properties or assets of such Person are acquired by a Subsidiary of Borrower, in each case, determined on a consolidated basis and in accordance with Applicable Accounting Standards.

"**Consolidated Net Interest Expense**" means, with respect to Borrower and its Subsidiaries on a consolidated basis for any period, total interest expense (including mark-to- market interest expense with respect to any warrants to purchase Equity Interests of Borrower), premium payments, debt discount, fees, charges and related expenses with respect to all outstanding Indebtedness (including Permitted Hedging Agreements) of Borrower and its Subsidiaries for such period, determined on a consolidated basis and in accordance with Applicable Accounting Standards (including interest expense paid to Affiliates of Borrower), less interest income of Borrower and its Subsidiaries for such period, determined on a consolidated basis and in accordance with Applicable Accounting Standards.

"**Consulting Royalties**" means, with respect to any health care professional or other Person who is a counterparty to a health care professional consulting agreement or similar Contract with Borrower or any of its Subsidiaries, royalty payments due to, or obligations to make royalty payments to or enter into Contracts to pay royalties to, such Person arising out of consulting services provided to Borrower or any of its Subsidiaries relating to product development; provided that in no event shall Consulting Royalties under any such agreement or Contract exceed more than eight percent (8%) of sales of the product identified in such agreement or Contract.

"**Contingent Obligation**" means, for any Person, any direct or indirect liability, contingent or not, of that Person for (a) any indebtedness, lease, dividend, letter of credit or other obligation of another Person directly or indirectly guaranteed, endorsed, co-made, discounted or sold with recourse by that Person, or for which that Person is directly or indirectly liable; (b) any obligation for undrawn letters of credit for the account of that Person; or (c) any obligation to pay contingent or deferred consideration or other payments to a counterparty in connection with an Acquisition or a sale or other disposition or under any co-promotion or co-marketing arrangement, including, with respect to any purchase price holdback in respect of a portion of the purchase price of an asset sold to such Person to satisfy unperformed obligations of the seller of such asset, any obligation to pay such seller the excess of such holdback over such obligations; provided that "Contingent Obligation" does not include endorsements in the ordinary course of business. The amount of a Contingent Obligation is the stated or determined amount of the primary obligation for which the Contingent Obligation is made or, if not determinable, the maximum reasonably anticipated liability for it reasonably determined by such Person in good faith, but the amount may not exceed the maximum of the obligations under any guarantee or other support arrangement.

"**Contract**" means any agreement, lease, deed, sublease, other occupancy agreement, contract, note, mortgage, license, instrument, note, indenture, commitment, undertaking, joint venture or any other agreement, understanding, commitment or legally binding obligation or arrangement, whether written or oral.

"**Control Agreement**" means any control Contract entered into among the depository institution at which a Credit Party maintains a Deposit Account or the securities intermediary or commodity intermediary at which a Credit Party maintains a Securities Account or a Commodity Account, such Credit Party and (a) if Borrower incurs any Permitted Indebtedness pursuant to clause (e) of the definition of Permitted Indebtedness, the lender in respect of such Permitted Indebtedness, so long as such lender shall have agreed to hold control over such Deposit Account, Securities Account or Commodity Account for the benefit of Lender or (b) in all other cases, Lender, pursuant to which Lender obtains control (within the meaning of the Code) over such Deposit Account, Securities Account or Commodity Account.

"**Copyrights**" means any and all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret (and all related IP Ancillary Rights).

"**Credit Extension**" means any Term Loan or any other extension of credit by Lender for Borrower's

benefit.

"**Credit Party**" means each of Borrower and any Guarantor.

"**Cure Amount**" is defined in Section 6.17(c).

"**Cure Right**" is defined in Section 6.17(c).

"**Current Company IP**" means any and all Intellectual Property pending, registered or issued, which is owned by or exclusively licensed to any of the Credit Parties or any of their Subsidiaries or that any of the Credit Parties or any of their Subsidiaries has the right to acquire or license.

"**Current Company IP Agreement**" means any Contract, pursuant to which any Credit Party or any of its Subsidiaries has the legal right to exploit Current Company IP that is owned by another Person for the Manufacture, use, Commercialization or supply of any Product.

"**Customer Data**" is defined in Section 4.5(w).

"**Default**" means an event which, with the giving of notice or the lapse of time or both, would constitute an Event of Default.

"**Deposit Account**" means any "deposit account" as defined in the Code with such additions to such term as may hereafter be made.

"**Disclosure Letter**" means the disclosure letter, dated as of the Effective Date, delivered by Borrower to Lender, as updated on the Tranche A Closing Date (if required), on the Tranche B Closing Date (if applicable) and from time to time pursuant to the terms of this Agreement.

"**Disqualified Equity Interest**" means, with respect to any Person, any Equity Interest in such Person that by its terms (or by the terms of any security into which it is convertible or for which it is exchangeable, either mandatorily or at the option of the holder thereof), or upon the happening of any event or condition:

(i) matures or is mandatorily redeemable (other than solely for Equity Interests in such Person that do not constitute Disqualified Equity Interests and cash in lieu of fractional shares of such Equity Interests), whether pursuant to a sinking fund obligation or otherwise;

(ii) is convertible or exchangeable at the option of the holder thereof for Indebtedness or Equity Interests (other than solely for Equity Interests in such Person that do not constitute Disqualified Equity Interests and cash in lieu of fractional shares of such Equity Interests); or

(iii) is or may be redeemable (other than solely for Equity Interests in such Person that do not constitute Disqualified Equity Interests and cash in lieu of fractional shares of such Equity Interests) or is or may be required to be repurchased by such Person or any of its Affiliates (other than, at the option of such Person, solely for Equity Interests in such Person that do not constitute Disqualified Equity Interests and cash in lieu of fractional shares of such Equity Interests), in whole or in part, at the option of the holder thereof;

in each case, on or prior to the date that occurs 91 days after the Term Loan Maturity Date; provided, however, that any Equity Interests that would not constitute Disqualified Equity Interests but for provisions thereof giving holders thereof the right to require such Person to purchase or redeem such Equity Interests upon the occurrence of an "asset sale," "fundamental change" or "change of control" occurring prior to the date that is 91 days after the Term Loan Maturity Date shall not constitute Disqualified Equity Interest if the "asset sale," "fundamental change" or "change of control" provisions applicable to such Equity Interests are not more favorable to the holders of such Equity Interests than Section 6.1 and the provisions relating to a Change in Control contained herein; provided, further, however, that, if such Equity Interests are issued to any plan for the benefit of directors, managers, employees or consultants of Borrower or its Subsidiaries or by any such plan to such directors, managers, employees or consultants, such Equity Interests shall not constitute Disqualified Equity Interest solely because they may be required to be repurchased by Borrower or its Subsidiaries in order to satisfy applicable statutory or regulatory obligations.

"**Dollars**," "**dollars**" or use of the sign "**$**" means only lawful money of the United States and not any other currency, regardless of whether that currency uses the "$" sign to denote its currency or may be readily converted into lawful money of the United States.

"**Domestic Subsidiary**" means, with respect to any Credit Party, a Subsidiary of such Credit Party that is incorporated or organized under the laws of the United States.

"**Effective Date**" is defined in the preamble hereof.

"**Environmental Claim**" means any investigation, notice, notice of violation, claim, action, suit, proceeding, demand, abatement order or other order or directive (conditional or otherwise), by any Governmental Authority or any other Person, arising (i) pursuant to or in connection with any actual or alleged violation of any Environmental Law; (ii) in connection with any Hazardous Material or any actual or alleged Hazardous Materials Activity; or (iii) in connection with any actual or alleged damage, injury, threat or harm to health, safety, natural resources or the environment.

"**Environmental Laws**" means any and all current or future foreign or domestic, federal or state (or any subdivision of either of them), statutes, ordinances, orders, rules, regulations, judgments, Governmental Approvals, or any other requirements of Governmental Authorities relating to (i) environmental matters, including those relating to any Hazardous Materials Activity; (ii) the generation, use, storage, transportation or disposal of Hazardous Materials; or (iii) occupational safety and health, industrial hygiene, land use or the protection of human, plant or animal health or welfare, in each case, in any manner applicable to any Credit Party or any of its Subsidiaries or any Facility.

"**Equipment**" means all "equipment" as defined in the Code with such additions to such term as may hereafter be made, and includes all machinery, fixtures, goods, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing.

"**Equity Cure Right**" is defined in Section 6.17(c).

"**Equity Interests**" means, with respect to any Person, any and all shares, interests, participations or other equivalents (however designated) of capital stock of a corporation, any and all equivalent ownership interests in such Person (other than a corporation), including partnership interests and membership interests, and any and all warrants, rights or options to purchase or other arrangements or rights to acquire (by purchase, conversion, dividend, distribution or otherwise) any of the foregoing (including through convertible securities), and all other rights, powers, privileges, interests, claims and other property in any manner arising therefrom or relating thereto.

"**ERISA**" means the Employee Retirement Income Security Act of 1974, and its regulations.

"**ERISA Affiliate**" means, with respect to any person, any trade or business (whether or not incorporated) that, together with such person, is treated as a single employer under Section 414 of the IRC.

"**ERISA Event**" means (a) any "reportable event," as defined in Section 4043 of ERISA or the regulations issued thereunder, with respect to a Plan (other than an event for which the 30-day notice period is waived by regulation); (b) with respect to a Plan, the failure to satisfy the minimum funding standard of Section 412 of the IRC and Section 302 of ERISA, whether or not waived; (c) the failure to make by its due date a required installment under Section 430(j) of the IRC (or Section 430(j) of the IRC, as amended by the Pension Protection Act of 2006) with respect to any Plan or the failure to make any required contribution to a Multiemployer Plan; (d) the filing pursuant to Section 412(c) of the IRC or Section 303(d) of ERISA (or after the effective date of the Pension Protection Act of 2006, Section 412(c) of the IRC and Section 302(c) of ERISA) of an application for a waiver of the minimum funding standard with respect to any Plan; (e) the incurrence by Borrower or any of its ERISA Affiliates of any liability under Title IV of ERISA with respect to the termination of any Plan; (f) the receipt by Borrower or its Subsidiaries or any of their respective ERISA Affiliates from the Pension Benefit Guaranty Corporation (referred to and defined in ERISA) or a plan administrator of any notice relating to the intention to terminate any Plan or Plans or to appoint a trustee to administer any Plan, or the occurrence of any event or condition which could reasonably be expected to constitute grounds under ERISA for the termination of, or the appointment of a trustee to administer, any Plan; (g) the incurrence by Borrower or its Subsidiaries or any of their respective ERISA Affiliates of any liability with respect to the withdrawal from any Plan or Multiemployer Plan; (h) the receipt by Borrower or its Subsidiaries or any of their respective ERISA Affiliates of any notice, concerning the imposition of Withdrawal Liability or a determination that a Multiemployer Plan is, or is expected to be, insolvent or in reorganization, within the meaning of Title IV of ERISA; (i) the "substantial cessation of operations" within the meaning of Section 4062(e) of ERISA with respect to a Plan; (j) the making of any amendment to any Plan which could result in the imposition of a lien or the posting of a bond or other security; and (k) the occurrence of a nonexempt prohibited transaction (within the meaning of Section 4975 of the IRC or Section 406 of ERISA) which could reasonably be expected to result in material liability to Borrower or its Subsidiaries.

"**Event of Default**" is defined in Section 7.

"**Event of Loss"** means, with respect to any properties or assets, any of the following: (a) any loss, destruction or damage of such properties or assets; (b) any transfer in lieu of any pending or threatened (in writing) institution of any proceedings for the condemnation or seizure of such properties or assets or for the exercise of any right of eminent domain; or (c) any actual condemnation, seizure or taking, by exercise of the power of eminent domain or otherwise, of such properties or assets, or confiscation of such properties or assets or the requisition of the use of such properties or assets.

"**Exchange Act**" means the Securities Exchange Act of 1934.

"**Excluded Accounts**" is defined in Section 5.6.

" **Excluded Equity Interests**" means, collectively, (i) any Equity Interests of any Domestic Subsidiary indirectly owned by a Credit Party through a Foreign Subsidiary; (ii) any voting stock in excess of 65% of the issued and outstanding voting stock of any Foreign Subsidiary directly owned by any Credit Party or any Domestic Subsidiary directly owned by any Credit Party that is a CFC Holding Company which, pursuant to Section 5.14, is not required to be pledged to secure the Obligations; (iii) any Equity Interests of any other Domestic Subsidiary with respect to which, Borrower and Lender reasonably determine by mutual agreement that the cost of granting Lender a security interest, in and Lien upon, and pledging to Lender, such Equity Interests, to secure the Obligations (and any guaranty thereof) are excessive, relative to the value to be afforded to Lender thereby; (iv) any Equity Interests of any other Domestic Subsidiary with respect to which, Borrower and Lender reasonably determine by mutual agreement that the grant to Lender of a security interest in and Lien upon, and the pledge to Lender of, such Equity Interests, to secure the Obligations (and any guaranty thereof) are validly prohibited by Requirement of Law; (v) any Equity Interests of any other Domestic Subsidiary with respect to which, Borrower and Lender reasonably determine by mutual agreement that the grant to Lender of a security interest in and Lien upon, and the pledge to Lender of, such Equity Interests, to secure the Obligations (and any guaranty thereof) require the consent, approval or waiver of any Governmental Authority or other third party and such consent, approval or waiver has not been obtained by Borrower following Borrower's commercially reasonable efforts to obtain the same; and (vi) any Equity Interests of any other Domestic Subsidiary that is a non-Wholly-Owned Subsidiary, with respect to which, Borrower and Lender reasonably determine by mutual agreement that the grant to Lender of a security interest in and Lien upon, and the pledge to Lender of, such Equity Interests, to secure the Obligations (and any guaranty thereof) are validly prohibited by, or would give any third party (other than Borrower or an Affiliate of Borrower) the right to terminate its obligations under, the Operating Documents of the joint venture agreement or shareholder agreement with respect to, or any other contract with such third party relating to such non-Wholly-Owned Subsidiary (other than customary non-assignment provisions which are ineffective under Article 9 of the Code or other Requirement of Law), but only, in each case, to the extent, and for so long as such Operating Document, joint venture agreement, shareholder agreement or other contract is in effect and Borrower has not obtained the consent, approval or waiver of such third party following Borrower's commercially reasonable efforts to obtain the same.

"**Excluded License**" means an exclusive license or sublicense of any Intellectual Property covering any Product that is tantamount to a sale of substantially all rights to such Intellectual Property in a particular geography or field of use because it conveys to the licensee or sublicensee exclusive rights to practice such Intellectual Property in the applicable geography or field of use for consideration that is not based upon future development or Commercialization of any Product (other than pursuant to so-called earn-out payments) or services by the licensee or sublicensee (other than transition services), such as, for example, consideration of only upfront advances or initial license fees or similar payments in consideration of such rights, with no anticipated subsequent payments or *de minimis* payments to Borrower or any of its Subsidiaries (other than pursuant to so-called earn-out payments or transition services).

"**Excluded Subsidiaries**" means, collectively, (i) any Domestic Subsidiary owned indirectly by any Credit Party through a Foreign Subsidiary; (ii) any Subsidiary with respect to which, Borrower and Lender reasonably determine by mutual agreement that the grant to Lender of a security interest in and Lien upon, and the pledge to Lender of, such Subsidiary's properties and assets constituting Collateral and the Equity Interests of such Subsidiary, to secure the Obligations (and any guaranty thereof) are validly prohibited by Requirements of Law; (iii) any other Subsidiary with respect to which, Borrower and Lender reasonably determine by mutual agreement that the grant to Lender of a security interest in and Lien upon, and the pledge to Lender of, such Subsidiary's properties and assets constituting Collateral and the Equity Interests of such Subsidiary, to secure the Obligations (and any guaranty thereof) require the consent, approval or waiver of any Governmental Authority or other third party (other than Borrower or an Affiliate of Borrower) and such consent, approval or waiver has not been obtained by Borrower or such Subsidiary following Borrower's and such Subsidiary's commercially reasonable efforts to obtain the same; (iv) any other Subsidiary that is a non-Wholly-Owned Subsidiary, with respect to which, Borrower and Lender

reasonably determine by mutual agreement that the grant to Lender of a security interest in and Lien upon, and the pledge to Lender of, such non-Wholly-Owned Subsidiary's properties and assets constituting Collateral and the Equity Interests of such non-Wholly-Owned Subsidiary, to secure the Obligations (and any guaranty thereof) are validly prohibited by the Operating Documents of such non-Wholly-Owned Subsidiary, but only, in each case, to the extent, and for so long as such Operating Documents are in effect; (v) any other Subsidiary that is a non-Wholly-Owned Subsidiary, with respect to which, Borrower and Lender reasonably determine by mutual agreement that the grant to Lender of a security interest in and Lien upon, and the pledge to Lender of, such non-Wholly-Owned Subsidiary's properties and assets constituting Collateral and the Equity Interests of such non-Wholly-Owned Subsidiary, to secure the Obligations (and any guaranty thereof) are validly prohibited by, or would give any third party (other than Borrower or an Affiliate of Borrower) the right to terminate its obligations under, the joint venture agreement or shareholder agreement with respect to, or any other Contract with such third party relating to, such non-Wholly-Owned Subsidiary (other than customary non-assignment provisions which are ineffective under Article 9 of the Code or other Requirements of Law), but only, in each case, to the extent, and for so long as such joint venture agreement, shareholder agreement or other Contract is in effect, and Borrower has not obtained the consent, approval or waiver of such third party following Borrower's commercially reasonable efforts to obtain the same; and (vi) any other Subsidiary with respect to which, Borrower and Lender reasonably determine by mutual agreement that the cost of granting Lender a security interest in and Lien upon, and pledging to Lender, such Subsidiary's properties and assets constituting Collateral and the Equity Interests of such Subsidiary, to secure the Obligations (and any guaranty thereof) are excessive relative to the value to be afforded to Lender thereby.

"**Excluded Taxes**" means any of the following Taxes imposed on or with respect to a Lender or required to be withheld or deducted from a payment to a Lender: (a) Taxes imposed on or measured by net income (however denominated), franchise Taxes, and branch profits Taxes, in each case, (i) imposed as a result of such Lender being organized under the laws of, or having its principal office or its applicable lending office located in, the jurisdiction imposing such Tax (or any political subdivision thereof) or (ii) that are otherwise Other Connection Taxes; (b) U.S. federal withholding Taxes imposed on amounts payable to or for the account of such Lender with respect to any Obligation pursuant to a law in effect on the date on which (i) such Lender acquires an interest in any Obligation or (ii) such Lender changes its lending office (other than pursuant to a request from Borrower), except in each case to the extent that, pursuant to Section 2.6, amounts with respect to such Taxes were payable either to such Lender's assignor immediately before such Lender became a party hereto or to such Lender immediately before it changed its lending office, (c) Taxes attributable to such Lender's failure to comply with Section 2.6(c), and (d) any U.S. federal withholding Taxes imposed under FATCA.

"**Existing Oxford Loan Agreement**" means, collectively, that certain Loan and Security Agreement, dated as of October 20, 2015, among Oxford Finance LLC, a Delaware limited liability company, as collateral agent, the lenders party thereto from time to time and Borrower, as may be amended, restated, supplemented or otherwise modified, together with each other Loan Document (as such term is defined in the Existing Oxford Loan Agreement).

"**Facility**" means any real property (including all buildings, fixtures or other improvements located thereon) now, hereafter or heretofore owned, leased or operated by any Credit Party or any of its Subsidiaries or any of its or their respective predecessors or Affiliates; provided, however, that solely with respect to any leased office space, "Facility" shall include only those premises which are actually leased by such applicable Credit Party or Subsidiary.

"**FATCA**" means Sections 1471 through 1474 of the IRC, as of the date of this Agreement (including, for the avoidance of doubt, any agreements between the governments of the United States and the jurisdiction in which the applicable Lender is resident implementing such provisions),or any amended or successor version that is substantively comparable and not materially more onerous to comply with, and any current or future regulations promulgated thereunder or official interpretations thereof, any agreements entered into pursuant to Section 1471(b)(i) of the IRC and any law implementing an intergovernmental agreement that is included in this definition.

"**FCPA**" is defined in Section 4.18(a).

"**FDA**" means the United States Food and Drug Administration (and any foreign equivalent).

"**FDA Good Manufacturing Practices**" means the current good manufacturing practices requirements as set forth in the quality system regulation 21 C.F.R. Part 820 and the Canadian equivalent set forth in ISO 13485.

"**FDA Laws**" means all applicable statutes, rules, regulations, standards, policies and orders administered or issued by FDA (and any foreign equivalent), including the FDA's Fraud, Untrue Statements of Material Facts, Bribery and Illegal Gratuities Final Policy.

"**FDA Registration and Listing Requirements**" means the registration and listing requirements set forth in 21 U.S.C. § 360 and 21 C.F.R. Part 807 and all similar Requirements of Law (and any foreign equivalent).

"**FDCA**" is defined in Section 4.20(b).

"**Federal Reserve Board**" means the Board of Governors of the Federal Reserve System.

"**Foreign Subsidiary**" means, with respect to any Credit Party, any Subsidiary of such Credit Party that is not a Domestic Subsidiary.

"**Governmental Approval**" means any consent, authorization, approval, order, license, franchise, permit, certificate, accreditation, registration, filing or notice, of, issued by, from or to, or other act by or in respect of, any Governmental Authority.

"**Governmental Authority**" means any nation or government, any state or other political subdivision thereof, any agency, government department, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative functions of or pertaining to government, any securities exchange and any self-regulatory organization, in each case, whether domestic or foreign.

"**Governmental Payor Programs**" means all governmental third party payor programs in which any Credit Party or its Subsidiaries participates, including Medicare, Medicaid, TRICARE or any other federal or state health care programs (and any foreign equivalent).

"**Guarantor**" means any Domestic Subsidiary that is a present or future guarantor of the Obligations.

"**Hazardous Materials**" means any chemical, material or substance, exposure to which is prohibited, limited or regulated by any Governmental Authority or which may or could pose a hazard to the health and safety of the owners, occupants or any Persons in the vicinity of any Facility or to the indoor or outdoor environment.

"**Hazardous Materials Activity**" means any past, current, proposed or threatened (in writing) activity, event or occurrence involving any Hazardous Materials, including the use, manufacture, possession, storage, holding, presence, existence, location, Release, threatened (in writing) Release, discharge, placement, generation, transportation, processing, construction, treatment, abatement, removal, remediation, disposal, disposition or handling of any Hazardous Materials, and any corrective action or response action with respect to any of the foregoing.

"**Health Care Laws**" means, collectively: (a) any and all federal, state or local laws, rules, regulations, orders, ordinances, statutes and requirements issued under or in connection with Medicare, Medicaid or any other Government Payor Program; (b) federal and state laws and regulations governing the confidentiality of patient information, including HIPAA; (c) accreditation standards and requirements of all applicable state laws or regulatory bodies; (d) any and all federal, state and local fraud and abuse laws of any Governmental Authority, including the federal Anti-Kickback Statute (42 U.S.C. § 1320a-7(b)), the civil False Claims Act (31 U.S.C. § 3729 et seq.), Sections 1320a-7 and 1320a-7a of Title 42 of the United States Code and the regulations promulgated pursuant to such statutes; (e) any and all Requirements of Law relating to the billing or submission of claims to Government Payor Programs or other third party payors; (f) the Physician Payment Sunshine Act (42 U.S.C. § 1320a-7h); (g) California Health & Safety Code §§ 119400 – 119402; (h) all other applicable health care laws, rules, codes, statutes, regulations, orders, ordinances, policies, administrative guidance and requirements pertaining to Medicare or Medicaid, in each case, in any manner applicable to any Credit Party or any of its Subsidiaries; (i) any

and all federal, state or local laws, rules, regulations, ordinances, statutes and requirements relating to billings to insurance companies, health maintenance organizations and other Managed Care Plans or otherwise relating to insurance fraud; and (j) any and all foreign health care laws, rules, codes, regulations, orders, ordinances, statutes and requirements which, in each case, are analogous to any of the foregoing and applicable to any Credit Party or any of its Subsidiaries in any manner.

"**Hedging Agreement**" means any interest rate, currency, commodity or equity swap, collar, cap, floor or forward rate agreement, or other Contract or arrangement designed to protect a Person against fluctuations in interest rates, currency exchange rates or commodity or equity prices or values (including any option with respect to any of the foregoing and any combination of the foregoing agreements, Contracts or arrangements), and any confirmation executed in connection with any such agreement, Contract or arrangement.

"**HIPAA**" means the Health Insurance Portability and Accountability Act of 1996, any and all rules or regulations promulgated from time to time thereunder, and any comparable U.S. state laws.

"**HIPAA Compliance Plan**" is defined in Section 4.20(g).

"**Indebtedness**" means, with respect to any Person, without duplication: (a) all indebtedness for advanced or borrowed money of such Person; (b) all obligations issued, undertaken or assumed by such Person as the deferred purchase price of property, services or rights (other than (i) accrued expenses and trade payables entered into in the ordinary course of business that are not more than one hundred twenty (120) days past due or subject to a bona fide dispute, (ii) obligations to pay for services provided by employees and individual independent contractors in the ordinary course of business that are not more than one hundred twenty (120) days past due or subject to a bona fide dispute (including any obligations in respect of deferred compensation and severance, pension, health and welfare retirement and equivalent benefits to current or former employees, directors, officers, consultants or managers of any acquired Person and its Subsidiaries in connection with any Permitted Acquisition), (iii) liabilities associated with customer prepayments and deposits and (iv) prepaid or deferred revenue arising in the ordinary course of business), including any obligation or liability to pay deferred or contingent purchase price or other consideration for such property, services or rights; (c) the face amount of all letters of credit issued for the account of such Person and, without duplication, all drafts drawn thereunder and all reimbursement or payment obligations with respect to letters of credit, surety bonds, performance bonds and other similar instruments issued by such Person; (d) all obligations of such Person evidenced by notes, bonds, debentures or other debt securities or similar instruments (including debt securities convertible into Equity Interests), including obligations so evidenced incurred in connection with the acquisition of properties, assets or businesses; (e) all indebtedness of such Person created or arising under any conditional sale or other title retention agreement, or incurred as financing, in either case with respect to property acquired by such Person (even though the rights and remedies of the seller or bank under such agreement in the event of default are limited to repossession or sale of such property); (f) all capital lease obligations of such Person; (g) the principal balance outstanding under any synthetic lease, off-balance sheet loan or similar off balance sheet financing product provided to such Person; (h) all Disqualified Equity Interests (excluding any accrued dividends); (i) all indebtedness referred to in clauses (a) through (h) above of other Persons secured by (or for which the holder of such Indebtedness has an existing right, contingent or otherwise, to be secured by) any Lien upon or in property (including accounts and contracts rights) owned by such Person, even though such Person has not assumed or become liable for the payment of such indebtedness; and (j) all Contingent Obligations.

"**Indemnified Liabilities**" means, collectively, any and all liabilities, obligations, losses, damages (including natural resource damages), penalties, claims, actions, judgments, suits, costs, expenses and disbursements in connection with any investigative, administrative or judicial proceeding or hearing commenced or threatened in writing by any Person, whether or not any such Indemnified Person shall have commenced such proceeding or hearing or be designated as a party or a potential party thereto, and any fees or expenses incurred by Indemnified Persons in enforcing the indemnity hereunder (including the reasonable and documented fees and disbursements of counsel for Indemnified Persons (it being agreed that such legal counsel fees and expenses shall be limited to one primary counsel and one Intellectual Property counsel (if and to the extent applicable) for the Indemnified Persons, except in the case of actual or potential conflicts of interest between or among the Indemnified Persons)), whether direct, indirect or consequential and whether based on any federal, state or foreign laws, statutes, rules or regulations, on common law or equitable cause or on contract or otherwise, that may be imposed on, incurred by, or asserted against any such Indemnified Person, in any manner relating to or arising out of this Agreement or the other

Loan Documents or the transactions contemplated hereby or thereby (including Lender's agreement to make the Credit Extensions or the use or intended use of the proceeds thereof, or any enforcement of any of the Loan Documents (including any sale of, collection from, or other realization upon any of the Collateral or the enforcement of any guaranty of the Obligations)).

"**Indemnified Person**" is defined in Section 11.2(a).

"**Indemnified Taxes**" means (a) Taxes, other than Excluded Taxes, imposed on or with respect to any payment made by or on account of any obligation of any Credit Party under any Loan Document and (b) to the extent not otherwise described in clause (a) above, Other Taxes.

"**Insolvency Proceeding**" means, with respect to any Person, any proceeding by or against such Person under the United States Bankruptcy Code, or any other bankruptcy or insolvency law, including assignments for the benefit of creditors, compositions, extensions generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

"**Intellectual Property**" means all:

(a) Copyrights, Trademarks, and Patents;

(b) trade secrets and trade secret rights, including any rights to unpatented inventions, know-how, operating manuals;

(c) Software (as such term is defined in the Security Agreement);

(d) Internet Domain Names (as such term is defined in the Security Agreement);

(e) design rights;

(f) IP Ancillary Rights; and

(g) any similar or equivalent rights to any of the foregoing anywhere in the world.

"**Inventory**" means all "inventory" as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products, including such inventory as is temporarily out of a Credit Party's custody or possession or in transit and including any returned goods and any documents of title representing any of the above.

"**Investment**" means (i) any beneficial ownership interest in any Person (including Equity Interests), (ii) any Acquisition or (iii) the making of any advance, loan, extension of credit or capital contribution in or to, any Person.

"**IP Agreements**" means those certain Intellectual Property Security Agreements entered into by and between Borrower and Lender, each dated as of the Tranche A Closing Date, as such may be amended, restated, supplemented or otherwise modified from time to time.

"**IP Ancillary Rights**" means, with respect to any Copyright, Trademark, Patent, Software, trade secrets or trade secret rights, including any rights to unpatented inventions, know-how, operating manuals, all income, royalties, proceeds and liabilities at any time due or payable or asserted under or with respect to any of the foregoing or otherwise with respect thereto, including all rights to sue or recover at law or in equity for any past, present or future infringement, misappropriation, dilution, violation or other impairment thereof, and, in each case, all rights to obtain any other intellectual property right ancillary to any Copyright, Trademark, Patent, Software, trade secrets or trade secret rights.

"**IRC**" means the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder.

"**Knowledge**" or to the "**Knowledge**" of any Credit Party or any Subsidiaries of any Credit Party means the actual knowledge, after reasonable investigation, of each of the Chief Executive Officer, Chief Financial Officer, Chief Commercial Officer, Chief Technology Officer, Chief Medical Officer, Chief Compliance Office, President, Vice-President and General Counsel of each Credit Party and each of its Subsidiaries.

"**Lender**" is defined in the preamble hereof and shall include any successors or assigns.

"**Lender Expenses**" means all reasonable and documented costs, fees and expenses of Lender incurred in connection with preparing, amending, supplementing, modifying, negotiating, executing and delivering, administering, defending or enforcing, or otherwise preserving its rights and entitlements under, the Loan Documents (including those incurred in connection with appeals or Insolvency Proceedings) or otherwise incurred with respect to the Credit Parties in connection with the Loan Documents, including in all cases the reasonable and documented fees and expenses of legal counsel and any filing or recording fees and expenses (it being agreed that such legal counsel fees and expenses shall be limited to one primary counsel and one Intellectual Property counsel for Lender.

"**Lender Transfer**" is defined in Section 11.1.

"**Lien**" means a claim, mortgage, deed of trust, levy, charge, pledge, security interest or other encumbrance of any kind or assignment for security purposes, whether voluntarily incurred or arising by operation of law or otherwise against any properties or assets.

"**Liquidity**" means, on any date of determination, the sum of the Credit Parties' unrestricted cash and Cash Equivalents plus any unused availability under any revolving line of credit (not prohibited under the terms of this Agreement or any other Loan Document) on such date.

"**Loan Documents**" means, collectively, this Agreement, the Disclosure Letter, the Term Loan Note, the Security Agreement, the IP Agreements, each Compliance Certificate, the Perfection Certificate, any Control Agreement, any other Collateral Document, any guaranties executed by a Credit Party and any other present or future Contract between a Credit Party and Lender in connection with this Agreement, as such may be amended, restated, supplemented or otherwise modified from time to time (including, for the avoidance of doubt, any annexes, exhibits or schedules thereto).

"**Makewhole Amount**" means, on any date of determination occurring prior to the 30-month anniversary of the Tranche A Closing Date, an amount equal to the sum of all interest accruing from such date through the 30-month anniversary of the Tranche A Closing Date.

"**Managed Care Plans**" means all health maintenance organizations, preferred provider organizations, individual practice associations, competitive medical plans and similar arrangements.

"**Manufacturing**" means, with respect to any Product, any or all of the manufacturing services for the manufacture of such Product, including testing and releasing test material, compounds, raw materials or substances and packaging materials required or used in connection therewith, manufacturing, packaging, labeling, storing, inspecting, release testing and stability storage and testing of such Product. "**Manufacture**" and "**Manufactured**" shall have comparable meanings.

"**Manufacturing Agreements**" is defined in Section 4.22(c).

"**Margin Stock**" is defined in Section 4.13.

"**Material Adverse Change**" means any material adverse change in or material adverse effect on: (i) the business, condition (financial or otherwise), assets (including all or a material portion of the Collateral), liabilities (actual or contingent), operations, management, performance or properties of the Credit Parties, taken as a whole,

since December 31, 2016; (ii) without limiting the generality of clause (i) above, any rights in or related to any material Product, individually, or the Products, taken as a whole, or the Commercialization, research or clinical development of any material Product, individually, or the Products, taken as a whole; (iii) the ability of Borrower, individually, or the Credit Parties, taken as a whole, to fulfill the payment or performance obligations under this Agreement or any other Loan Document to which it is party or they are parties (including as a result of Borrower failing to remain Solvent, Borrower and its Subsidiaries that are Credit Parties, on a consolidated basis, failing to remain Solvent, or Borrower and its Subsidiaries, on a consolidated basis, failing to remain Solvent); or (iv) the binding nature or validity of, or the ability of Lender to enforce, this Agreement or any other Loan Document or any of its rights or remedies hereunder or thereunder. Notwithstanding anything to the contrary herein, an adverse reimbursement decision by an insurance company in respect of a Product shall not be a "Material Adverse Change."

"**Material Contract**" means any Contract to which a Credit Party or any of its Subsidiaries is a party (other than the Loan Documents) or by which any of its assets is bound (as such may be amended, restated, supplemented or otherwise modified from time to time), for which breach, nonperformance, cancellation, termination or failure to renew could reasonably be expected to result in a Material Adverse Change, but excluding, in any case, any customer contracts. For the avoidance of doubt, "Material Contract" includes any Manufacturing Agreement.

"**Medicaid**" means, collectively, the health care assistance program established by Title XIX of the SSA (42 U.S.C. 1396 et seq.) and any statutes succeeding thereto, and all laws, rules, regulations, orders or requirements pertaining to such program, including (a) all federal statutes affecting such program; (b) all state statutes and plans for medical assistance enacted in connection with such program and federal rules and regulations promulgated in connection with such program; and (c) all applicable provisions of all rules, regulations, orders and administrative, reimbursement, and requirements of all Government Authorities promulgated in connection with such program, in each case as the same may be amended, supplemented or otherwise modified from time to time.

"**Medicare**" means, collectively, the health insurance program for the aged and disabled established by Title XVIII of the SSA (42 U.S.C. 1395 et seq.) and any statutes succeeding thereto, and all laws, rules, regulations or orders pertaining to such program including (a) all federal statutes (whether set forth in Title XVIII of the SSA or elsewhere) affecting such program; and (b) all applicable provisions of all rules, regulations, orders and administrative, reimbursement and requirements of all governmental authorities promulgated in connection with such program, in each case as the same may be amended, supplemented or otherwise modified from time to time.

"**Money Laundering Laws**" is defined in Section 4.18(b).

"**Mortgage** " means any deed of trust, leasehold deed of trust, mortgage, leasehold mortgage, deed to secure debt, leasehold deed to secure debt or other document creating a Lien on real estate or any interest in real estate.

"**Multiemployer Plan**" means a multiemployer plan within the meaning of Section 4001(a)(3) or Section 3(37) of ERISA (a) to which Borrower or its Subsidiaries or their respective ERISA Affiliates is then making or accruing an obligation to make contributions; (b) to which Borrower or its Subsidiaries or their respective ERISA Affiliates has within the preceding five (5) plan years made contributions; or (c) with respect to which Borrower or its Subsidiaries could incur material liability.

"**Net Sales**" means, with respect to any period and solely with respect to sales of Products, the line item "product sales" (which includes a reduction for product sales allowances) of Borrower and its Subsidiaries for the prior twelve (12) months, determined consistent with past practice on a consolidated basis in accordance with Applicable Accounting Standards.

"**Obligations**" means, collectively, the Credit Parties' obligations to pay when due any and all debts, principal, interest, Lender Expenses, the Additional Consideration, the Make whole Amount, the Prepayment Premium, and other fees, expenses, indemnities and amounts any Credit Party owes Lender now or later, under this Agreement or any other Loan Document, including interest accruing after Insolvency Proceedings begin (whether or not allowed) and debts, liabilities, or obligations of Borrower assigned to Lender, and to perform Borrower's duties under the Loan Documents.

"**OFAC**" is defined in Section 4.18(c).

"**OFAC Lists**" means, collectively, the Specially Designated Nationals and Blocked Persons List maintained by OFAC pursuant to Executive Order No. 13224, 66 Fed. Reg. 49079 (Sept. 25, 2001) or any other list of terrorists or other restricted Persons maintained pursuant to any of the rules and regulations of OFAC or pursuant to any other applicable Executive Orders.

"**Operating Documents**" means, collectively with respect to any Person such Person's formation documents as certified with the Secretary of State or other applicable Governmental Authority of such Person's jurisdiction of formation on a date that is no earlier than thirty (30) days prior to the date on which such documents are due to be delivered under this Agreement and, (a) if such Person is a corporation, its bylaws (or similar organizational regulations) in current form, (b) if such Person is a limited liability company, its limited liability company agreement (or similar Contract), and (c) if such Person is a partnership, its partnership agreement (or similar Contract), in each case, with all current amendments, restatements, supplements or modifications thereto.

"**ordinary course of business**" means, in respect of any transaction involving any Person, the ordinary course of such Person's business, undertaken by such Person in good faith and not for purposes of evading any covenant, prepayment obligation or restriction in any Loan Document.

"**Other Connection Taxes**" means, with respect to Lender, Taxes imposed as a result of a present or former connection (including present or former connection of its agents) between such Lender and the jurisdiction imposing such Tax (other than connections arising solely from Lender having executed, delivered, become a party to, performed its obligations under, received payments under, received or perfected a security interest under, engaged in any other transaction pursuant to or enforced any Loan Document).

"**Other Taxes**" means all present or future stamp, court or documentary, intangible, recording, filing, sales, transfer, excise, mortgage or property Taxes, charges or similar levies or similar Taxes that arise from any payment made hereunder, from the execution, delivery, performance, enforcement or registration of, from the receipt or perfection of a security interest under, or otherwise with respect to, any Loan Document, except any such Taxes that are Other Connection Taxes imposed with respect to an assignment.

"**Patent Licenses**" means (a) any Contract providing for the grant by or to a Person of any right to manufacture, use or sell any invention covered by a Patent, together with the goodwill associated therewith, all registrations and recordings thereof, and all applications in connection therewith, whether in the United States Patent and Trademark Office or in any similar office or agency of the United States, any State thereof or any other country, multinational body or any political subdivision thereof (and all related IP Ancillary Rights) and (b) all renewals thereof.

"**Patents**" means all patents, patent applications including any improvements, continuations, continuations-in-part, divisions, provisionals or any substitute applications, any patent issued based upon any of the foregoing patent applications, any reissue, reexamination, renewal or patent term extension or adjustment (including any supplementary protection certificate) of any such patent, and any confirmation patent or registration patent or patent of addition based on any such patent.

"**Patriot Act**" is defined in Section 3.1(k).

"**Payment/Advance Form**" means that certain form attached hereto as Exhibit A.

"**Payment Date**" means the last day of each calendar quarter.

"**Perfection Certificate**" is defined in Section 4.5.

"**Permitted Acquisition**" means any Acquisition, so long as:

(a) no Default or Event of Default shall have occurred and be continuing or would result from the consummation of the proposed Acquisition;

(b) the assets being acquired or licensed, or the Person whose Equity Interests are being acquired, are useful in or engaged in, as applicable, (i) the same or a related line of business as that then-conducted by Borrower or its Subsidiaries or (ii) a line of business that is ancillary to and in furtherance of a line of business as that then-conducted by Borrower or its Subsidiaries;

(c) in the case of an Asset Acquisition, the subject assets are being acquired or licensed by Borrower or a Subsidiary of Borrower, and the applicable Person shall have executed and delivered or authorized, as applicable, any and all security agreements, financing statements, fixture filings, and other Contracts or documentation required pursuant to Sections 5.14 and 5.15 in order to include the newly acquired or licensed assets within the Collateral;

(d) in the case of a Stock Acquisition, (i) the subject Equity Interests are being acquired in such Acquisition directly by a Credit Party and (ii) the relevant Credit Party shall have complied with its obligations under Section 5.14 within the time periods specified therein;

(e) any Indebtedness or Liens assumed in connection with such Acquisition are otherwise permitted under Section 6.4 or 6.5, respectively;

(f) such Acquisition shall be consensual and shall have been approved by the Board of Directors of the Person whose Equity Interests or assets are proposed to be acquired and shall not have been preceded by an unsolicited tender offer for such Equity Interests by, or proxy contest initiated by, Borrower or any of its Subsidiaries;

(g) Borrower shall have delivered to Lender (i) to the extent prepared, projections for the Person whose Equity Interests or assets or properties are proposed to be acquired or, in the case of an applicable co-promotion or co-marketing arrangement, for the product that is the subject of such arrangement, (ii) for any Acquisition for consideration in excess of $5,000,000, updated pro forma projections for Borrower and its Subsidiaries evidencing compliance on a pro forma basis with Section 5.12 and Section 6.17 for the twelve (12) calendar months following the date of such Acquisition (on a quarter-by-quarter basis) and (iii) for any Acquisition, a Perfection Certificate, updated solely with respect to such Acquisition if the kind or nature of the Equity Interests, assets or properties which are the subject of such Acquisition is such as would require Lender to take any steps to establish, maintain, protect or enforce a first priority security interest therein and Lien thereon securing the Obligations; and

(h) at least five (5) Business Days prior to the proposed date of consummation of such Acquisition, Borrower shall have delivered to Lender a certificate of a Responsible Officer of Borrower certifying that (i) such Acquisition complies with this definition of "Permitted Acquisition" (which shall have attached thereto reasonably detailed backup data and calculations showing such compliance) and (ii) such Acquisition could not reasonably be expected to result in a Material Adverse Change.

"**Permitted Hedging Agreement**" means any currency agreement or other Contract or arrangement designed solely to protect a Person against fluctuations in currency exchange rates, and any confirmation executed in connection with any such agreement, Contract, or arrangement, in each case, entered into by Borrower or any of its Subsidiaries solely to hedge or mitigate the risks of foreign exchange rate fluctuations and not for any speculative or other purposes; provided that such agreement, Contract or arrangement complies in all respects with the hedging policies or guidelines as are approved by the Board of Directors and as are approved by Lender (such approval not to be unreasonably withheld, delayed or conditioned).

"**Permitted Indebtedness**" means:

(a) Credit Parties' Indebtedness to Lender under this Agreement and the other Loan Documents;

(b) Indebtedness existing on the Tranche A Closing Date and shown on Schedule 13.1 of the Disclosure Letter;

(c) Indebtedness consisting of Contingent Obligations set forth in clause (a) of the definition of "Contingent Obligation" (i) of a Credit Party of Permitted Indebtedness of another Credit Party, (ii) of a Subsidiary of Borrower which is not a Credit Party of Permitted Indebtedness of another Subsidiary of Borrower which is not a Credit Party, (iii) of a Subsidiary of Borrower which is not a Credit Party of Permitted Indebtedness of a Credit Party and (iv) of a Credit Party of Permitted Indebtedness and non-debt obligations of a Subsidiary of Borrower which is not a Credit Party in an amount not to exceed $500,000 in any fiscal year;

(d) Indebtedness consisting of Contingent Obligations (i) set forth in clause (b) of the definition of "Contingent Obligation" and (ii) set forth in clause (c) of the definition of "Contingent Obligation" in connection with any Permitted Acquisition;

(e) Indebtedness of Borrower in the form of a revolving loan facility with a maximum aggregate credit line of no more than $10,000,000 at any and all times; provided, however, that Consolidated EBITDA for each of the two (2) consecutive fiscal quarters immediately prior to the initial incurrence of any Indebtedness was no less than $0.00 (excluding extraordinary or non-recurring items); provided, further, that Consolidated EBITDA for each of the two (2) consecutive fiscal quarters immediately prior to any subsequent draw down of any Indebtedness was no less than $0.00 (excluding extraordinary or non-recurring items); provided, further, that the proceeds of such Indebtedness shall not be used to fund, in whole or in part, any Acquisition; provided, further, that such Indebtedness is secured on a first-priority basis by Liens on Inventory, accounts receivable, cash, supporting obligations and all proceeds of the foregoing to secure the obligations under such facility shall be senior in rank, order of priority and enforcement to the security interests and Liens of Lender in any such assets to secure the Obligations at all times until all of the obligations under such facility have been paid, performed or discharged in full and Borrower has no further right to obtain any extension of credit thereunder, pursuant to a subordination, intercreditor or other similar Contract among Lender, Borrower and the lender under such facility, in form and substance reasonably satisfactory to Lender and the lender under such facility;

(f) Indebtedness of any Person that becomes a Subsidiary (or of any Person not previously a Subsidiary that is merged or consolidated with or into a Subsidiary in a transaction permitted hereunder) of Borrower after the Tranche A Closing Date, or Indebtedness of any Person that is assumed after the Tranche A Closing Date by any Subsidiary in connection with an acquisition of assets by such Subsidiary, in either case, in a Permitted Acquisition; provided that (i) such Indebtedness exists at the time such Person becomes a Subsidiary (or such merger or consolidation) or such assets are acquired and is not created in contemplation of or in connection with such Person becoming a Subsidiary (or such merger or consolidation) or such assets being acquired or such Indebtedness arises as a result of an earn-out or similar arrangement, (ii) either: (A) no Subsidiary of Borrower (other than a Subsidiary without significant assets formed in order to effect such acquisition, including by way of a merger) or Borrower shall guarantee or otherwise become liable for the payment of such Indebtedness or (B) if any other Subsidiary of Borrower becomes liable for or guarantees such Indebtedness, its liability or guarantee with respect to such Indebtedness shall at all times be subordinated to its obligations hereunder, if any, pursuant to a subordination, intercreditor or other similar Contract in form and substance reasonably satisfactory to Lender and (iii) the creation, incurrence, assumption or guarantee of, or the liability with respect to, such Indebtedness would not otherwise result in a Default or Event of Default;

(g) secured and unsecured business credit card Indebtedness in an outstanding principal amount not to exceed at any time $1,000,000 in the aggregate;

(h) unsecured intercompany Indebtedness permitted under clauses (m), (o) and (t) under the definition of "Permitted Investments";

(i) Indebtedness owed to (including obligations in respect of letters of credit or bank guarantees or similar instruments for the benefit of) any Person providing workers' compensation, health, disability or other employee benefits or property, casualty or liability insurance to Borrower or any of its Subsidiaries, pursuant to reimbursement or indemnification obligations to such Person, in each case, in the ordinary course of business;

(j) Indebtedness in respect of performance bonds, bid bonds, appeal bonds, surety bonds and completion guarantees and similar obligations arising in the ordinary course of business;

(k) Indebtedness in respect of netting services or overdraft protection in connection with deposit or securities accounts in the ordinary course of business;

(l) Indebtedness consisting of the financing of insurance premiums in the ordinary course of business;

(m) Indebtedness not to exceed $1,000,000 in the aggregate at any time outstanding, consisting of capital lease obligations or secured by Liens permitted by clause (d) of the definition of "Permitted Liens";

(n) Indebtedness arising in connection with endorsement of instruments for deposit in the ordinary course of business;

(o) Permitted Hedging Agreements;

(p) purchase price adjustments, indemnity payments and earn-out obligations in connection with any Permitted Acquisition;

(q) obligations in respect of Consulting Royalties;

(r) Indebtedness of Subsidiaries owed to Credit Parties and their Subsidiaries in connection with the sale of Inventory in the ordinary course of business;

(s) other Indebtedness in an aggregate amount not to exceed $500,000; and

(t) subject to the proviso immediately below, extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness in clauses (a) through (s) above; provided that the principal amount thereof is not increased other than by any reasonable premium or other reasonable amount paid and fees and expenses reasonably incurred in connection with the same and the terms thereof are not modified to shorten the maturity thereof.

Notwithstanding the foregoing, "Permitted Indebtedness" shall not include any (x) Indebtedness incurred by Borrower or any of its Subsidiaries upon the conversion or exchange of any Disqualified Equity Interests which are not issued and outstanding as of the Effective Date and shown on Schedule 13.2 of the Disclosure Letter and (y) Hedging Agreements other than Permitted Hedging Agreements.

"**Permitted Investments**" means:

(a) Investments (including Investments in Subsidiaries) existing on the Tranche A Closing Date and shown on Schedule 13.1 of the Disclosure Letter, and any extensions, renewals or reinvestments thereof;

(b) Investments (i) consisting of cash and Cash Equivalents and (ii) permitted by the proposed amendment to the investment policy provided to Lender and expected to be adopted immediately after Borrower becomes a Public Reporting Company; provided, however, that, for purposes of measuring compliance with any provision of Section 5.12 or Section 6, "Cash Equivalents" shall only include Investments permitted by Borrower's investment policy effective March 1, 2016 and previously made available to Lender;

(c) Investments consisting of the endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business;

(d) subject to Section 5.6, Investments consisting of deposit accounts or securities accounts;

(e) Investments by Borrower or any of its Subsidiaries pursuant to a Permitted License;

(f) Investments in connection with Permitted Transfers;

(g) Investments consisting of (i) travel advances and employee relocation loans and other employee advances in the ordinary course of business and (ii) loans to employees, officers or directors relating to the purchase of equity securities of Borrower pursuant to employee stock purchase plans or Contracts approved by Borrower's Board of Directors, so long as the aggregate amount of all such loans does not exceed $500,000 in the aggregate;

(h) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the ordinary course of business;

(i) Investments consisting of notes receivable of, or prepaid royalties and other credit extensions, to customers and suppliers who are not Affiliates, in the ordinary course of business; provided that this clause (i) shall not apply to Investments of any Credit Party in any of its Subsidiaries;

(j) joint ventures or strategic alliances consisting of the non-exclusive licensing of technology, the development of technology or the providing of technical support; provided that any cash investments by Borrower and its Subsidiaries do not exceed $500,000 in the aggregate in any fiscal year;

(k) any Permitted Acquisitions and Investments required in connection with a Permitted Acquisition (including the formation of any Subsidiary for the purpose of effectuating such Permitted Acquisition, the capitalization of such Subsidiary whether by capital contribution or intercompany loans, in each case, to the extent permitted by the terms of this Agreement, related Investments in Subsidiaries necessary to consummate such Permitted Acquisition, and the receipt of any non-cash consideration in a Permitted Acquisition);

(l) Investments constituting the formation of any Subsidiary for the purpose of consummating a merger or acquisition transaction permitted by Section 6.3(a)(i) through (v) hereof; provided that such merger or acquisition transaction is otherwise a Permitted Investment;

(m) Investments of any Person that (i) becomes a Subsidiary of Borrower (or of any Person not previously a Subsidiary of Borrower that is merged or consolidated with or into a Subsidiary of Borrower in a transaction permitted hereunder) after the Tranche A Closing Date, or (ii) are assumed after the Tranche A Closing Date by any Subsidiary of Borrower in connection with an acquisition of assets from such Person by such Subsidiary, in either case, in a Permitted Acquisition; provided that, in each case, any such Investment (x) exists at the time such Person becomes a Subsidiary of Borrower (or is merged or consolidated with or into a Subsidiary of Borrower) or such assets are acquired, (y) was not made in contemplation of or in connection with such Person becoming a Subsidiary of Borrower (or merging or consolidating with or into a Subsidiary of Borrower) or such acquisition of assets, and (z) such Investment would not otherwise result in a Default or Event of Default;

(n) Investments arising as a result of the licensing of Intellectual Property in the ordinary course of business;

(o) Investments by (i) any Credit Party in or to any other Credit Party, (ii) any Subsidiary of Borrower which is not a Credit Party in or to another Subsidiary of Borrower which is not a Credit Party, (iii) any Subsidiary of Borrower which is not a Credit Party in or to any Credit Party and (iv) any Credit Party or any Subsidiary of a Credit Party to any Subsidiary of a Credit Party which is not a Credit Party in an amount not to exceed $2,000,000 per fiscal year;

(p) Investments arising out of Transfers of Inventory by Borrower to Subsidiaries that are not Credit Parties pursuant to transfer pricing arrangements in the ordinary course of business (and any related intercompany balances and any capitalization of such balances);

(q) Investments arising out of the receipt of non-cash consideration for any Permitted Transfer;

(r) Permitted Hedging Agreements;

(s) without limiting the generality of clause (k) above, Investments consisting of earnest money deposits required in connection with a Permitted Acquisition or other acquisition of properties or assets not prohibited hereunder;

(t) Investments consisting of Acquisitions from third parties of Inventory, Equipment, office supplies, software and other similar assets in the ordinary course of business; and

(u) other Investments not otherwise permitted under Section 6.8 in an aggregate amount (valued at the time of the making thereof) not to exceed $500,000 at any time;

provided, however, that none of the foregoing Investments shall be a "Permitted Investment" if any Indebtedness or Liens assumed in connection with such Investment are not otherwise permitted under Section 6.4 or 6.5, respectively.

Notwithstanding the foregoing, "Permitted Investments" shall not include any Hedging Agreements other than Permitted Hedging Agreements.

"**Permitted Licenses**" means: (a) a non-exclusive or an exclusive as to geography other than the United States license of (or covenant not to sue with respect to) Intellectual Property or grant of development, manufacture, distribution, co-promotion or similar commercial rights to third parties; (b) subject to prior satisfaction of the requirements set forth in the following sentence, a non-exclusive or an exclusive as to geography within the United States license of Intellectual Property or grant of development, manufacture, distribution, co-promotion or similar commercial rights to third parties; (c) non-exclusive licensing of (or granting of a covenant not to sue with respect to) technology or Intellectual Property, granting of development, manufacture, distribution, co-promotion or similar commercial rights, the development of technology or the providing of technical support; (d) a non-exclusive or an exclusive grant of manufacturing and distribution licenses to third parties in the ordinary course of business; and (e) intercompany licenses or other similar arrangements among the Credit Parties and their Subsidiaries; provided, however, that the licenses or similar arrangements described in this clause (e) by any Credit Party to any Subsidiary that is not a Credit Party shall not permit any non-exclusive or exclusive as to geography within the United States license of (or covenant not to sue with respect to) Intellectual Property (including any out-licenses) or grant of development, manufacture, distribution, co-promotion or similar commercial rights (including the right to Commercialize Products) and shall only permit an exclusive as to geography other than the United States license of Intellectual Property if such Credit Party retains all rights to such Intellectual Property other than those rights that are the subject of such license. Notwithstanding the foregoing, any license or other arrangement described in clause (b) above shall not constitute a Permitted License hereunder unless and until (i) Borrower shall have given written notice of such proposed license or other arrangement to Lender, which notice shall (A) identify the parties to such proposed license or other arrangement, (B) include a description of the material terms and conditions of such proposed license or other arrangement and (C) include copies of any and all Contracts relating to such proposed license or other arrangement, (ii) Lender shall have given its written consent to such proposed license or other arrangement; provided that, in the event Lender does not deliver in writing its rejection of such proposed license or other arrangement within ten (10) Business Days after the effective date of delivery of the notice from Borrower contemplated in sub-clause (i) above, then Lender shall be deemed to have waived its right to reject such proposed license or other arrangement, and Borrower or its Subsidiary that is a party to such proposed license or other arrangement shall be permitted to enter into such proposed license or other arrangement, unless any of the terms or conditions thereof have changed in any material respect from the terms set forth in the materials provided to Lender pursuant to sub-clause (i) above, in which event Lender's right to consent to such proposed license or other arrangement shall be deemed to be revived and such proposed license or other arrangement shall not constitute a Permitted License unless and until Borrower delivers a new notice to Lender in accordance with sub-clause (i) above and the requirements of sub-clause (ii) above has been satisfied as to such proposed license or other arrangement (as so amended or modified). Notwithstanding the foregoing, "Permitted Licenses" shall not include any Excluded Licenses entered into after the Tranche A Closing Date unless first consented to in writing by Lender.

"**Permitted Liens**" means:

(a) Liens existing on the Tranche A Closing Date and shown on the Perfection Certificate or arising under this Agreement and the other Loan Documents;

(b) Liens existing on the Tranche A Closing Date and shown on Schedule 13.1 of the Disclosure Letter;

(c) Liens for Taxes, fees, assessments or other government charges or levies, either (i) not due and payable or (ii) being contested in good faith and for which such Credit Party maintains adequate reserves on its Books; provided that no notice of any such Lien has been filed or recorded;

(d) (i) Liens on any property acquired or held by any Credit Party or any Subsidiary of any Credit Party incurred or assumed for the purpose of financing (or refinancing) all or any part of the cost of acquiring, repairing, improving or constructing such property and (ii) Liens securing capital lease obligations, in each case, permitted under clause (m) of the definition of "Permitted Indebtedness";

(e) Permitted Licenses and Liens incurred pursuant to Permitted Licenses, and the licenses or grants described in Section 6.1(e);

(f) Liens of carriers, warehousemen, suppliers, landlords, mechanics, materialmen, repairmen or other Persons that are possessory in nature arising in the ordinary course of business, so long as no such Lien secures liabilities in an amount in excess of $250,000, individually, or $500,000, in the aggregate for all such Liens and, in each case, such liabilities are not delinquent or remain payable without penalty or are being contested in good faith and by appropriate proceedings diligently conducted, and for which such Credit Party maintains adequate reserves on its Books;

(g) Liens to secure payment of workers' compensation, unemployment insurance, old-age pensions, social security and other like obligations incurred in the ordinary course of business (other than Liens imposed by ERISA);

(h) Liens arising from attachments or judgments, orders, or decrees in circumstances not constituting an Event of Default under either Section 7.4 or 7.7;

(i) subject to Section 5.6, Liens in favor of other financial institutions arising in connection with deposit or securities accounts held at such institutions; provided that such Liens relate solely to obligations for administrative and other banking fees and expenses (but not Indebtedness) incurred in the ordinary course of business in connection with the maintenance of such accounts;

(j) subject to Section 6.2(c), statutory or common law Liens of landlords;

(k) leases or subleases of real property granted in the ordinary course of Borrower's business consistent with past practice (or, if referring to another Person, in the ordinary course of such Person's business), and leases, subleases, nonexclusive licenses or sublicenses of personal property (other than Intellectual Property) granted in the ordinary course of Borrower's business consistent with past practice (or, if referring to another Person, in the ordinary course of such Person's business), in each case, if such lease, sublease, license or sublicense does not prohibit granting Lender a security interest therein;

(l) Liens incurred or deposits made to secure the performance of tenders, bids, leases, statutory or regulatory obligations, surety and appeal bonds, government contracts, performance and return-of-money bonds, and other obligations of like nature, in each case, in the ordinary course of business;

(m) Liens on the properties or assets of a Subsidiary which is not a Credit Party securing Indebtedness of such Subsidiary permitted hereunder;

(n) Liens securing Indebtedness permitted under clauses (d)(i), (e), (f), (g), (i), (j), (k), (l), (m), (n), (p) and (t) of the definition of "Permitted Indebtedness" (as they relate to Indebtedness permitted under clauses (d)(i), (e), (f), (g), (i), (j), (k), (l), (m), (n), (p) and (t) of such definition); provided that, in the case of Liens securing Indebtedness permitted pursuant to clause (d)(i) of the definition of "Permitted Indebtedness," such Liens are limited to Liens on cash and Cash Equivalents in an amount not to exceed 110% of the face amount of the applicable letter of credit;

(o) Liens on earnest money deposits in connection with any Permitted Acquisition or other acquisition of properties or assets not prohibited hereunder;

(p) any interest or title of a lessor or sublessor under any lease permitted by this Agreement; provided that such interest or title is subordinate to the interest of the Secured Parties;

(q) easements, rights-of-way, zoning and other restrictions, minor defects or other irregularities in title and other similar encumbrances incurred in the ordinary course of business which are not substantial in amount and which do not materially detract from the value of the property subject thereto or materially interfere with the ordinary conduct of the businesses of any Credit Party or any Subsidiary of any Credit Party;

(r) Liens arising out of a conditional sale, title retention, consignment or similar arrangements for the sale of Product entered into by Borrower or any Subsidiary of Borrower in the ordinary course of business;

(s) Liens on cash and Cash Equivalents to secure obligations under Permitted Hedging Agreements; and

(t) Liens incurred in the extension, renewal or refinancing of the indebtedness secured by Liens described in clauses (a) through (s), but any extension, renewal or replacement Lien must be limited to the properties or assets encumbered by the existing Lien (and any additions, accessions, parts, improvements and attachments thereto and the proceeds thereof) and the principal amount of the indebtedness may not increase other than by any reasonable premium or other reasonable amount paid and fees and expenses reasonably incurred in connection with the same; provided, however, that, to the extent any of the foregoing Liens secure Indebtedness of a Credit Party, such Liens shall constitute Permitted Liens only if and to the extent that such Indebtedness constitutes Permitted Indebtedness.

"**Permitted Transfers**" is defined in Section 6.1.

"**Person**" means any individual, sole proprietorship, partnership, limited liability company, joint venture, company, trust, unincorporated organization, association, corporation, institution, public benefit corporation, firm, joint stock company, estate, entity or government agency.

"**Plan**" means any employee pension benefit plan (other than a Multiemployer Plan) subject to the provisions of Title IV of ERISA or Section 412 of the IRC or Section 302 of ERISA which is maintained or contributed to by Borrower or its Subsidiaries or their respective ERISA Affiliates or with respect to which Borrower or its Subsidiaries are subject to liability (including under Section 4069 of ERISA).

"**Preferred Stock**" means, as applied to the Equity Interests of any Person, the Equity Interests of any class or classes (however designated) that is preferred with respect to the payment of dividends, or as to the distribution of assets upon any voluntary or involuntary liquidation or dissolution of such Person, over shares of Equity Interests of any other class of such Person.

"**Prepayment Premium**" means, with respect to any prepayment of the Term Loans by Borrower pursuant to Section 2.2(c), an amount equal to the product of the amount of such prepayment (including, for the avoidance of doubt, all principal and accrued and unpaid interest thereon), multiplied by:

(i) if such prepayment occurs prior to the four (4) year anniversary of the Tranche A Closing Date, 0.02; and

(ii) if such prepayment occurs on or after the four (4) year anniversary of the Tranche A Closing Date and prior to the Term Loan Maturity Date, 0.01.

"**Private Third Party Payor Programs**" means all third party payor programs in which any Credit Party or its Subsidiaries participates, including Managed Care Plans, or any other private insurance programs, whether domestic or foreign, but excluding all Governmental Payor Programs.

"**Product**" means, collectively, the iFuse Implant™, the iFuse-3D™ Implant and the iFuse Neuromonitoring Kit (or any successor products thereto).

"**Product IP**" means any and all Current Company IP relating to the Products.

"Public Reporting Company" means an issuer generally subject to the reporting requirements of the Securities and Exchange Act of 1934.

"**Register**" is defined in Section 2.8(a).

"**Registered Organization**" means any "registered organization" as defined in the Code with such additions to such term as may hereafter be made.

"**Regulatory Agency**" means a Governmental Authority with responsibility for the approval of the marketing and sale of pharmaceutical, biologic or medical devices or other regulation of pharmaceutical, biologic or medical devices.

"**Regulatory Approval**" means all approvals (including where applicable, pricing and reimbursement approval and schedule classifications), licenses (including product or establishment licenses), registrations, clearances or authorizations of any Regulatory Agency necessary for the development, Manufacture, production, use, import, export, transport or sale of any Product.

"**Release**" means any release, spill, emission, leaking, pumping, pouring, injection, escaping, deposit, disposal, discharge, dispersal, dumping, leaching or migration of any Hazardous Material into the indoor or outdoor environment (including the abandonment or disposal of any barrels, containers or other closed receptacles containing any Hazardous Material), including the movement of any Hazardous Material through the air, soil, surface water or groundwater.

"**Requirements of Law** " means, as to any Person, the organizational or governing documents of such Person, and any law (statutory or common), treaty, order, policy, rule or regulation or determination of an arbitrator or a court or other Governmental Authority (including Health Care Laws, FDA Laws and all applicable statutes, rules, regulations, standards, policies and orders administered or issued by any foreign Governmental Authority), in each case, applicable to or binding upon such Person or any of its properties or assets or to which such Person or any of its properties or assets is subject.

"**Responsible Officer**" means, with respect to any Credit Party or its Subsidiaries, any of the Chief Executive Officer, President, Chief Financial Officer and Controller of such Credit Party.

"**Restricted License**" means any Current Company IP Agreement that prohibits or otherwise restricts a Credit Party from granting a security interest in such Credit Party's interest in such Current Company IP Agreement in a manner enforceable under applicable law.

"**SEC**" shall mean the Securities and Exchange Commission and any analogous Governmental Authority.

"**Secured Parties**" means Lender, each other Indemnified Person and each other holder of any Obligation of a Credit Party.

"**Securities Account**" means any "securities account" as defined in the Code.

"**Security Agreement**" means the Guaranty and Security Agreement, dated as of the Tranche A Closing Date, by and among the Credit Parties and Lender, as such may be amended, restated, supplemented or otherwise modified from time to time.

"**Solvent**" means, with respect to any Person as of any date of determination, that, as of such date, (a) the value of the assets of such Person (both at fair value and present fair saleable value) is greater than the total amount of liabilities (including contingent and unliquidated liabilities) of such Person, (b) such Person is able to pay all liabilities of such Person as such liabilities mature and (c) such Person does not have unreasonably small capital. In computing the amount of contingent or unliquidated liabilities at any time, such liabilities shall be computed at the amount that, in light of all the facts and circumstances existing at such time, represents the amount that can reasonably be expected to become an actual or matured liability.

"**Specified Disputes**" is defined in Section 4.5(j).

"**Specified Financial Covenants**" is defined in Section 6.17(c).

"**SSA**" means the Social Security Act of 1935, codified at Title 42, Chapter 7, of the United States Code.

"**Stock Acquisition**" means the purchase or other acquisition by Borrower or any of its Subsidiaries of all of the Equity Interests (by merger, stock purchase or otherwise) of any other Person.

"**Subordinated Debt**" means, collectively, unsecured Indebtedness incurred by any Credit Party or any Subsidiary thereof (including any Indebtedness permitted in connection with any Permitted Acquisition) that (a) is subordinated in right of payment to the Obligations pursuant to a subordination, intercreditor or other similar Contract that is in form and substance satisfactory to Lender (which Contract shall include turnover provisions that are satisfactory to Lender), (b) is not subject to scheduled amortization, redemption (mandatory or voluntary), sinking fund or similar payment and does not have a final maturity, in each case, before the date that is six (6) months after the Term Loan Maturity Date, (c) does not include any covenants or any agreements that, individually or taken as a whole, are more restrictive or onerous on any Credit Party in any material respect than any comparable covenants in this Agreement and (d) does not provide or otherwise include provisions having the effect of providing that a default or event of default (or the equivalent thereof, however described) under or in respect of such Indebtedness shall exist, or such Indebtedness shall otherwise become due prior to its scheduled maturity or the holder or holders thereof or any trustee or agent on its or their behalf shall be permitted (with or without the giving of notice, the lapse of time or both) to cause any such Indebtedness to become due, or to require the prepayment, repurchase, redemption or defeasance thereof, prior to its scheduled maturity, in any such case upon the occurrence of a Default or Event of Default unless and until the Obligations have been declared, or have otherwise automatically become, immediately due and payable pursuant to Section 8.1(a).

"**Subsidiary** " means, with respect to any Person, a corporation, partnership, limited liability company or other entity of which shares of stock or other ownership interests having ordinary voting power (other than stock or such other ownership interests having such power only by reason of the happening of a contingency) to elect a majority of the Board of Directors of such corporation, partnership or other entity are at the time owned, or the management of which is otherwise controlled, directly or indirectly through one or more intermediaries, or both, by such Person. Unless the context otherwise requires, each reference to a Subsidiary herein shall be a reference to a direct or indirect Subsidiary of a Credit Party.

"**Tax**" means any United States federal, state, local or non-United States income, gross receipts, license, payroll, employment, occupation, premium, profits, withholding, franchise, alternative minimum, sales, use, transfer, value added, excise, stamp, customs, real property, personal property, escheat, capital stock, social security, unemployment or other similar charge or tax of any kind whatsoever, including any interest, penalties or additions to tax in respect of the foregoing, whether disputed or not.

"**Term Loan**" means each of the Tranche A Loan and the Tranche B Loan, as applicable, and "**Term Loans**" means, collectively, the Tranche A Loan and the Tranche B Loan.

"**Term Loan Maturity Date**" means the five-year anniversary of the Tranche A Closing Date.

"**Term Loan Note**" means each of the Tranche A Note and the Tranche B Note, as applicable, and "**Term Loan Notes**" means, collectively, the Tranche A Note and the Tranche B Note.

"**Territory**" means the United States and all other countries in which any Product has been Commercialized, or in which any attempt to Commercialize any Product has occurred (such as submission of applications to Governmental Authorities).

"**Third Party IP**" is defined in Section 4.5(n).

"**Trademark License**" means any Contract providing for the grant by or to a Person of any right to use any Trademark.

"**Trademarks**" means (a) all trademarks, trade names, corporate names, company names, business names, fictitious business names, service marks, elements of package or trade dress of goods or services, logos and other source or business identifiers, together with the goodwill associated therewith, all registrations and recordings thereof, and all applications in connection therewith, whether in the United States Patent and Trademark Office or in any similar office or agency of the United States, any State thereof or any other country, multinational body or any political subdivision thereof (and all related IP Ancillary Rights) and (b) all renewals thereof.

"**Tranche A Closing Date**" means the earlier to occur of (a) the date that is ten (10) Business Days following the Effective Date and (b) October 27, 2017.

"**Tranche A Loan**" is defined in Section 2.2(a)(i).

"**Tranche A Loan Amount**" is defined in Section 2.2(a)(i).

"**Tranche A Note**" means a promissory note in substantially the form attached hereto as Exhibit C-1, as it may be amended, restated, supplemented or otherwise modified from time to time.

"**Tranche B Closing Date**" means the date on which the Tranche B Loan is advanced by Lender, which, subject to the satisfaction of the conditions precedent to the Tranche B Loan set forth in Section 3.2 and Section 3.3, shall be after the Tranche A Closing Date and on or prior to January 31, 2019.

"**Tranche B Note**" means a promissory note in substantially the form attached hereto as Exhibit C-2, as it may be amended, restated, supplemented or otherwise modified from time to time.

"**Tranche B Loan**" is defined in Section 2.2(a)(ii).

"**Tranche B Loan Amount**" means (a) if Net Sales for the two fiscal quarters preceding the Tranche B Closing Date taken together are greater than or equal to $28,500,000 but less than $33,000,000, $10,000,000; and (b) if Net Sales for the two fiscal quarters preceding the Tranche B Closing Date taken together are greater than or equal to $33,000,000, not less than $10,000,000 and not greater than $20,000,000, as selected by Borrower in its sole discretion in the Payment/Advance Form. For the avoidance of doubt if Net Sales for the two fiscal quarters preceding the Tranche B Closing Date taken together are less than $28,500,000, the Tranche B Loan Amount equals zero.

"**Transfer**" is defined in Section 6.1.

"**TRICARE**" means, collectively, a program of medical benefits covering former and active members of the uniformed services and certain of their dependents, financed and administered by the United States Departments of Defense, Health and Human Services and Transportation, and all laws applicable to such programs.

"**United States**" or "**U.S.**" means the United States of America, its fifty (50) states, each territory thereof and the District of Columbia, including American Samoa, Puerto Rico, the U.S. Virgin Islands, Guam, Northern Marianas, Johnson Atoll, Kingman Reef, Midway Islands, Navassa Island, Howland Island, Palmyra Atoll, Baker Island, Jarvis Island and Wake Island.

"**Vulture Fund**" means any hedge fund or private equity fund that exclusively buys distressed securities of commercial companies or sovereign nations and then uses various methods to gain a larger amount than the purchase price of such securities.

"**WHO**" means the World Health Organization.

"**Wholly-Owned Subsidiary**" means, with respect to any Person, a Subsidiary of such Person, all of the Equity Interests of which (other than directors' qualifying shares or nominee or other similar shares required pursuant to Requirements of Law) are owned by such Person or another Wholly-Owned Subsidiary of such Person. Unless the context otherwise requires, each reference to a Wholly-Owned Subsidiary herein shall be a reference to a Wholly-Owned Subsidiary of a Credit Party.

"**Withdrawal Liability**" means liability to a Multiemployer Plan as a result of a complete or partial withdrawal from such Multiemployer Plan, as such terms are defined in Part I of Subtitle E of Title IV of ERISA.

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of Effective Date.

SI-BONE, INC.,
as Borrower

By /s/ Laura Francis
Name: Laura Francis
Title: Chief Financial Officer

BIOPHARMA CREDIT INVESTMENTS IV SUB LP,
as Lender

By: Pharmakon Advisors, LP,
its Investment Manager

By: Pharmakon Management I, LLC,
its General Partner

By /s/ Pedro Gonzalez de Cosio
Name: Pedro Gonzalez de Cosio
Title: Managing Member

EXHIBIT A – PAYMENT/ADVANCE FORM

The undersigned, being the duly elected and acting of SI-BONE, INC., a Delaware corporation ("**Borrower**"), does hereby certify, solely in his/her capacity as an authorized officer of Borrower and not in his/her personal capacity, to BIOPHARMA CREDIT INVESTMENTS IV SUB LP ("**Lender**") in connection with that certain Loan Agreement dated as of October 13, 2017 by and among Borrower, Lender and the other parties thereto (the "**Loan Agreement**"; with other capitalized terms used below having the meanings ascribed thereto in the Loan Agreement) that, on the Tranche [A] [B] Closing Date:

1. [the amount of the Tranche B Loan shall be $.][1]

2. the representations and warranties made by the Credit Parties in Section 4 of the Loan Agreement and in the other Loan Documents are true and correct in all material respects, unless any such representation or warranty is stated to relate to a specific earlier date, in which case such representation or warranty shall be true and correct in all material respects as of such earlier date (it being understood that any representation or warranty that is qualified as to "materiality," "Material Adverse Change," or similar language shall be true and correct in all respects on the Tranche [A][B] Closing Date or as of such earlier date, as applicable);

3. no Default or an Event of Default has occurred since the [Effective Date][2] [Tranche A Closing Date][3] or is occurring as of the date hereof;

4. each of the Credit Parties is in compliance with the covenants and requirements contained in Sections 5 and 6 of the Loan Agreement;

5. all conditions referred to in Section 3 of the Loan Agreement to the making of the Term Loan to be made on or about the date hereof have been satisfied or waived in writing by Lender;

6. no Material Adverse Change or Change in Control has occurred;

7. the undersigned is a Responsible Officer; and

8. the proceeds of the Term Loan shall be disbursed as set forth on Attachment A hereto.

Dated: _____, 201_

[signature page follows]

---

[1] To be included in Payment/Advance Form for Tranche B Loan only.
[2] To be included in Payment/Advance Form for Tranche A Loan only.
[3] To be included in Payment/Advance Form for Tranche B Loan only.

SI-BONE, INC.,
as Borrower

By _____
Name: _____
Title: _____

EXHIBIT B - COMPLIANCE CERTIFICATE

TO: BIOPHARMA CREDIT INVESTMENTS IV SUB LP

FROM: SI-BONE, INC.

The undersigned authorized officer of SI-BONE, INC., a Delaware corporation ("**Borrower**") hereby certifies, solely in his/her capacity as an authorized officer of Borrower and not in his/her personal capacity, that in accordance with the terms and conditions of the Loan Agreement (the "**Loan Agreement**") dated as of October 13, 2017 by and between Borrower and BioPharma Credit Investments IV Sub LP, a Cayman Islands limited partnership ("**Lender**"):

(i) The Credit Parties are in complete compliance for the period ending _____ with all required covenants except as noted below; [it being understood and agreed that audited annual financial statements are due within one hundred eighty (180) days of the end of each fiscal year pursuant to Section 5.2(a)(i) of the Loan Agreement;][4]

(ii) No Default or Event of Default has occurred and is continuing, except as noted below; and

(iii) Each Credit Party, and each of its Subsidiaries, have timely filed all required Tax returns and reports or extensions therefor, have timely paid all foreign, federal, state, and local Taxes, assessments, deposits and contributions owed by such Credit Party and each of its Subsidiaries, except as otherwise permitted pursuant to the terms of Section 5.4 of the Loan Agreement.

Attached are the required documents, if any, supporting our certification(s). The undersigned officer on behalf of Borrower further certifies that the attached financial statements are prepared in accordance with Applicable Accounting Standards and are consistently applied from one period to the next except as explained in an accompanying letter or footnotes and except, in the case of unaudited financial statements, for the absence of footnotes and subject to year-end audit adjustments as to the interim financial statements. Capitalized terms used but not otherwise defined herein shall have the meanings given them in the Loan Agreement.

Date: _____

[signature page follows]

4 Include in fiscal year end Compliance Certificate only.

SI-BONE, INC.,
as Borrower

By _____
Name: _____
Title: _____

Please indicate compliance status since the last Compliance Certificate by circling Yes, No, or N/A under "Complies" column.

	Reporting Covenant	Requirement	Complies		
1)	Audited Annual Financial Statements	180 days after year end	Yes	No	N/A
2)	Unaudited Annual Financial Statements	60 days after year end	Yes	No	N/A
3)	Quarterly Financial Statements	60 days after quarter end	Yes	No	N/A
4)	SEC Statements	5 days after filing, if applicable	Yes	No	N/A
5)	Other Statements	5 days after delivery	Yes	No	N/A
6)	Legal Action Notice	Promptly	Yes	No	N/A
7)	Consolidated Plan and Financial Forecast	No later than March 1	Yes	No	N/A
8)	Notice of Default, etc.	Promptly (within 2 Business Days) after knowledge	Yes	No	N/A
9)	IP Notice	Promptly (within 5 Business Days), when required	Yes	No	N/A
10)	Governmental Recommendations	5 Business Days after receipt	Yes	No	N/A
11)	Change in Control	Promptly (within 2 Business Days), when required	Yes	No	N/A
12)	Liquidity Shortfall	Promptly (within 5 Business Days)	Yes	No	N/A

Deposit and Securities Accounts ***(Please list all accounts; attach separate sheet if additional space needed)***

	Bank	Account Number	New Account?		Acct Control Agmt in place?	
1)			Yes	No	Yes	No
2)			Yes	No	Yes	No
3)			Yes	No	Yes	No

4)			Yes	No	Yes	No
5)			Yes	No	Yes	No
6)			Yes	No	Yes	No

Financial Covenants

1)	Minimum Liquidity	See Section 5.12	Yes	No	N/A
2)	Minimum Net Sales	See Section 6.17	Yes	No	N/A
3)	Minimum EBITDA	See Section 6.17	Yes	No	N/A

Other Matters

Have there been any changes in management since the last Compliance Certificate?	Yes	No
Have there been any prohibited Transfers?	Yes	No

Exceptions

Please explain any exceptions with respect to the certification above: (If no exceptions exist, state “No exceptions.” Attach separate sheet if additional space needed.)

_____

_____

_____

_____

LENDER USE ONLY

Compliance Status	Yes	No

EXHIBIT C-1

TRANCHE A NOTE

$40,000,000.00 Dated: October [__], 2017

FOR VALUE RECEIVED, the undersigned, SI-BONE, INC., a Delaware corporation ("**Borrower**"), HEREBY PROMISES TO PAY to the order of BIOPHARMA CREDIT INVESTMENTS IV SUB LP, a Cayman Islands limited partnership ("**Lender**") the principal amount of FORTY MILLION DOLLARS ($40,000,000.00), plus interest on the aggregate unpaid principal amount hereof at a fixed per annum rate (which rate shall be fixed for the duration of this Tranche A Note) equal to eleven and one-half percent (11.50%) per annum, and in accordance with the terms of the Loan Agreement dated as of October 13, 2017 by and between Borrower and Lender (as amended, restated, supplemented or otherwise modified from time to time, the "**Loan Agreement**"). If not sooner paid, the entire principal amount, all accrued and unpaid interest hereunder, all due and unpaid Lender Expenses and any other amounts payable under the Loan Documents shall be due and payable on the Term Loan Maturity Date. Any capitalized term not otherwise defined herein shall have the meaning attributed to such term in the Loan Agreement.

Borrower shall make equal quarterly payments of principal commencing on the Payment Date that is the 36th-month anniversary of the Tranche A Closing Date, and continuing on the Payment Date of each successive quarter thereafter. Interest shall accrue on this Tranche A Note commencing on, and including, the date of this Tranche A Note, and shall accrue on this Tranche A Note, or any portion thereof, for the day on which this Tranche A Note or such portion is paid. Interest on this Tranche A Note shall be payable in accordance with Section 2.3 of the Loan Agreement.

Principal, interest and all other amounts due with respect to this Tranche A Note are payable in lawful money of the United States of America to Lender as set forth in the Loan Agreement and this Tranche A Note.

The Loan Agreement, among other things, (a) provides for the making of secured Term Loans by Lender to Borrower, and (b) contains provisions for acceleration of the maturity hereof upon the happening of certain stated events.

This Tranche A Note may not be prepaid except as set forth in Section 2.2(c), Section 6.10(o) or Section 6.17(c) of the Loan Agreement.

This Tranche A Note and the obligation of Borrower to repay the unpaid principal amount of this Tranche A Note, interest thereon, and all other amounts due Lender under the Loan Agreement are secured pursuant to the Collateral Documents.

Presentment for payment, demand, notice of protest and all other demands and notices of any kind in connection with the execution, delivery, performance and enforcement of this Tranche A Note are hereby waived.

Borrower shall pay all reasonable fees and expenses, including, without limitation, reasonable attorneys' fees and costs, incurred by Lender in the enforcement or attempt to enforce any of Borrower's obligations hereunder not performed when due.

THIS TRANCHE A NOTE SHALL BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO ANY PRINCIPLES OF CONFLICTS OF LAW THAT COULD REQUIRE THE APPLICATION OF THE LAW OF ANY OTHER JURISDICTION.

Note Register; Ownership of Note. The ownership of an interest in this Tranche A Note shall be registered on a record of ownership maintained by Lender. Notwithstanding anything else in this Tranche A Note to the contrary, the right to the principal of, and stated interest on, this Tranche A Note may be transferred only if the transfer is

registered on such record of ownership and the transferee is identified as the owner of an interest in the obligation. Lender shall be entitled to treat the registered holder of this Tranche A Note (as recorded on such record of ownership) as the owner in fact thereof for all purposes and shall not be bound to recognize any equitable or other claim to or interest in this Tranche A Note on the part of any other Person.

IN WITNESS WHEREOF, Borrower has caused this Tranche A Note to be duly executed by one of its officers thereunto duly authorized on the date hereof.

BORROWER:

SI-BONE, INC.,
as Borrower

By _____
Name: _____
Title: _____

EXHIBIT C-2

TRANCHE B NOTE

$ .00 Dated: , 201

FOR VALUE RECEIVED, the undersigned, SI-BONE, INC., a Delaware corporation ("**Borrower**"), HEREBY PROMISES TO PAY to the order of BIOPHARMA CREDIT INVESTMENTS IV SUB LP, a Cayman Islands limited partnership ("**Lender**") the principal amount of MILLION DOLLARS ($__,000,000.00),[5] plus interest on the aggregate unpaid principal amount hereof at a fixed per annum rate (which rate shall be fixed for the duration of this Tranche B Note) equal to eleven and one-half percent (11.50%) per annum, and in accordance with the terms of the Loan Agreement dated as of October 13, 2017 by and between Borrower and Lender (as amended, restated, supplemented or otherwise modified from time to time, the "**Loan Agreement**"). If not sooner paid, the entire principal amount, all accrued and unpaid interest hereunder, all due and unpaid Lender Expenses and any other amounts payable under the Loan Documents shall be due and payable on the Term Loan Maturity Date. Any capitalized term not otherwise defined herein shall have the meaning attributed to such term in the Loan Agreement.

Borrower shall make equal quarterly payments of principal commencing on the Payment Date that is the 36th-month anniversary of the Tranche A Closing Date, and continuing on the Payment Date of each successive quarter thereafter. Interest shall accrue on this Tranche B Note commencing on, and including, the date of this Tranche B Note, and shall accrue on this Tranche B Note, or any portion thereof, for the day on which this Tranche B Note or such portion is paid. Interest on this Tranche B Note shall be payable in accordance with Section 2.3 of the Loan Agreement.

Principal, interest and all other amounts due with respect to this Tranche B Note are payable in lawful money of the United States of America to Lender as set forth in the Loan Agreement and this Tranche B Note.

The Loan Agreement, among other things, (a) provides for the making of secured Term Loans by Lender to Borrower, and (b) contains provisions for acceleration of the maturity hereof upon the happening of certain stated events.

This Tranche B Note may not be prepaid except as set forth in Section 2.2(c), Section 6.10(o) or Section 6.17(c) of the Loan Agreement.

This Tranche B Note and the obligation of Borrower to repay the unpaid principal amount of this Tranche B Note, interest thereon, and all other amounts due Lender under the Loan Agreement are secured pursuant to the Collateral Documents.

Presentment for payment, demand, notice of protest and all other demands and notices of any kind in connection with the execution, delivery, performance and enforcement of this Tranche B Note are hereby waived.

Borrower shall pay all reasonable fees and expenses, including, without limitation, reasonable attorneys' fees and costs, incurred by Lender in the enforcement or attempt to enforce any of Borrower's obligations hereunder not performed when due.

THIS TRANCHE B NOTE SHALL BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO ANY PRINCIPLES OF CONFLICTS OF LAW THAT COULD REQUIRE THE APPLICATION OF THE LAW OF ANY OTHER JURISDICTION.

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5 Insert Tranche B Loan Amount

Note Register; Ownership of Note. The ownership of an interest in this Tranche B Note shall be registered on a record of ownership maintained by Lender. Notwithstanding anything else in this Tranche A Note to the contrary, the right to the principal of, and stated interest on, this Tranche B Note may be transferred only if the transfer is registered on such record of ownership and the transferee is identified as the owner of an interest in the obligation. Lender shall be entitled to treat the registered holder of this Tranche B Note (as recorded on such record of ownership) as the owner in fact thereof for all purposes and shall not be bound to recognize any equitable or other claim to or interest in this Tranche B Note on the part of any other Person.

IN WITNESS WHEREOF, Borrower has caused this Tranche B Note to be duly executed by one of its officers thereunto duly authorized on the date hereof.

BORROWER:

SI-BONE, INC.,
as Borrower

By _____
Name: _____
Title: _____

AMENDMENT NO. 1 TO LOAN AGREEMENT

THIS **AMENDMENT NO. 1 TO LOAN AGREEMENT**, dated as of June 15, 2018 (this "***Amendment***"), is made between SI-BONE, INC., a Delaware corporation ("***Borrower***"), and BIOPHARMA CREDIT INVESTMENTS IV SUB LP, a Cayman Islands limited partnership ("***Lender***"), with respect to the Loan Agreement referred to below.

RECITALS

WHEREAS, Borrower and Lender are parties to the Loan Agreement, dated as of October 13, 2017 (the "***Loan Agreement***"); and

WHEREAS, Borrower has requested that Lender, and Lender has agreed to, amend **Section 5.2(a)(i)** of the Loan Agreement to extend the due date for annual financial statements for the fiscal year ending December 31, 2017 and amend the definition of "**Tranche B Term Amount**" in **Section 13.1** of the Loan Agreement.

NOW, THEREFORE, in consideration of the mutual agreements, provisions and covenants contained herein, the parties agree as follows:

SECTION 1. DEFINITIONS; INTERPRETATION.

(a) **Terms Defined in Loan Agreement**. All capitalized terms used in this Amendment (including in the recitals hereof) and not otherwise defined herein shall have the meanings assigned to them in the Loan Agreement.

(b) **Interpretation**. The rules of interpretation set forth in the first paragraph of **Section 13.1** of the Loan Agreement shall be applicable to this Amendment and are incorporated herein by this reference.

SECTION 2. AMENDMENT. Subject to **Section 3** of this Amendment:

(a) **Section 5.2(a)(i)** of the Loan Agreement is hereby amended and restated in its entirety as follows:

Annual Financial Statements. So long as Borrower is not a Public Reporting Company, (1) as soon as available, but in any event (x) for the fiscal year ending December 31, 2017, on or before December 31, 2018 and (y) beginning with the fiscal year ending December 31, 2018, within one hundred eighty (180) days after the end of each fiscal year of Borrower, a consolidated balance sheet of Borrower and its Subsidiaries as of the end of such fiscal year, and the related consolidated statements of income, cash flows and stockholders' equity for such fiscal year, setting forth in each case in comparative form the figures for the previous fiscal year, with such consolidated financial statements to be audited and accompanied by (A) a report and opinion of Borrower's independent certified public accounting firm of recognized national or regional standing (which report and opinion shall be prepared in accordance with Applicable Accounting Standards and shall not be subject to any qualification as to scope of audit, but which may be subject to a qualification as to "going concern"), stating that such financial statements fairly present, in all material respects, the consolidated financial condition, results of operations and cash flows of Borrower as of the dates and for the periods specified in accordance with Applicable Accounting Standards, and (B) (if and only if Borrower is required to comply with the internal control provisions pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 requiring an attestation report of such independent certified public accounting firm) an attestation report of such independent certified public accounting firm as to Borrower's internal controls pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 attesting that such internal controls meet the requirements of the Sarbanes-Oxley Act of 2002 and (2) as soon as available, but in any event within sixty (60) days after the end of each fiscal year of Borrower, beginning with the fiscal year ending December 31, 2017, an unaudited consolidated balance sheet of Borrower and its Subsidiaries as of the end of such fiscal year, and the related unaudited consolidated statements of

income, cash flows and stockholders' equity for such fiscal year, setting forth in each case in comparative form the figures for the previous fiscal year. Each of the foregoing consolidated financial statements shall be certified by a Responsible Officer as, to his or her knowledge, fairly presenting, in all material respects, the consolidated financial condition, results of operations and cash flows of Borrower and its Subsidiaries as of the dates and for the periods specified in accordance with Applicable Accounting Standards consistently applied;

(b) The definition of "Tranche **B Term Amount"** in **Section 13.1** of the Loan Agreement is hereby amended and restated in its entirety as follows:

"Tranche **B Loan Amount"** means, if Net Sales for the two fiscal quarters preceding the Tranche B Closing Date taken together are greater than or equal to $28,500,000, $10,000,000. For the avoidance of doubt, if Net Sales for the two fiscal quarters preceding the Tranche B Closing Date taken together are less than $28,500,000, the Tranche B Loan Amount equals zero.

SECTION 3. CONDITIONS OF EFFECTIVENESS. The effectiveness of **Section 2** of this Amendment shall be subject to the following conditions precedent:

(a) Borrower and Lender shall have duly executed and delivered this Amendment pursuant to **Section 11.5** of the Loan Agreement; and

(b) Borrower shall have paid or reimbursed Lender for its reasonable out-of-pocket costs and expenses incurred in connection with this Amendment pursuant to **Section 2.4** and **Section 11.2(c)(i)** of the Loan Agreement.

SECTION 4. REPRESENTATIONS AND WARRANTIES; REAFFIRMATION.

(a) Borrower hereby represents and warrants to each Lender as follows:

(i) Borrower has all requisite power and authority to enter into this Amendment and to carry out the transactions contemplated hereby.

(ii) This Amendment has been duly executed and delivered by Borrower and is the legally valid and binding obligation of Borrower, enforceable against Borrower in accordance with its respective terms, except as may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws relating to or limiting creditors' rights generally or by equitable principles relating to enforceability.

(iii) The execution, delivery and performance by Borrower of this Amendment have been duly authorized and do not (a) conflict with any of Borrower's Operating Documents, (b) contravene, conflict with, constitute a default under or violate any material Requirements of Law, (c) contravene, conflict or violate any applicable order, writ, judgment, injunction, decree, determination or award of any Governmental Authority by which Borrower or any of its Subsidiaries or any of its or their respective properties or assets may be bound, (d) require any action by, filing, registration, or qualification with, or Governmental Approval from, any Governmental Authority (except such Governmental Approvals which have already been obtained and are in full force and effect), (e) constitute a material breach of or a material default or an event of default under, or result in or permit the termination or acceleration of, any Material Contract by which Borrower is bound or (f) require any approval of stockholders, members or partners or any approval or consent of any Person except for such approvals or consents which will be obtained on or before the date hereof.

(b) Borrower hereby ratifies, confirms, reaffirms, and acknowledges its obligations under the Loan Documents to which it is a party and agrees that the Loan Documents remain in full force and effect, undiminished by this Amendment, except as expressly provided herein. By executing this Amendment, Borrower acknowledges that it has read, consulted with its attorneys regarding, and understands, this Amendment.

SECTION 5. CHOICE OF LAW, VENUE AND JURY TRIAL WAIVER.

THIS AMENDMENT SHALL BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO ANY PRINCIPLES OF CONFLICTS OF LAW THAT COULD REQUIRE THE APPLICATION OF THE LAW OF ANY OTHER JURISDICTION. Borrower and Lender submit to the exclusive jurisdiction of the courts of the State of New York sitting in New York County, and of the United States District Court of the Southern District of New York, and any appellate court from any thereof, and agrees that all claims in respect of any such action, litigation or proceeding may be heard and determined in such New York State court or, to the fullest extent permitted by Requirements of Law, in such Federal court; provided, however, that nothing in this Amendment shall be deemed to operate to preclude Lender from bringing suit or taking other legal action in any other jurisdiction to realize on the Collateral or any other security for the Obligations, or to enforce a judgment or other court order in favor of Lender. Borrower expressly submits and consents in advance to such jurisdiction in any action or suit commenced in any such court, and Borrower hereby waives any objection that it may have based upon lack of personal jurisdiction, improper venue, or forum non conveniens and hereby consents to the granting of such legal or equitable relief as is deemed appropriate by such court. Borrower hereby waives personal service of the summons, complaints, and other process issued in such action or suit and agrees that service of such summons, complaints, and other process may be made by registered or certified mail addressed to Borrower at the address set forth in (or otherwise provided in accordance with the terms of) **Section 9** of the Loan Agreement and that service so made shall be deemed completed upon the earlier to occur of Borrower's actual receipt thereof or three (3) Business Days after deposit in the U.S. mails, proper postage prepaid.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, EACH OF BORROWER AND LENDER WAIVES ITS RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AMENDMENT OR ANY TRANSACTION CONTEMPLATED HEREBY, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. EACH OF BORROWER AND LENDER (A) CERTIFIES THAT NO OTHER PARTY HERETO (AND NO AFFILIATE OF ANY OTHER PARTY AND NO DIRECTOR, OFFICER, EMPLOYEE, AGENT, TRUSTEE, REPRESENTATIVE, ATTORNEY, ACCOUNTANT, ADVISOR OR CONSULTANT OF ANY OTHER PARTY OR AFFILIATE) HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER, (B) ACKNOWLEDGES THAT THE FOREGOING MUTUAL WAIVERS AND CERTIFICATIONS ARE A MATERIAL INDUCEMENT FOR IT AND THE OTHER PARTIES HERETO TO ENTER INTO THIS AMENDMENT AND (C) HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.

SECTION 6. MISCELLANEOUS.

(a) **No Waiver.** Except as expressly stated herein, nothing contained herein shall be deemed to constitute a waiver of compliance with any term or condition contained in the Loan Agreement or any of the other Loan Documents or constitute a course of conduct or dealing among the parties. Except as expressly stated herein, Lender reserves all rights, privileges and remedies under the Loan Documents. Except as amended hereby, the Loan Agreement and other Loan Documents remain unmodified and in full force and effect. All references in the Loan Documents to the Loan Agreement shall be deemed to be references to the Loan Agreement as amended hereby.

(b) **Severability of Provisions.** In case any provision in or obligation hereunder shall be invalid, illegal or unenforceable in any jurisdiction, the validity, legality and enforceability of the remaining provisions or obligations, or of such provision or obligation in any other jurisdiction, shall not in any way be affected or impaired thereby.

(c) **Captions.** Section headings herein are included herein for convenience of reference only and shall not constitute a part hereof for any other purpose or be given any substantive effect.

(d) **Integration.** This Amendment constitutes a Loan Document and, together with the other Loan Documents, incorporates all negotiations of the parties hereto with respect to the subject matter hereof and is the final expression and agreement of the parties hereto with respect to the subject matter hereof.

(e) **Counterparts.** This Amendment may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Amendment. Executed counterparts delivered by facsimile or other electronic transmission (e.g., "PDF" or "TIF") shall be effective as delivery of a manually executed counterpart.

(f) **Controlling Provisions.** In the event of any inconsistencies between the provisions of this Amendment and the provisions of any other Loan Document, the provisions of this Amendment shall govern and prevail. Except as expressly modified by this Amendment, the Loan Documents shall not be modified and shall remain in full force and effect.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed as of the date first written above.

SI-BONE, INC.,
as Borrower

By: /s/ Laura Francis
Name: Laura Francis
Title: Chief Financial Officer

BIOPHARMA CREDIT INVESTMENTS IV SUB LP,
as Lender

By: Pharmakon Advisors, LP,
its Investment Manager

By: Pharmakon Management I, LLC,
its General Partner

By /s/ Pedro Gonzalez de Cosio
Name: Pedro Gonzalez de Cosio
Title: Managing Member

OFFICE LEASE AGREEMENT
CALIFORNIA

UNIVERSITY STATION

THIS OFFICE LEASE AGREEMENT (the "**Lease**") is made and entered into as of the 2/2/2018 day of January, 2018, by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**"), and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**"). Pursuant to the terms of this Lease, Landlord agrees to lease the Premises (hereinafter defined) to Tenant and Tenant agrees to lease the Premises from Landlord. The Lease includes the following exhibits and attachments: Exhibit A (Outline and Location of Premises), Exhibit A-1 (Development Site Plan), Exhibit B (Operating Expenses and Taxes), Exhibit C (Work Letter), Exhibit D (Building Rules and Regulations), Exhibit E (Statement of Tenant Regarding Lease Commencement), Exhibit F (Recorded Restrictions), Rider No. 1 (Extension Option Rider), Rider No. 2 (Fair Market Rental Rate), and Rider No. 3 (Options in General).

1. Basic Lease Information.

1.01 "**Building**" shall mean the building located at 471 El Camino Real, Santa Clara, California. "**Rentable Square Footage of the Building**" is deemed to be 55,480 square feet. The "**Development**" consists of the parcel(s) of real property commonly known as University Station and located in the City of Santa Clara, County of Santa Clara, State of California, as shown on the site plan attached hereto as Exhibit A-1 as such area may be expanded or reduced from time to time. Currently, the aggregate rentable square feet of the buildings located within the Development is approximately 213,093 square feet. "**Common Areas**" shall mean the portion of the Building and Development that are designated by Landlord for the common use of tenants and others.

1.02 "**Premises**" shall mean the area shown on Exhibit A to this Lease. The Premises are located on the first (1st) floor of the Building and known as Suite 100. The "**Rentable Square Footage of the Premises**" is deemed to be 21,848 square feet.

1.03 "**Base Rent**":

Period or Months of Term	Monthly Base Rent
1 – 9 *	$ 47,500.00
10 – 12	$ 54,620.00
13 – 24	$ 56,258.60
25 – 36	$ 57,946.36
37 – 48	$ 59,684.75
49 – 60	$ 61,475.29
61 – 72	$ 63,319.55
73 – 84	$ 65,219.14
85 – 86	$ 67,175.71

* Subject to Abatement Period, as defined in Section 3.02 below.

1.04 "**Tenant's Share**": The sum of Tenant's Common Area Share (as defined below) of Common Area Operating Expenses (as defined in Exhibit B attached hereto) and Taxes (as defined in Exhibit B attached hereto), and Tenant's Building Share (as defined below) of Building Operating Expenses (as defined in Exhibit B attached hereto) and Taxes.

"**Tenant's Common Area Share**": 10.25%; Tenant's percentage of Common Area Operating Expenses and Taxes is calculated by dividing the rentable square footage of the Premises by the rentable square footage of all buildings located in the Development.

"**Tenant's Building Share**": 39.38%; Tenant's percentage of Building Operating Expenses and Taxes is calculated by dividing the rentable square footage of the Premises by the rentable square footage of the Building.

1.05 "**Term**": A period of eighty-six (86) months. Subject to Section 2, the Term shall commence on April 1, 2018 (the "**Commencement Date**"), and shall expire on May 31, 2025 (the "**Expiration Date**"), subject to earlier termination, if applicable, in accordance with the terms of this Lease.

1.06 "**Security Deposit**": $199,570.56.

1.07 "**Broker**": Newmark Cornish & Carey (Todd Shaffer) representing Tenant; CBRE, Inc. (Ben Knight, Rob Shannon and Christian Marent) representing Landlord.

1.08 "**Permitted Use**": To the extent permitted pursuant to terms applicable Laws (as defined in Section 4 of the Lease) and matters of record (including as referenced in Exhibit F attached hereto), general office, research and development, employee training, surgeon education and training, engineering, warehousing and administrative support and sales and such other activities as are consistent with a mature medical device company with commercially marketed products and an active R&D pipeline. Tenant shall be responsible for securing from the City of Santa Clara, California, any conditional use permit which may be required with respect to Tenant's Permitted Use.

1.09 "**Notice Addresses**":

Landlord:
c/o Bixby Land Company
1501 Quail, Suite 230
Newport Beach, California 92660
Attention: Property Manager, University Station

Lock box address for payment of Rent:
Bixby SPE Finance 11, LLC
P.O. Box 51239
Los Angeles, California 90051-5539

Tenant:
Prior to Commencement:
SI-BONE, Inc.
3055 Olin Ave., Ste 2200
San Jose, California 95128
Attention: General Counsel

After to Commencement:
SI-BONE, Inc.
471 El Camino Real, Suite 100
Santa Clara, California 95050
Attention: Director of Operations

1.10 "**Landlord Work**" means the work, if any, that Landlord is obligated to perform in the Premises pursuant to a separate work letter agreement (the "**Work Letter**") attached to this Lease as Exhibit C.

1.11 "**Parking**": Subject to Section 29 below, Tenant shall have non-exclusive access to seventy-eight (78) surface parking spaces in common with other tenants and occupants of the Development. All parking rights granted to Tenant hereunder may be utilized by Tenant's agents, licensees, assignees, subtenants, customers, employees, contractors, suppliers and invitees ("**Tenant's Parties**" or "**Tenant Parties**") on the same basis as they are available to Tenant (subject to the terms of Exhibit D attached hereto).

1.12 "**Guarantor**": None.

2. Commencement Date; Possession.

2.01 If Landlord is required to perform Landlord Work (defined in the Work Letter) prior to the Commencement Date: (a) the date set forth in Section 1.05 above as the Commencement Date shall instead be defined as the "**Target Commencement Date**"; (b) the actual Commencement Date shall be the date on which the Landlord Work is Substantially Complete (as defined in the Work Letter); and (c) the Expiration Date will be the last day of the Term as determined based upon the actual Commencement Date. Landlord's failure to Substantially Complete the Landlord Work by the Target Commencement Date shall not be a default by Landlord or otherwise render Landlord liable for damages. If Landlord is delayed in the performance of the Landlord Work as a result of a Tenant Delay (as defined in the Work Letter), the Landlord Work shall be deemed to be Substantially Complete on the date that Landlord could reasonably have been expected to Substantially Complete the Landlord Work absent any Tenant Delay. It is further understood and agreed that if for any reason the Commencement Date occurs

pursuant to the terms of this Lease on a day other than the first (1st) day of a calendar month, the period commencing on the Commencement Date and ending on the last day of the calendar month in which the Commencement Date occurs shall be an initial stub period which shall be added to the initial Term and Tenant shall pay all Rent (defined in Section 3 below) and other charges with respect to such stub period (on a prorated basis as referenced in Section 3 below) at the same rate applicable to the first (1st) full calendar month of this Lease. Following such stub period and commencing as of the first (1st) day of the first (1st) full calendar month following the month in which the Commencement Date occurs, Tenant shall commence the payment of Rent and other charges payable hereunder as if the initial Term had actually commenced on such date. The use of the stub period described above is intended to provide for ease of administration and calculation of all amounts owed hereunder, it being agreed that all rental adjustments will be determined as of the first (1st) day of a calendar month and the Term of the Lease will end as of the last day of a calendar month (unless earlier terminated pursuant to the terms hereof).

2.02 Subject to Landlord performing the required Landlord Work, the Premises are accepted by Tenant in "AS-IS" condition and configuration without any representations or warranties by Landlord. Landlord shall not be liable for any failure to deliver possession of the Premises or any other space due to the holdover or unlawful possession of such space by any party. In such event, the Commencement Date for such space shall be postponed until the date Landlord delivers possession of the Premises to Tenant free from occupancy by any party.

2.03 Within thirty (30) days after the Commencement Date, Tenant shall return an executed Statement of Tenant Regarding Lease Commencement in the form attached hereto as Exhibit E. The Statement of Tenant Regarding Lease Commencement shall be binding upon Tenant unless Tenant objects thereto in writing within such 30-day period.

2.04 So long as (i) this Lease has been fully executed and delivered by the parties hereto, (ii) Landlord has received the first (1st) monthly installment of Base Rent pursuant to Section 3 below and the Security Deposit (to be maintained pursuant to the terms of Section 5 below), (iii) Landlord Work is Substantially Complete, and (iv) Landlord has received insurance certificates evidencing that Tenant is carrying the insurance required to be carried by Tenant pursuant to the terms of Section 15 below, Tenant shall have the right to access the Premises on the date that is two (2) weeks prior to the actual Commencement Date, for the purpose of the installation of Tenant's furniture, fixtures and equipment therein (the "**Early Access Period**"). During such Early Access Period, all of the terms and conditions of this Lease shall apply, including, without limitation, Tenant's obligation to pay to Landlord all sums and charges required to be paid by Tenant under this Lease including, without limitation, charges in excess of the Building standard level of services supplied by Landlord pursuant to the terms of Section 8 below, but excluding Base Rent, Tenant's Common Area Share and Tenant's Building Share. Further, any work to be performed by Tenant or its contractors within the Premises during such Early Access Period shall be performed in strict accordance with the terms of Section 10 of this Lease, including obtaining Landlord's prior approval of plans for any cabling, wiring or other work which may affect systems or structure or be visible from outside the Premises and causing all contractors to comply with the Development's construction rules and regulations. Tenant shall have the use of the parking passes during the Early Access Period. During such Early Access Period, Tenant shall not be obligated to pay Base Rent, Tenant's Common Area Share or Tenant's Building Share (as such terms are defined in Exhibit B attached hereto) for the Premises so accessed by Tenant until the occurrence of the Commencement Date (and no such Base Rent, Tenant's Common Area Share or Tenant's Building Share shall accrue during such Early Access Period).

3. Rent.

3.01 Upon execution of this Lease, Tenant shall pay to Landlord the sum of $47,500.00 constituting Rent due and payable by Tenant for the first full calendar month of the Term for which Rent is payable hereunder. Tenant shall pay Landlord, without any setoff or deduction, all Base Rent and Additional Rent for the Term (collectively referred to as "**Rent**") when due. "**Additional Rent**" means all sums (exclusive of Base Rent) that Tenant is required to pay Landlord under this Lease, including, without limitation, payments for insurance, repairs and parking lot maintenance/repair and Tenant's Common Area Share and Tenant's Building Share of Taxes and Operating Expenses. Tenant shall pay and be liable for all rental, sales and use taxes (but excluding income taxes), if any, imposed upon or measured by Rent. Base Rent and recurring monthly charges of estimated Additional Rent shall be due and payable in advance on the first day of each calendar month without notice or demand. All other items of Rent shall be due and payable by Tenant on or before thirty (30) days after billing by Landlord. All Rent payable by Tenant hereunder shall be paid to Landlord in lawful money of the United States of America, by check or wire transfer made payable to the entity constituting Landlord hereunder and sent to the lock box designated in Section 1.09 of the Basic Lease Information, or to such other location or address as Landlord

may designate from time to time. Tenant shall pay Landlord an administration fee equal to five percent (5%) of all Rent past due beyond any applicable grace period. In addition, past due Rent shall accrue interest at twelve percent (12%) per annum (or the maximum rate legally permissible, whichever is less). Rent for any partial month during the Term shall be prorated. No endorsement or statement on a check or letter accompanying payment shall be considered an accord and satisfaction. Tenant's covenant to pay Rent is independent of every other covenant in this Lease.

3.02 Notwithstanding anything to the contrary contained herein and provided that no Default by Tenant occurs hereunder, Landlord hereby agrees that Tenant shall not be required to pay monthly Base Rent for the first (1st) and second (2nd) full months of the initial Term (the "**Abatement Period**"). During the Abatement Period, Tenant shall still be responsible for the payment of all of its other monetary obligations under this Lease. In the event of a Default by Tenant under the terms of this Lease that results in termination of this Lease in accordance with the provisions of Section 19 hereof, then as a part of the recovery set forth in Section 20 of this Lease, Landlord shall be entitled to the recovery of the monthly Base Rent that was abated under the provisions of this Section 3.

3.03 In accordance with the Section 1.03 above, Tenant shall be obligated to pay Base Rent with respect to only 19,000 rentable square feet of the Premises for the first (1st) nine (9) months of the initial Term (the "**Phase-In Period**") at the rate of $47,500.00 per month (calculated at the rate of $2.50 per rentable square foot per month). Upon the expiration of the Phase-In Period, and for the remainder of the Term, Tenant shall be obligated to pay Base Rent with respect to the entire rentable square footage of the Premises at the rates listed in Section 1.03 above. During the Phase-In Period, Tenant shall remain liable for the full payment of all of its other monetary obligations under this Lease, and Tenant's Common Area Share and Tenant's Building Share shall continue to be calculated as specified in Section 1.04 above, using the entire rentable square footage of the Premises.

4. Compliance with Laws; Use. The Premises shall be used for the Permitted Use and for no other use whatsoever. Tenant shall comply with all statutes, codes, ordinances, orders, rules and regulations of any municipal or governmental entity (collectively, "**Laws**"), regarding the operation of Tenant's business and the use, condition, configuration and occupancy of the Premises. Tenant shall comply with the Rules and Regulations of the Development attached hereto as Exhibit D and such other reasonable rules and regulations adopted by Landlord from time to time. In addition, Tenant shall comply with all covenants, conditions and restrictions in effect from time to time with respect to the Development, including, as listed in Exhibit F attached hereto. Furthermore, as part of its obligations hereunder, from and after the Commencement Date, Tenant shall, at its sole cost and expense, observe and comply with the provisions of Title III of the Americans with Disabilities Act of 1990, as amended and any regulations promulgated pursuant thereto (collectively, the "**ADA**"), as it pertains to Tenant's use, occupancy, improvement and alteration of the Premises. Tenant shall not use or allow the Premises to be used for any improper, immoral, unlawful or reasonably objectionable purpose, provided that Landlord understands and acknowledges that Tenant's activities sometimes include simulated surgical procedures using human tissue and/or portions of human cadavers. Provided Tenant conducts such activities in a discreet and respectful manner that does not disturb other Building tenants, and in compliance with all applicable laws, rules, regulations, codes and the like, Landlord acknowledges that such activities are not reasonably objectionable. Tenant shall not do or permit to be done anything which will obstruct or interfere with the rights of other tenants or occupants of the Development, or injure or annoy them. Tenant shall not cause, maintain or permit any nuisance in, on or about the Premises or the Development, nor commit or suffer to be committed any waste in, on or about the Premises.

5. Security Deposit. The Security Deposit shall be delivered to Landlord upon the execution of this Lease by Tenant and held by Landlord without liability for interest (unless required by Laws) as security for the performance of Tenant's obligations. The Security Deposit is not an advance payment of Rent or a measure of damages. Landlord may use all or a portion of the Security Deposit to satisfy past due Rent, to cure any Default (defined in Section 18 below) by Tenant, or to compensate Landlord for any other loss or damage Landlord may suffer by reason of Tenant's Default. If Landlord reasonably uses any portion of the Security Deposit, Tenant shall on demand restore the Security Deposit to its original amount, and Tenant's failure to do so shall be a Default under this Lease. Landlord shall return any unapplied portion of the Security Deposit to Tenant within forty-five (45) days after the later to occur of: (a) payment of the final Rent due from Tenant; or (b) the later to occur of the Expiration Date or the date Tenant surrenders the Premises to Landlord in compliance with Section 24 below. Landlord shall not be required to keep the Security Deposit separate from its other accounts. Tenant hereby waives the provisions of Section 1950.7 of the California Civil Code, or any successor Laws now or hereafter in effect.

6. Tenant's Use of Common Areas. During the Term of this Lease, Tenant shall have the nonexclusive right to use in common with Landlord and all persons, firms and corporations conducting business in the Development and their respective customers, guests, licensees, invitees, subtenants, employees and agents (collectively, "**Development Occupants**"), subject to the terms of this Lease, the Rules and Regulations attached hereto as Exhibit D and all covenants, conditions and restrictions now or hereafter affecting the Development, including the covenants, conditions and restrictions set forth in Exhibit F attached hereto (collectively, the "**Common Areas**"): the parking facilities of the Development which serve the Building, loading and unloading areas, trash areas, roadways, sidewalks, walkways, parkways, driveways, landscaped areas, and similar areas and facilities situated within the Development and appurtenant to the Building which are not reserved for the exclusive use of any Development Occupants. Subject to Tenant's obligation to pay Tenant's Common Area Share of the cost thereof through Common Area Operating Expenses and Taxes, Landlord shall maintain the Common Areas (including, without limitation, the truck loading and parking areas and trash removal) in a clean, orderly, lighted and reasonably attractive condition comparable with similar projects in the vicinity with, subject to the remainder of this Lease, continuous ingress and egress to and from public roadways to the Premises and the parking areas appurtenant to the Premises.

7. Landlord's Reservation of Rights. Provided Tenant's use of and access to the Premises and parking to be provided to Tenant under this Lease is not interfered with in an unreasonable manner, Landlord reserves for itself and for all other owner(s) and operator(s) of the Common Areas and the balance of the Development, the right from time to time, with at least one business day of notice (except in emergencies) to: (i) install, use, maintain, repair, replace and relocate pipes, ducts, conduits, wires and appurtenant meters and equipment above the ceiling surfaces, below the floor surfaces, within the walls and in the central core areas of the Building; (ii) make changes to the design and layout of the Development, including, without limitation, changes to buildings, driveways, entrances, loading and unloading areas, direction of traffic, landscaped areas and walkways, and, subject to the parking provisions contained in Section 29 below and Exhibit D attached hereto, parking spaces and parking areas; and (iii) use or close temporarily the Common Areas and/or other portions of the Development while engaged in making improvements, repairs or alterations to the Building, the Development, or any portion thereof.

8. Operating Expenses and Taxes.

8.01 Throughout the Term of this Lease, commencing on the Commencement Date, Tenant agrees to pay Landlord as Additional Rent in accordance with the terms of this Section 8, Tenant's Common Area Share of the Common Area Operating Expenses and Tenant's Building Share of the Building Operating Expenses and Taxes and all costs and expenses for the operation, maintenance, repair, and replacement of the Development including, without limitation, those costs and expenses listed on Exhibit B attached hereto.

8.02 Prior to the Commencement Date and on or about April 15th of each subsequent calendar year during the Term of this Lease, Landlord will endeavor to deliver to Tenant a statement ("**Estimate Statement**") wherein Landlord will reasonably estimate both the Operating Expenses and Taxes and Tenant's Share thereof (the "Monthly **Operating Expense Charge**") for the then current calendar year. Tenant agrees to pay Landlord, as Additional Rent, Tenant's estimated Monthly Operating Expense Charge each month thereafter, beginning with the next installment of rent due, until such time as Landlord issues a revised Estimate Statement or the Estimate Statement for the succeeding calendar year; except that, concurrently with the regular monthly rent payment next due following the receipt of each such Estimate Statement, Tenant agrees to pay Landlord an amount equal to one (1) monthly installment of Tenant's estimated Monthly Operating Expense Charge multiplied by the number of months from January, in the current calendar year, to the month of such rent payment next due, all months inclusive (less any applicable Operating Expenses and Taxes already paid). If at any time during the Term of this Lease, but not more often than quarterly, Landlord reasonably determines that Tenant's Share of Operating Expenses and Taxes for the current calendar year will be greater than the amount set forth in the then current Estimate Statement, Landlord may issue a revised Estimate Statement and Tenant agrees to pay Landlord, with the next month's rent payment due following receipt of the revised Estimate Statement, the difference between the amount owed by Tenant under such revised Estimate Statement and the amount owed by Tenant under the original Estimate Statement for the portion of the then current calendar year which has expired ("**Makeup Payment**"). Thereafter, Tenant agrees to pay Tenant's Monthly Operating Expense Charge based on such revised Estimate Statement until Tenant receives the next calendar year's Estimate Statement or a new revised Estimate Statement for the current calendar year.

8.03 By April 15th of each calendar year during the Term of this Lease, Landlord will also endeavor to deliver to Tenant a statement ("**Actual Statement**") which states Tenant's Share of the actual Operating Expenses and Taxes for the preceding calendar year. If the Actual Statement reveals that Tenant's Share of the actual Operating Expenses and Taxes is more than the total Additional Rent paid by Tenant for Operating Expenses and Taxes on account of the preceding calendar year, Tenant agrees to pay Landlord the difference in a lump sum within thirty (30) days of receipt of the Actual Statement. If the Actual Statement reveals that Tenant's Share of the actual Operating Expenses and Taxes is less than the Additional Rent paid by Tenant for Operating Expenses and Taxes on account of the preceding calendar year, Landlord will credit any overpayment toward the next monthly installment(s) of Tenant's Share of the Operating Expenses and Taxes due under this Lease or, in the event this Lease terminates before Tenant is able to receive such credit, Landlord will pay the amount of such overpayment to Tenant within thirty (30) days of the date Landlord finalizes the Actual Statement.

8.04 Any delay or failure by Landlord in delivering any Estimate Statement or Actual Statement pursuant to this Section 8 will not constitute a waiver of its right to require an increase in rent nor will it relieve Tenant of its obligations pursuant to this Section 8, except that Tenant will not be obligated to make any payments based on such Estimate Statement or Actual Statement until thirty (30) days after receipt of such Estimate Statement or Actual Statement. If Tenant does not object to any Estimate Statement or Actual Statement within ninety (90) days after Tenant receives any such statement, such statement will be deemed final and binding on Tenant. Even though the Term has expired and Tenant has vacated the Premises, when the final determination is made of Tenant's Share of the actual Operating Expenses and Taxes for the year in which this Lease terminates, Tenant agrees to promptly pay any increase due over the estimated expenses paid and, conversely, any overpayment made in the event said expenses decrease shall promptly be rebated by Landlord to Tenant. Such obligation will be a continuing one which will survive the expiration or termination of this Lease. Prior to the expiration or sooner termination of the Lease Term and Landlord's acceptance of Tenant's surrender of the Premises, Landlord will have the right to estimate the actual Operating Expenses and Taxes for the then current Lease Year and to collect from Tenant prior to Tenant's surrender of the Premises, Tenant's Share of any excess of such actual Operating Expenses and Taxes over the estimated Operating Expenses and Taxes paid by Tenant in such Lease Year.

8.05 Notwithstanding anything to the contrary in this Lease, Landlord shall have the right, from time to time, to equitably allocate some or all of the Operating Expenses and Taxes among different tenants and/or different buildings of the Development (the "**Cost Pools**"). Such Cost Pools may include, without limitation, office space tenants and retail space tenants in the Development and may be modified to take into account the addition of any additional buildings within the Development. Accordingly, in the event of such allocation into Cost Pools, Tenant's Share, Tenant's Common Area Share and Tenant's Building Share shall be appropriately adjusted to reflect such allocation.

8.06 Landlord shall provide the following services ("**Landlord's Services**") on all days (unless otherwise stated below) during the Lease Term.

(a) Subject to limitations imposed by all governmental rules, regulations and guidelines applicable thereto, Landlord shall provide heating and air conditioning ("**HVAC**") for normal comfort for normal office use in the Premises during Building Hours (defined below). As used in this Lease, "**Building Hours**" are from 8:00 a.m. to 6:00 p.m. Monday through Friday, except for the date of observation of New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day (collectively, the "**Holidays**"). If Tenant desires to use HVAC during non-Building Hours, Tenant shall give Landlord such prior notice, if any, as Landlord shall from time to time establish as appropriate, of Tenant's desired use in order to supply such utilities, and Landlord shall supply such utilities to Tenant at such hourly cost to Tenant (which shall be treated as Additional Rent) as Landlord shall from time to time establish. The current hourly cost, which is subject to increase in Landlord's reasonable discretion, is Thirty-Five Dollars ($35.00). Notwithstanding the foregoing, pursuant to and in accordance with the terms of this Section 8.06, Tenant shall be entitled to the continued use and maintenance of the existing supplemental HVAC equipment within the Premises (collectively, the "**Supplemental HVAC Equipment**"). Tenant's installation, use and maintenance of the Supplemental HVAC Equipment shall be at Tenant's sole cost and expense and shall be installed in a location approved by Landlord, which approval shall not be unreasonably withheld, and Tenant shall at all times maintain the Supplemental HVAC Equipment in good condition and repair. The Supplemental HVAC Equipment shall be separately metered at Tenant's sole cost and expense (including condensor water and electricity, as applicable), and all costs and utility charges relating to the installation, operation, maintenance and repair of such Supplemental HVAC Equipment shall be paid for by Tenant. If Tenant elects to install any additional supplemental HVAC equipment pursuant to the terms of this Section 8.06, Tenant shall install and operate the additional supplemental HVAC equipment in compliance with applicable laws and shall at all times maintain the additional supplemental HVAC equipment, in good condition and repair. If Tenant desires to relocate the Supplemental HVAC Equipment, Tenant shall obtain Landlord's prior written

approval of the new location, and any costs incurred due to the relocation shall be Tenant's sole responsibility. Upon the expiration or earlier termination of this Lease, Tenant shall surrender the Supplemental HVAC Equipment to Landlord in good condition, normal wear and tear excepted, or, at Landlord's option, Tenant shall remove the Supplemental HVAC Equipment and repair any damage to the Premises and/or the Building caused by such removal.

(b) Except as otherwise approved in writing by Landlord: (1) Landlord shall provide adequate electrical wiring and facilities for connection to Tenant's lighting fixtures and incidental use equipment, provided that (i) the connected electrical load of the incidental use equipment does not exceed an average of 2.5 watts per rentable square foot of the Premises and the electricity so furnished for incidental use equipment will be at a nominal one hundred twenty (120) volts and no electrical circuit for the supply of such incidental use equipment will require a current capacity exceeding twenty (20) amperes, and (ii) the connected electrical load of Tenant's lighting fixtures does not exceed an average of 1.5 watts per rentable square foot of the Premises and the electricity so furnished for Tenant's lighting will be at a nominal one hundred twenty (120) volts, which electrical usage shall be subject to applicable laws and regulations, including Title 24. Tenant will design Tenant's electrical system serving any equipment producing nonlinear electrical loads to accommodate such nonlinear electrical loads, including, but not limited to, oversizing neutral conductors, derating transformers and/or providing power-line filters; (3) engineering plans shall include a calculation of Tenant's fully connected electrical design load with and without demand factors and shall indicate the number of watts of unmetered and submetered loads; and (4) Tenant shall bear the cost of replacement of lamps, starters and ballasts for non-Building standard lighting fixtures within the Premises.

(c) Landlord shall provide city water from the regular Building outlets for drinking, lavatory and toilet purposes in the Building Common Areas.

(d) (Intentionally Omitted)

(e) Landlord shall provide nonexclusive, non-attended automatic passenger elevator service during the Building Hours and shall have one elevator available at all other times.

(f) Landlord shall provide nonexclusive freight elevator service subject to scheduling by Landlord.

(g) Except as otherwise provided in this Lease and subject to the Rules and Regulations, Tenant shall have full access and use of the Premises, the Building and the Common Areas (including, without limitation, the parking lot) twenty-four (24) hours a day, seven (7) days a week, fifty-two (52) weeks a year, subject to Landlord's reasonable security requirements, any construction in the Development and/or closures due to emergency.

Tenant shall cooperate fully with Landlord at all times and abide by all regulations and requirements that Landlord may reasonably prescribe for the proper functioning and protection of the HVAC, electrical, mechanical and plumbing systems.

8.07 Tenant agrees to contract directly for and pay for any utilities other than Landlord's Services ("**Tenant's Utilities**"). All expenses incurred by Landlord for Landlord's Services shall be included as part of Building Operating Expenses. Landlord will not be liable to Tenant for any failure to furnish any of the foregoing utilities and services if such failure is caused by all or any of the following: (i) accident, breakage or repairs; (ii) strikes, lockouts or other labor disturbance or labor dispute of any character; (iii) governmental regulation, moratorium or other governmental action or inaction; (iv) inability despite the exercise of reasonable diligence to obtain electricity, water or fuel; or (v) any other cause beyond Landlord's reasonable control. In addition, in the event of any stoppage or interruption of services or utilities, Tenant shall not be entitled to any abatement or reduction of rent and no eviction of Tenant will result from such failure and Tenant will not be relieved from the performance of any covenant or agreement in this Lease because of such failure.

8.08 Tenant shall not, without Landlord's prior written consent, use heat-generating machines, machines other than normal fractional horsepower office machines, or equipment or lighting other than Building standard lights in the Premises outside of Tenant's lab space which is intended to be served by separate HVAC systems, which may affect the temperature otherwise maintained by the air conditioning system or increase the water normally furnished for the Premises by Landlord pursuant to the terms of Section 8.06 of this Lease. If such

consent is given, Landlord shall have the right to install supplementary air conditioning units or other facilities in the Premises, including supplementary or additional metering devices, and the cost thereof, including the cost of installation, operation and maintenance, increased wear and tear on existing equipment and other similar charges, shall be paid by Tenant to Landlord upon billing by Landlord. All costs incurred during the term for Tenant's HVAC, including, without limitation, electricity, maintenance and repair, shall be paid by Tenant to Landlord upon demand as Additional Rent. If Tenant uses water, electricity, heat or air conditioning in excess of that supplied by Landlord pursuant to Section 8.06 of this Lease, Tenant shall pay to Landlord, upon billing, the cost of such excess consumption, the cost of the installation, operation, and maintenance of equipment which is installed in order to supply such excess consumption, and the cost of the increased wear and tear on existing equipment caused by such excess consumption; and Landlord may install devices to separately meter any increased use and in such event Tenant shall pay the increased cost directly to Landlord, on demand, at the rates charged by the public utility company furnishing the same, including the cost of such additional metering devices. Tenant's use of electricity shall never exceed the capacity of the feeders to the Development or the risers or wiring installation, and Tenant shall not install or use or permit the installation or use of any computer or electronic data processing equipment in the Premises, without the prior written consent of Landlord.

8.09 Tenant agrees that Landlord shall not be liable for damages, by abatement of Rent or otherwise, for failure to furnish or delay in furnishing any service (including telephone and telecommunication services), or for any diminution in the quality or quantity thereof, when such failure or delay or diminution is occasioned, in whole or in part, by breakage, repairs, replacements, or improvements, by any strike, lockout or other labor trouble, by inability to secure electricity, gas, water, or other fuel at the Building or Development after reasonable effort to do so, by any riot or other dangerous condition, emergency, accident or casualty whatsoever, by act or default of Tenant or other parties, or by any other cause. Furthermore, Landlord shall not be liable under any circumstances for a loss of, or injury to, property or for injury to, or interference with, Tenant's business, including, without limitation, loss of profits, however occurring, through or in connection with or incidental to a failure to furnish any of the services or utilities as set forth herein. Landlord may comply with voluntary controls or guidelines promulgated by any governmental entity relating to the use or conservation of energy, water, gas, light or electricity or the reduction of automobile or other emissions without creating any liability of Landlord to Tenant under this Lease. In no event shall any failure to furnish, delay in furnishing, unavailability or diminution in quality or quantity of any such utility or other services or interference with Tenant's business operations as a result of any such occurrence constitute an actual or constructive eviction of Tenant or a breach of an implied warranty by Landlord, provided Landlord is making commercially reasonable efforts to restore such failure, delay, unavailability or diminution.

8.10 Landlord shall not be obligated to provide any janitorial services or window washing services to the Premises or replace any light bulbs, lamps, starters and ballasts for lighting fixtures within the Premises. Tenant shall be solely responsible, at Tenant's sole cost and expense, for (i) performing all janitorial services (including, without limitation, window washing services), trash removal and other cleaning of the Premises, and (ii) replacement of all light bulbs, lamps, starters and ballasts for lighting fixtures within the Premises, all as appropriate to maintain the Premises in a first-class manner consistent with the first-class nature of the Building and Development. Such services to be provided by Tenant shall be performed by contractors and pursuant to service contracts approved by Landlord, which approval shall not be unreasonably withheld. Landlord shall have the right to inspect the Premises upon reasonable notice to Tenant and to require Tenant to provide additional cleaning, if necessary. In the event Tenant shall fail to provide any of the services described in this Section 8.10 to be performed by Tenant within five (5) days after notice from Landlord, which notice shall not be required in the event of an emergency, Landlord shall have the right to provide such services and any charge or cost incurred by Landlord in connection therewith shall be deemed Additional Rent due and payable by Tenant upon receipt by Tenant of a written statement of cost from Landlord.

8.11 Tenant acknowledges that Landlord and/or Tenant may from time to time be requested or required to obtain, report and/or disclose certain energy consumption information with regard to the Premises, which may include, without limitation, benchmarking data for the U.S. Environmental Protection Agency's ENERGY STAR® Portfolio Manager and information relating to compliance with "green building" initiatives, including, if applicable, the Leadership in Energy & Environmental Design (LEED) certification program. Tenant shall throughout the Term of this Lease, comply with all Federal, State or local laws, rules and regulations relating to consumption of utilities, energy or energy efficiency (as they may be in enacted or in effect from time to time, "**Energy Regulations**"), and Tenant shall, upon request by Landlord or Landlord's lender, deliver and/or disclose such information regarding the consumption of utilities at the Premises as may be required to comply with applicable Energy Regulations. Further, Tenant authorizes Landlord to disclose such information and data regarding the Premises as may be requested or required from time to time to comply with Energy Regulations.

9. Leasehold Improvements. All improvements in and to the Premises, including any Alterations (defined below) (collectively, "**Leasehold Improvements**") shall remain upon the Premises at the end of the Term without compensation to Tenant. Landlord, however, by written notice to Tenant prior to the Expiration Date, may require Tenant, at its expense, to remove any electronic, phone and data cabling and related equipment (collectively, "**Cable**") installed by or for the benefit of Tenant and/or any Landlord Work or Alterations that, in Landlord's reasonable judgment, are not standard office improvements and are of a nature that would require material removal and repair costs (collectively referred to as "**Required Removables**"), unless Tenant requests and obtains Landlord's written agreement, at the time of Landlord's approval of the Leasehold Improvements to be made by Tenant, that such Leasehold Improvements need not be removed.

10. Repairs and Alterations.

10.01 Tenant shall periodically inspect the Premises to identify any conditions that are dangerous or in need of maintenance or repair and shall promptly provide Landlord with notice of any such conditions. Tenant shall, at its sole cost and expense, promptly perform all maintenance and repairs to the Premises that are not Landlord's express responsibility under this Lease, and shall keep the Premises in good condition and repair, reasonable wear and tear excepted. Tenant shall perform repairs in conformance with any and all applicable rules and regulations of any federal, state, county or municipal code or ordinance (including, California Energy Code, Title 24) and pursuant to a valid building permit, issued by the city in which the Building is located, and in conformance with Landlord's construction rules and regulations. If Tenant fails to make any repairs to the Premises for more than fifteen (15) days after notice from Landlord (although notice shall not be required in an emergency), Landlord may make the repairs, and Tenant shall pay the reasonable cost of the repairs, together with an administrative charge in an amount equal to ten percent (10%) of the cost of the repairs. Landlord shall perform all maintenance and repairs upon the: (a) structural elements of the Building; (b) mechanical, electrical, plumbing and fire/life safety systems serving the Building in general; (c) Common Areas; (d) roof of the Building; (e) exterior windows of the Building; and (f) elevators serving the Building. Tenant hereby waives any and all rights under and benefits of subsection 1 of Section 1932, and Sections 1941 and 1942 of the California Civil Code, or any similar or successor Laws now or hereinafter in effect.

10.02 Tenant shall not make alterations, repairs, additions or improvements or install any cable (collectively referred to as "**Alterations**") without first obtaining the written consent of Landlord in each instance, which consent Landlord shall not unreasonably delay, withhold or condition unless the same affects the structural integrity of the Building or would likely have an adverse effect on other Building tenants. In order to obtain such approvals, Tenant shall furnish Landlord with plans and specifications; names of contractors acceptable to Landlord; required permits and approvals; evidence of contractor's and subcontractor's insurance in amounts reasonably required by Landlord and naming Landlord as an additional insured; and any security for performance in amounts reasonably required by Landlord. Tenant shall construct such Alterations in conformance with any and all applicable rules and regulations of any federal, state, county or municipal code or ordinance (including, California Energy Code, Title 24) and pursuant to a valid building permit, issued by the city in which the Building is located, and in conformance with Landlord's construction rules and regulations. Tenant shall reimburse Landlord for any sums paid by Landlord for third party examination of Tenant's plans for Alterations. In addition, Tenant shall pay Landlord a fee for Landlord's oversight and coordination of any Alterations equal to three percent (3%) of the cost of the Alterations. Upon completion, Tenant shall furnish "as-built" plans for Alterations, completion affidavits and full and final waivers of lien. Notwithstanding the foregoing, Tenant shall have the right, without Landlord's consent, but upon three (3) business days prior written notice to Landlord, to make strictly cosmetic, non-structural additions and alterations to the Premises that do not (i) involve the expenditure of more than $25,000.00 in the aggregate in any twelve (12) month period during the initial Term, (ii) affect the appearance of the Building or any areas outside the Premises, (iii) affect or impact in any way the systems or structure of the Building, or (iv) require the issuance of a building permit.

11. Entry by Landlord. Landlord may enter the Premises to inspect or, within nine months prior to expiration of this Lease, show the Premises to other potential tenants, to clean and make repairs, alterations or additions and to perform or facilitate maintenance, repairs, alterations or additions to any portion of the Building. Except in emergencies or to provide Building services, Landlord shall provide Tenant with reasonable prior verbal notice of entry. Entry by Landlord shall not constitute a constructive eviction or entitle Tenant to an abatement or reduction of Rent.

12. Assignment and Subletting.

12.01 Tenant shall not assign, sublease, transfer or encumber any interest in this Lease or allow any third party to use any portion of the Premises (collectively or individually, a "**Transfer**") without the prior written consent of Landlord, which such consent shall not be unreasonably delayed, withheld or conditioned if Landlord does not exercise its recapture rights. Any attempted Transfer in violation of this Section shall, at Landlord's option, be void. Within fifteen (15) business days after receipt of executed copies of the transfer documentation and such other information as Landlord may request, Landlord shall either: (a) consent to the Transfer by execution of a consent agreement in a form reasonably designated by Landlord; (b) refuse to consent to the Transfer; (c) recapture the portion of the Premises that Tenant is proposing to Transfer; or (d) elect to increase the Base Rent payable hereunder with respect to the portion of the Premises to be assigned or sublet to the Market Rent, as set forth below. If Landlord exercises its right to recapture, the Lease shall automatically be amended to delete the applicable portion of the Premises effective on the proposed effective date of the Transfer. "**Market Rent**" shall mean the monthly amount per square foot in the Premises that a willing, non-equity new tenant would pay and a willing landlord would accept at arm's length for space in a comparable office park, with comparable tenant improvements, in a comparable location, giving appropriate consideration to monthly rental rates per square foot, the presence or absence of rent escalation clauses such as operating expense and tax pass-throughs, length of lease term, size and location of premises being leased and other generally applicable terms and conditions of tenancy for a similar office park.

12.02 Landlord and Tenant hereby acknowledge that Landlord's disapproval of any proposed Transfer pursuant to this Section will not be deemed unreasonably withheld if based upon any reasonable factor, including, without limitation, any or all of the following factors: (i) the portion of the Premises to be sublet or assigned is irregular in shape with inadequate means of ingress and egress; (ii) the use of the Premises by the transferee (A) is not permitted by the use provisions in Section 4 hereof, (B) violates any exclusive use granted by Landlord to another tenant in the Development, or (C) otherwise poses a risk of increased liability to Landlord; (iii) the Transfer would likely result in a significant and inappropriate increase in the use of the parking areas or Common Areas by the transferee's employees or visitors, and/or significantly increase the demand upon utilities and services to be provided by Landlord to the Premises; (iv) the Transferee does not have the financial capability to fulfill the obligations imposed by the Transfer and this Lease; (v) the transferee is not in Landlord's reasonable opinion consistent with Landlord's desired tenant mix; or (vi) the transferee poses a business or other economic risk which Landlord deems unacceptable.

12.03 Tenant hereby waives the provisions of Section 1995.310 of the California Civil Code, or any similar or successor Laws, now or hereinafter in effect, and all other remedies, including, without limitation, any right at law or equity to terminate this Lease, on its own behalf and, to the extent permitted under all applicable Laws, on behalf of the proposed transferee. In no event shall any Transfer release or relieve Tenant from any obligation under this Lease. Tenant shall pay Landlord a review fee of five hundred dollars ($500.00) for Landlord's review of any requested Transfer. Additionally, Tenant shall reimburse Landlord for all reasonable attorneys' fees and costs incurred by Landlord with respect to any Transfer, whether consented to or not. If Tenant is in Default, Landlord may require that all sublease payments be made directly to Landlord, in which case Tenant shall receive a credit against Rent in the amount of Tenant's share of payments received by Landlord.

12.04 If Landlord consents to any Transfer, Tenant agrees to pay to Landlord, as Additional Rent, fifty percent (50%) of all sums and other consideration actually paid to and for the benefit of Tenant by the transferee on account of the Transfer, as and when such sums and other consideration are paid by the transferee to or for the benefit of Tenant (or, if Landlord so requires, and without any release of Tenant's liability for the same, Tenant agrees to instruct the transferee to pay such sums and other consideration directly to Landlord). If for any Transfer, Tenant receives rent or other consideration, either initially or over the term of the Transfer term, in excess of the rent fairly allocable to the portion of the Premises which is subleased based on square footage, Tenant agrees to pay to Landlord as Additional Rent fifty percent (50%) of the excess of each such payment of rent or other consideration received by Tenant promptly after its receipt. In calculating excess rent or other consideration which may be payable to Landlord under this paragraph, Tenant will be entitled to deduct commercially reasonable third party brokerage commissions and attorneys' fees, tenant improvement construction costs and other amounts reasonably and actually expended by Tenant in connection with such assignment or subletting. Upon request, Tenant will provide reasonable evidence of such expenditures to Landlord.

13. Liens. Tenant shall not permit mechanic's or other liens to be placed upon the Development or Premises in connection with any work purportedly done by or for the benefit of Tenant or its transferees. Tenant shall, within 10 days of notice from Landlord, fully discharge any lien by settlement, by bonding or by insuring over the lien in the manner prescribed by Laws. If Tenant fails to do so, Landlord may bond, insure over or otherwise discharge the lien. Tenant shall reimburse Landlord for any amount paid by Landlord, including, without limitation, reasonable attorneys' fees.

14. Indemnity and Waiver of Claims. Tenant hereby waives all claims against and releases Landlord and its trustees, members, principals, beneficiaries, partners, officers, directors, employees, Mortgagees (as defined herein) and agents (the "**Landlord Related Parties**") from all claims for any injury to or death of persons, damage to property or business loss in any manner related to (a) acts of God, (b) acts of third parties, (c) the bursting or leaking of any tank, water closet, drain or other pipe; (d) the inadequacy or failure of any security services, personnel or equipment, or (e) any matter outside of the reasonable control of Landlord. Except to the extent caused by the gross negligence or willful misconduct of Landlord or any Landlord Related Parties, Tenant shall indemnify, defend and hold Landlord and Landlord Related Parties harmless against and from all liabilities, obligations, damages, penalties, claims, actions, costs, charges and expenses, including, without limitation, reasonable attorneys' fees and other professional fees (if and to the extent permitted by Laws), which may be imposed upon, incurred by or asserted against Landlord or any of the Landlord Related Parties by any third party and arising out of or in connection with any damage or injury occurring in, on or about the Premises or any acts or omissions (including violations of Laws) of Tenant and its trustees, members, principals, beneficiaries, partners, officers, directors, employees, Mortgagees and agents (the "**Tenant Related Parties**") or any of Tenant's transferees, contractors or licensees. Notwithstanding the provisions of this Section 14 above to the contrary, Tenant's indemnity of Landlord and the Landlord Related Parties shall not apply to: (i) any claims to the extent resulting from the gross negligence or willful misconduct of the Landlord Related Parties and not insured or required to be insured by Tenant under this Lease (collectively, the "**Excluded Claims**"); or (ii) any loss of or damage to Landlord's property to the extent Landlord has waived such loss or damage pursuant to Section 16 below. In addition, Landlord shall indemnify, defend, protect and hold Tenant harmless from all such Excluded Claims, except for (A) any loss or damage to Tenant's property to the extent Tenant has waived such loss or damage pursuant to Section 16 below, and (B) any lost profits, loss of business or other consequential damages.

15. Insurance.

15.01 Tenant shall obtain and maintain throughout the Term the following insurance ("Tenant's Insurance"):

(a) Commercial General Liability Insurance written on an ISO CG 00 01 12 07 form or equivalent covering the insured against claims of bodily injury, personal and advertising injury and property damage arising out of Tenant's operations, assumed liabilities or use of the Premises, with no exclusion or limitation to the policy definition of "Insured Contract", covering the insuring provisions of this Lease and the performance by Tenant of the indemnity agreements set forth in Section 14 of this Lease, and liquor liability coverage (in the event alcoholic beverages are served on the Premises) for limits of liability not less than:

Bodily Injury and Property Damage Liability	$2,000,000.00 each occurrence $2,000,000.00 general aggregate $2,000,000.00 Products/Completed Operations Aggregate
Personal and Advertising Injury Liability	$2,000,000.00 each occurrence (included in general aggregate) 0% Insured's participation

(b) Property Insurance, written on "Special Form Cause of Loss Perils form, with coverage for broad form water damage including earthquake sprinkler leakage and pollution coverage for damage caused by heat, smoke or fumes from a hostile fire, at full replacement cost value (without deduction for depreciation) and with a replacement cost endorsement covering all of Tenant's business and trade fixtures, equipment, movable partitions, furniture, merchandise and other personal property, including property of others for which the tenant may be legally liable, within the Premises ("**Tenant's Property**") and any Leasehold Improvements performed by or for the benefit of Tenant;

(c) Loss-of-income, business interruption and extra-expense insurance in such amounts as will reimburse Tenant for direct and indirect loss of earnings attributable to all perils commonly insured against by prudent tenants or attributable to prevention of loss of access to the Premises or to the Building as a result of such perils.

(d) Workers' Compensation Insurance as required by laws and in amounts as may be required by applicable statute and Employers Liability Coverage of at least $1,000,000 each accident, $1,000,000.00 policy limit, $1,000,000.00 each employee, and containing a waiver of subrogation endorsement in favor of Landlord;

(e) If and to the extent Tenant or its employees drive automobiles or other motor vehicles in the course of conducting Tenant's business, Commercial Automobile Liability insuring bodily injury and property damage arising from all owned, non-owned and hired vehicles, if any, with minimum limits of liability of $1,000,000.00 combined single limit, each accident; and

(f) With respect to improvements or Alterations performed by or on behalf of Tenant within the Premises, Builder's Risk insurance or an Installation Floater covering the full amount of the work to be performed, subject to Special Form Cause of Loss perils; provided, however, that in lieu of this requirement, Tenant may cause its general contractor to maintain the foregoing coverage. Such insurance will name the Landlord and Tenant, and, if applicable, the Contractor and Subcontractors, as Insureds.

15.02 Any company writing Tenant's Insurance shall have an A.M. Best rating of not less than A: VIII and shall be licensed to issue insurance coverage in the state in which the premises are located. All Commercial General Liability Insurance policies shall (i) name Landlord (or its successors and assignees), the managing agent for the Building (or any successor), and their respective members, principals, beneficiaries, partners, officers, directors, employees, and agents, and other designees of Landlord and its successors as the interest of such designees shall appear, as additional insureds (utilizing endorsement ISO Form CG 2011 11/85 or equivalent, for tenant improvements or betterments requiring structural alterations the contractors performing the work will provide additional insured endorsements utilizing a combination of the forms CG 20 10 07/04 and CG 20 37 07/04 in favor of the stated additional insureds), (ii) must contain an endorsement stating "such insurance as is afforded by this policy for the benefit of Landlord and any other additional insured(s) designated by Landlord, shall be primary as respects any liability or claims arising out of the occupancy of the Premises by Tenant or Tenant's operations, and any insurance carried by Landlord or any other additional insured(s) shall be non-contributory" (iii) contain an endorsement that the insurer waives its right to subrogation as described in Section 16 below; (iv) contain a cross-liability endorsement or separation of insureds clause. Tenant shall endeavor to obtain the agreement of the insurer writing Tenant's Insurance to notify Landlord (and any other additional insureds) in writing not less than thirty (30) days prior to any cancellation, termination, material change or lapse of Tenant's Insurance (it being agreed that efforts by Tenant to obtain such an agreement by the insurer shall include obtaining any commercially available endorsement to assure such notification). In addition to the foregoing, Tenant shall notify Landlord (and any other additional insureds) in writing not less than thirty (30) days prior to any cancellation, termination, material change or lapse of Tenant's Insurance. Tenant shall provide Landlord with a certificate of insurance evidencing all insurance required to be carried by Tenant hereunder (including evidence of all required endorsements and additional insured coverage as noted above) at least fifteen (15) days prior to the earlier to occur of the Commencement Date or the date Tenant is provided with possession of the Premises, and thereafter as necessary to assure that Landlord always has current certificates evidencing Tenant's Insurance. If any such initial or replacement policies or certificates are not furnished within the time(s) specified herein, Tenant shall be deemed to be in material Default under this Lease without the benefit of any additional notice or cure period provided in Section 19 below, and Landlord shall have the right, but not the obligation, to procure such policies and certificates at Tenant's expense, and Tenant shall pay the cost thereof within ten (10) days following Landlord's submission of an invoice therefor. In no event shall the limits of any insurance policy obtained by a Tenant be considered to limit the liability of Tenant under this Lease.

16. Subrogation. Landlord and Tenant hereby waive and shall cause their respective insurance carriers to waive any and all rights of recovery, claims, actions or causes of action against the other for any loss or damage to person with respect to Tenant's Property, Leasehold Improvements, the Building, the Premises, or any contents thereof, including rights, claims, actions and causes of action based on negligence, which loss, damage or injury is (or would have been, had the insurance required by this Lease been carried) covered by insurance. As noted above, Tenant also waives subrogation with respect to losses or claims covered by worker's compensation insurance.

17. Casualty Damage. Landlord, by notice to Tenant within sixty (60) days of the date of the fire or other casualty (a "**Casualty**"), shall have the right to terminate this Lease if all or any part of the Premises is damaged to the extent that it cannot reasonably be repaired within one hundred twenty (120) days after the date of the Casualty. If this Lease is not terminated, Landlord shall promptly and diligently, restore the Premises. Such restoration shall be to substantially the same condition that existed prior to the Casualty, except for modifications required by Laws. Upon notice from Landlord, Tenant shall assign to Landlord (or to any party designated by Landlord) all property insurance proceeds payable to Tenant under Tenant's Insurance with respect to any Leasehold Improvements performed by or for the benefit of Tenant; provided if the estimated cost to repair such Leasehold Improvements exceeds the amount of insurance proceeds received by Landlord from Tenant's insurance carrier, the excess cost of such repairs shall be paid by Tenant to Landlord prior to Landlord's commencement of repairs. Within thirty (30) days of demand, Tenant shall also pay Landlord for any additional excess costs relating to Leasehold Improvements that are determined during the performance of the repairs. Landlord shall not be liable for any inconvenience to Tenant, or injury to Tenant's business resulting in any way from the Casualty or the repair thereof. Provided that Tenant is not in Default, during any period of time that all or a material portion of the Premises is rendered untenantable as a result of a Casualty, the Rent shall abate for the portion of the Premises that is untenantable and not used by Tenant. Notwithstanding the foregoing, and without limiting Tenant's obligations, to pay to Landlord any cost of restoration of the Leasehold Improvements in excess of the proceeds of Tenant's Insurance, in the event that Landlord does not receive sufficient insurance proceeds to complete all required restoration work, whether due to an uninsured Casualty, requirements of a Mortgagee, or otherwise, then Landlord shall have the right to terminate this Lease by written notice to Tenant. The provisions of this Lease, including this Section 17, constitute an express agreement between Landlord and Tenant with respect to any and all damage to, or destruction of, all or any part of the Premises, the Building, or the Development, and any Laws, including, without limitation, Sections 1932(2) and 1933(4) of the California Civil Code, with respect to any rights or obligations concerning damage or destruction in the absence of an express agreement between the parties, and any similar or successor Laws now or hereinafter in effect, shall have no application to this Lease or any damage or destruction to all or any part of the Premises, the Building or the Development.

18. Condemnation. Either party may terminate this Lease if any material part of the Premises is taken or condemned for, or rendered unusable in a manner consistent with the Permitted Use due to a taking for, any public or quasi-public use under Laws, by eminent domain or private purchase in lieu thereof (a "**Taking**"). Landlord shall also have the right to terminate this Lease if there is a Taking of any portion of the Building or Property which would have a material adverse effect on Landlord's ability to profitably operate the remainder of the Building. The terminating party shall provide written notice of termination to the other party within forty-five (45) days after it first receives notice of the Taking. The termination shall be effective on the date the physical taking occurs. All compensation awarded for a Taking, or sale proceeds, shall be the property of Landlord. Tenant hereby waives any and all rights it might otherwise have pursuant to Section 1265.130 of the California Code of Civil Procedure, or any similar or successor Laws.

19. Events of Default. Each of the following occurrences shall be considered to be a "**Default**": (a) Tenant's failure to pay any portion of Rent when due, if the failure continues for three (3) days after written notice to Tenant, which notice shall be in satisfaction of, and not in addition to, notice required by Laws ("**Monetary Default**"); or (b) Tenant's failure (other than a Monetary Default) to comply with any term, provision, condition or covenant of this Lease, if the failure is not cured within ten (10) days after written notice to Tenant, which notice shall be in satisfaction of, and not in addition to, notice required by Laws (including, without limitation, Section 1161 of the California Code of Civil Procedure), provided, however, if Tenant's failure to comply cannot reasonably be cured within ten (10) days, Tenant shall be allowed additional time (not to exceed sixty (60) days) as is reasonably necessary to cure the failure so long as Tenant commences to cure within ten (10) days and Tenant diligently pursues the cure to completion.

20. Remedies.

20.01 Upon the occurrence of any Default under this Lease, whether enumerated in Section 19 above or not, Landlord shall have the option to pursue any one (1) or more of the following remedies without any notice (except as expressly prescribed herein) or demand whatsoever (and without limiting the generality of the foregoing, Tenant hereby specifically waives notice and demand for payment of Rent or other obligations, except for those notices specifically required pursuant to the terms of Section 19 above or this Section 20, and waives any and all other notices or demand requirements imposed by applicable law):

(a) Terminate this Lease and Tenant's right to possession of the Premises and recover from Tenant an award of damages equal to the sum of the following:

(i) The Worth at the Time of Award (as defined below) of the unpaid Rent which had been earned at the time of termination;

(ii) The Worth at the Time of Award of the amount by which the unpaid Rent which would have been earned after termination until the time of award exceeds the amount of such Rent loss that Tenant affirmatively proves could have been reasonably avoided;

(iii) The Worth at the Time of Award of the amount by which the unpaid Rent for the balance of the Term after the time of award exceeds the amount of such Rent loss that Tenant affirmatively proves could be reasonably avoided;

(iv) Any other amount necessary to compensate Landlord for all the detriment either proximately caused by Tenant's failure to perform Tenant's obligations under this Lease or which in the ordinary course of things would be likely to result therefrom; and

(v) All such other amounts in addition to or in lieu of the foregoing as may be permitted from time to time under applicable law.

The "**Worth at the Time of Award**" of the amounts referred to in parts (i) and (ii) above, shall be computed by allowing interest at the lesser of a per annum rate equal to: (A) the greatest per annum rate of interest permitted from time to time under applicable law, or (B) the Prime Rate (defined below) plus five percent (5%) (the "**Interest Rate**"). For purposes hereof, the "**Prime Rate**" shall be the per annum interest rate publicly announced as its prime or base rate by a federally insured bank selected by Landlord in the State of California. The "**Worth at the Time of Award**" of the amount referred to in part (iii), above, shall be computed by discounting such amount at the discount rate of the Federal Reserve Bank of San Francisco at the time of award plus one percent (1%);

(b) Employ the remedy described in California Civil Code § 1951.4 (Landlord may continue this Lease in effect after Tenant's breach and abandonment and recover Rent as it becomes due, if Tenant has the right to sublet or assign, subject only to reasonable limitations); or

(c) Notwithstanding Landlord's exercise of the remedy described in California Civil Code § 1951.4 in respect of an event or events of Default, at such time thereafter as Landlord may elect in writing, to terminate this Lease and Tenant's right to possession of the Premises and recover an award of damages as provided above in Section 20.01(a).

20.02 The subsequent acceptance of Rent hereunder by Landlord shall not be deemed to be a waiver of any preceding breach by Tenant of any term, covenant or condition of this Lease, other than the failure of Tenant to pay the particular Rent so accepted, regardless of Landlord's knowledge of such preceding breach at the time of acceptance of such Rent. No waiver by Landlord of any breach hereof shall be effective unless such waiver is in writing and signed by Landlord.

20.03 TENANT HEREBY WAIVES ANY AND ALL RIGHTS CONFERRED BY SECTION 3275 OF THE CIVIL CODE OF CALIFORNIA AND BY SECTIONS 1174 (c) AND 1179 OF THE CODE OF CIVIL PROCEDURE OF CALIFORNIA AND ANY AND ALL OTHER LAWS AND RULES OF LAW FROM TIME TO TIME IN EFFECT DURING THE LEASE TERM PROVIDING THAT TENANT SHALL HAVE ANY RIGHT TO REDEEM, REINSTATE OR RESTORE THIS LEASE FOLLOWING ITS TERMINATION BY REASON OF TENANT'S BREACH. TENANT ALSO HEREBY WAIVES, TO THE FULLEST EXTENT PERMITTED BY LAW, THE RIGHT TO TRIAL BY JURY IN ANY LITIGATION ARISING OUT OF OR RELATING TO THIS LEASE.

20.04 No right or remedy herein conferred upon or reserved to Landlord is intended to be exclusive of any other right or remedy, and each and every right and remedy shall be cumulative and in addition to any other right or remedy given hereunder or now or hereafter existing by agreement, applicable law or in equity. In addition to other remedies provided in this Lease, Landlord shall be entitled, to the extent permitted by applicable law, to injunctive relief, or to a decree compelling performance of any of the covenants, agreements, conditions or provisions of this Lease, or to any other remedy allowed to Landlord at law or in equity. Forbearance by Landlord to enforce one or more of the remedies herein provided upon an event of Default shall not be deemed or construed to constitute a waiver of such Default.

20.05 If Tenant is in Default of any of its non-monetary obligations under this Lease, Landlord shall have the right to perform such obligations. Tenant shall reimburse Landlord for the cost of such performance upon demand together with an administrative charge equal to ten percent (10%) of the cost of the work performed by Landlord.

20.06 This Section 20 shall be enforceable to the maximum extent such enforcement is not prohibited by applicable law, and the unenforceability of any portion thereof shall not thereby render unenforceable any other portion.

21. Limitation of Liability.

THE LIABILITY OF LANDLORD (AND OF ANY SUCCESSOR LANDLORD) SHALL BE LIMITED TO THE LESSER OF (A) THE INTEREST OF LANDLORD IN THE PROPERTY, OR (B) THE EQUITY INTEREST LANDLORD WOULD HAVE IN THE PROPERTY IF THE PROPERTY WERE ENCUMBERED BY THIRD PARTY DEBT IN AN AMOUNT EQUAL TO SEVENTY PERCENT (70%) OF THE VALUE OF THE PROPERTY. TENANT SHALL LOOK SOLELY TO LANDLORD'S INTEREST IN THE PROPERTY FOR THE RECOVERY OF ANY JUDGMENT OR AWARD AGAINST LANDLORD OR ANY LANDLORD RELATED PARTY. NEITHER LANDLORD NOR ANY LANDLORD RELATED PARTY SHALL BE PERSONALLY LIABLE FOR ANY JUDGMENT OR DEFICIENCY AND IN NO EVENT SHALL LANDLORD OR ANY LANDLORD RELATED PARTY BE LIABLE TO TENANT FOR ANY LOST PROFIT, DAMAGE TO OR LOSS OF BUSINESS OR ANY FORM OF SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGE. BEFORE FILING SUIT FOR AN ALLEGED DEFAULT BY LANDLORD, TENANT SHALL GIVE LANDLORD AND THE MORTGAGEE(S) (DEFINED IN SECTION 24 BELOW) WHOM TENANT HAS BEEN NOTIFIED HOLD MORTGAGES (DEFINED IN SECTION 24 BELOW), NOTICE AND REASONABLE TIME TO CURE THE ALLEGED DEFAULT.

22. Intentionally Omitted.

23. Holding Over. If Tenant remains in possession of the Premises after expiration or termination of the Term, or after the date in any notice given by Landlord to Tenant terminating this Lease, such possession by Tenant shall be deemed to be a month-to-month tenancy terminable on written thirty (30) day notice at any time, by either party. Tenant's occupancy shall be subject to all the terms and provisions of this Lease and Tenant shall pay an amount (on a per month basis without reduction for partial months during the holdover) equal to one hundred fifty percent (150%) of the fair market gross rental for the Premises as reasonably determined by Landlord (which in no event shall be less than one hundred fifty percent (150%) of the sum of the Base Rent and Additional Rent due for the period immediately preceding the holdover). No holdover by Tenant or payment by Tenant after the termination of this Lease shall be construed to extend the Term or prevent Landlord from immediate recovery of possession of the Premises by summary proceedings or otherwise. If Tenant fails to surrender the Premises upon the termination or expiration of this Lease, in addition to any other liabilities to Landlord accruing therefrom, Tenant shall protect, defend, indemnify and hold Landlord harmless from all loss, costs (including reasonable attorneys' fees) and liability resulting from such failure, including any claims made by any succeeding tenant founded upon such failure to surrender, and any lost profits to Landlord resulting therefrom.

24. Subordination to Mortgages; Estoppel Certificate. Tenant accepts this Lease subject and subordinate to any mortgage(s), deed(s) of trust, ground lease(s) or other lien(s) now or subsequently arising upon the Premises, the Building or the Development, and to renewals, modifications, refinancings and extensions thereof (collectively referred to as a "**Mortgage**"). This clause shall be self-operative, but upon request from the holder of a Mortgage (a "**Mortgagee**"), Tenant shall execute a commercially reasonable subordination agreement. As an alternative, a Mortgagee shall have the right at any time to subordinate its Mortgage to this Lease. Upon request, Tenant shall, without charge, attorn to any successor to Landlord's interest in this Lease. Tenant shall, within ten (10) days after receipt of a written request from Landlord, execute and deliver a commercially reasonable estoppel certificate to those parties as are reasonably requested by Landlord.

25. Financial Statements. Prior to the execution of this Lease by Landlord and at any time during the Term of this Lease (unless Tenant has become a public reporting company under the Securities Exchange Act of 1934) upon ten (10) days prior written notice from Landlord, Tenant agrees to provide Landlord with a current financial statement for Tenant and any guarantors of Tenant and financial statements for the two (2) years prior to the current financial statement year for Tenant and any guarantors of Tenant. Such statements are to be prepared in accordance with generally accepted accounting principles and, if such is the normal practice of Tenant, audited by an independent certified public accountant.

26. Notice. All demands, approvals, consents or notices shall be in writing and delivered by hand or sent by registered or certified mail with return receipt requested, or sent by overnight or same day courier service at the party's respective Notice Address(es) set forth in Section 1 above. Each notice shall be deemed to have been received on the earlier to occur of actual delivery or the date on which delivery is refused, or, if Tenant has vacated the Premises or any other Notice Address without providing a new Notice Address, three (3) days after notice is deposited in the U.S. mail or with a courier service in the manner described above. Either party may, at any time, change its Notice Address (other than to a post office box address) by giving the other party written notice of the new address.

27. Surrender of Premises. At the termination of this Lease or Tenant's right of possession, Tenant shall remove Tenant's Property and any designated Required Removables from the Premises, and quit and surrender the Premises to Landlord, broom clean, and in good order, condition and repair, ordinary wear and tear and damage which Landlord is obligated to repair hereunder excepted. If Tenant fails to remove any of Tenant's Property within two (2) days after termination, Landlord, at Tenant's sole cost and expense, shall be entitled to remove and store Tenant's Property. Landlord shall not be responsible for the value, preservation or safekeeping of Tenant's Property. Tenant shall pay Landlord, upon demand, the expenses and storage charges incurred. If Tenant fails to remove Tenant's Property from the Premises or storage within thirty (30) days after notice, Landlord may deem all or any part of Tenant's Property to be abandoned and title to Tenant's Property shall vest in Landlord. If Tenant fails to remove any of the designated Required Removables by the Expiration Date or perform related repairs in a timely manner, Landlord may perform such work at Tenant's expense, and Tenant shall be deemed to be in holdover of the Premises pursuant to Section 23 above during the reasonable period of time required for the removal of Tenant's Property.

28. Miscellaneous.

28.01 Costs and Expenses; No Waiver. If either party institutes a suit against the other for violation of or to enforce any covenant, term or condition of this Lease, the prevailing party shall be entitled to all of its costs and expenses, including, without limitation, reasonable attorneys' fees. Landlord and Tenant hereby waive any right to trial by jury in any proceeding based upon a breach of this Lease. Either party's failure to declare a default immediately upon its occurrence, or delay in taking action for a default shall not constitute a waiver of the default, nor shall it constitute an estoppel.

28.02 Force Majeure. Whenever a period of time is prescribed for the taking of an action by Landlord or Tenant (other than the payment of the Security Deposit or Rent), the period of time for the performance of such action shall be extended by the number of days that the performance is actually delayed due to strikes, acts of God, shortages of labor or materials, war, terrorist acts, civil disturbances and other causes beyond the reasonable control of the performing party ("**Force Majeure**")**.** Force Majeure shall not include financial difficulties of the party required to perform.

28.03 Transfer By Landlord. Landlord shall have the right to transfer and assign, in whole or in part, all of its ownership interest, rights and obligations in the Building, Development or Lease, including the Security Deposit, and upon transfer Landlord shall be released from any further obligations hereunder, and Tenant agrees to look solely to the successor in interest of Landlord for the performance of such obligations and the return of any Security Deposit.

28.04 Submission of Lease; Claims By Brokers. Landlord has delivered a copy of this Lease to Tenant for Tenant's review only, and the delivery of it does not constitute an offer to Tenant or an option. Tenant represents that it has dealt directly with and only with the Broker as a broker in connection with this Lease. Tenant shall indemnify and hold Landlord and the Landlord Related Parties harmless from all claims of any other brokers claiming to have represented Tenant in connection with this Lease.

28.05 Survival of Obligations. The expiration of the Term, whether by lapse of time, termination or otherwise, shall not relieve either party of any obligations which accrued prior to or which may continue to accrue after the expiration or termination of this Lease.

28.06 Quiet Enjoyment; Binding Covenants. Tenant shall, and may peacefully have, hold and enjoy the Premises, subject to the terms of this Lease, provided Tenant pays the Rent and fully performs all of its covenants and agreements. This covenant and all other covenants of Landlord shall be binding upon Landlord and its successors only during its or their respective periods of ownership of the Building.

28.07 Entire Agreement. This Lease constitutes the entire agreement between the parties and supersedes all prior agreements and understandings related to the Premises. This Lease may be modified only by a written agreement signed by Landlord and Tenant. This Lease shall be interpreted and enforced in accordance with the Laws of the state or commonwealth in which the Building is located.

28.08 Authority; PATRIOT Act. Tenant represents and warrants to Landlord that each individual executing this Lease on behalf of Tenant is authorized to do so on behalf of Tenant and that Tenant is not, and the entities or individuals constituting Tenant or which may own or control Tenant or which may be owned or controlled by Tenant are not, among the individuals or entities identified on any list compiled pursuant to Executive Order 13224 for the purpose of identifying suspected terrorists.

28.09 Time is of the Essence. Time is of the essence with respect to the performance of every provision of this Lease in which time of performance is a factor.

28.10 Severability. The provisions of this Lease shall be considered separable such that if any provision or part of this Lease is ever held to be invalid, void or illegal under any law or ruling, all remaining provisions of this Lease shall remain in full force and effect to the maximum extent permitted by law.

28.11 Confidentiality. The parties acknowledge and agree that the terms of this Lease are confidential and constitute proprietary information. Disclosure of the terms could adversely affect the ability of Landlord to negotiate other leases and impair Landlord's relationship with other tenants. Accordingly, the parties agree that they, and their respective partners, officers, directors, employees, agents and attorneys, shall not intentionally and voluntarily disclose the terms and conditions of this Lease to any newspaper or other publication or any other tenant or apparent prospective tenant of the Building or other portion of the Development, or real estate agent, either directly or indirectly, without the prior written consent of the other party, provided, however, that Tenant may disclose the terms to prospective subtenants or assignees under this Lease.

29. Parking.

29.01 Tenant's Parking. During the Term of this Lease, Tenant shall have the right to use, at no charge to Tenant during the initial Term, the number of parking spaces specified in Section 1.11 of the Basic Lease Information hereof, for use by Tenant's employees in the common parking areas for the Building within the Development, as designated by Landlord from time to time. Landlord shall at all times have the right to establish and modify the nature and extent of the parking areas for the Building and Development (including whether such areas shall be surface, underground and/or other structures) as long as Tenant is provided the number of parking spaces designated in the Basic Lease Information. In addition, Landlord may, in its sole discretion, assign any unreserved and unassigned parking spaces, and/or make all or a portion of such spaces reserved.

29.02 In addition to such parking spaces for use by Tenant's employees, Landlord shall permit access to the parking areas for Tenant's visitors, subject to availability of spaces and payment (by validation charges or otherwise) of daily visitor parking charges therefor as may be established and adjusted by Landlord from time to time. Landlord hereby agrees to provide three (3) additional unreserved parking spaces adjacent to the Building, for the non-exclusive use of all visitors and invitees of the Building or Development. Landlord shall use commercially reasonable efforts to identify such three (3) stalls in a location near the entrance of the Building for use by visitors of the Building or Development, which stalls are subject to relocation in Landlord's sole and absolute discretion. Although there are currently no daily visitor parking charges, Landlord reserves the right to impose such charges in the future. To the extent Landlord institutes any visitor parking charges, Landlord shall provide Tenant the ability to validate its visitors parking, such that they will not be responsible for payment of such charges.

29.03 The use of the parking areas shall be subject to any reasonable, non-discriminatory rules and regulations adopted by Landlord and/or Landlord's parking operators from time to time, including any system for controlled ingress and egress and charging visitors and invitees, with appropriate provision for validation of such charges. Tenant shall not use more parking spaces than its allotment and shall not use any parking spaces specifically assigned by Landlord to other tenants of the Building or Development or for such other uses as visitor

parking. Tenant's parking spaces shall be used only for parking by vehicles no larger than normally sized passenger automobiles or pick-up trucks. Tenant shall not permit or allow any vehicles that belong to or are controlled by Tenant or Tenant's employees, suppliers, shippers, customers or invitees to be loaded, unloaded, or parked in areas other than those designated by Landlord for such activities. If Tenant permits or allows any of the prohibited activities described herein, including, without limitation, parking in spaces designated as reserved spaces, illegal parking, and any non-compliance with posted signage, then Landlord shall have the right, without notice, in addition to such other rights and remedies that it may have, to remove or tow away the vehicle involved and charge the cost thereof to Tenant, which cost shall be immediately payable by Tenant upon demand by Landlord.

29.04 Subject to plans and specifications approved in advance by Landlord, including designation of the parking space to be used and paid for by Tenant in connection therewith, and in accordance with the terms and conditions set forth in Section 10.02 above, Tenant shall have the right to install at its sole cost and expense an electric vehicle charging station for use by Tenant's employees. Tenant shall be solely responsible for acquisition and installation of the charging station and all associated infrastructure and shall arrange and pay for electricity and any metering to measure the electricity utilized by the charging station. Tenant shall be responsible to obtain and maintain all permits required for the installation, operation and maintenance of the charging station in compliance with all applicable laws, rules and regulations. Upon Landlord or Tenant's request, prior to installation of the charging station, Landlord and Tenant shall enter into a lease amendment, or other written agreement, in mutually acceptable form to set forth the terms and conditions governing the charging station. At the expiration or earlier termination of the Lease, Tenant shall, upon Landlord's request, remove the charging station from the Development (and shall repair any damage caused by such removal), but shall leave all associated infrastructure in place.

30. Intentionally Omitted.

31. Counterparts; Electronic Delivery /Signatures. This Lease may be executed in one or more counterparts, each of which shall constitute an original and all of which shall be one and the same agreement. The parties may exchange electronic counterpart signatures by facsimile or electronic transmission and the same shall constitute execution and delivery of this Lease with respect to the delivering party. If a variation or discrepancy among counterparts occurs, the copy of this Lease in Landlord's possession shall control.

32. Hazardous Materials.

32.01 Tenant will (i) obtain and maintain in full force and effect all Environmental Permits (defined below) that may be required from time to time under any Environmental Laws (defined below) applicable to Tenant or the Premises and (ii) be and remain in compliance in all material respects with all terms and conditions of all such Environmental Permits and with all other limitations, restrictions, conditions, standards, prohibitions, requirements, obligations, schedules and timetables contained in all Environmental Laws applicable to Tenant or to Tenant's operations in the Premises. As used in this Lease, the term "**Environmental Laws**" means any past, present or future federal, state, local or foreign statutory or common law, or any regulation, ordinance, code, plan, order, permit, grant, franchise, concession, restriction or agreement issued, entered, promulgated or approved thereunder, relating to (a) the environment, human health or safety, including, without limitation, emissions, discharges, releases or threatened releases of Hazardous Materials (as defined below) into the environment (including, without limitation, air, surface water, groundwater or land), or (b) the manufacture, generation, refining, processing, distribution, use, sale, treatment, receipt, storage, disposal, transport, arranging for transport, or handling of Hazardous Materials. "**Environmental Permits**" means, collectively, any and all permits, consents, licenses, approvals and registrations of any nature at any time required pursuant to, or in order to comply with, any Environmental Laws. Except for ordinary and general office supplies, equipment and facilities, such as copier toner, liquid paper, back-up power sources, glue, ink and common household cleaning materials, as well as customary quantities of first aid supplies and the parking of vehicles in the parking areas adjacent to the Premises (some or all of which may constitute "Hazardous Materials" as defined in this Lease), Tenant agrees not to cause or knowingly permit any Hazardous Materials to be brought upon, stored, used, handled, generated, released or disposed of on, in, under or about the Premises, the Building, the Development or any portion thereof by Tenant or any of Tenant's Parties (as defined in Section 1.11 hereof) without the prior written consent of Landlord, which consent Landlord may withhold in its sole and absolute discretion. Upon the expiration or earlier termination of this Lease, Tenant agrees to promptly remove from the Premises, at its sole cost and expense, any and all Hazardous Materials, including any equipment or systems containing Hazardous Materials which are installed, brought upon, stored, used, generated or released upon, in, under or about the Premises, the Building, the Development or any portion thereof by Tenant or any of Tenant's Parties. To the fullest extent permitted by law, Tenant agrees to

promptly indemnify, protect, defend and hold harmless Landlord and Landlord's partners, officers, directors, employees, agents, successors and assigns (collectively, "**Landlord Indemnified Parties**") from and against any and all claims, damages, judgments, suits, causes of action, losses, liabilities, penalties, fines, expenses and costs (including, without limitation, clean-up, removal, remediation and restoration costs, sums paid in settlement of claims, attorneys' fees, consultant fees and expert fees and court costs) which arise or result from the presence of Hazardous Materials on, in, under or about the Premises, the Building or any other portion of the Development and which are caused or knowingly permitted by Tenant or any of Tenant's Parties. Tenant agrees to promptly notify Landlord of any release of Hazardous Materials at the Premises, which Tenant becomes aware of during the Term of this Lease, whether caused by Tenant or any other persons or entities. In the event of any release of Hazardous Materials caused or permitted by Tenant or any of Tenant's Parties, Landlord shall have the right, but not the obligation, to cause Tenant to immediately take all steps Landlord deems necessary or appropriate to remediate such release and prevent any similar future release to the satisfaction of Landlord and Landlord's mortgagee(s). As used in this Lease, the term "**Hazardous Materials**" shall mean and include any hazardous or toxic materials, substances or wastes as now or hereafter designated under any law, statute, ordinance, rule, regulation, order or ruling of any agency of the State, the United States Government or any local governmental authority, including, without limitation, asbestos, asbestos-containing material, presumed asbestos containing materials, petroleum, petroleum hydrocarbons and petroleum based products, urea formaldehyde foam insulation, polychlorinated biphenyls, and freon and other chlorofluorocarbons. The provisions of this Section 32 will survive the expiration or earlier termination of this Lease. Tenant's "cleanup" and remediation obligations shall not extend to items which are ordinarily included in ordinary maintenance of the parking and loading areas within the Common Areas.

32.02 Subject to Sections 16 and 21 hereof, Landlord shall promptly indemnify, protect, defend and hold Tenant and Tenant's partners, officers, directors, employees, agents, successors and assigns harmless from and against any and all claims, judgment, damages, suits, causes of action, penalties, fines, expenses and costs, liabilities or losses (including, without limitation, sums paid in settlement of claims, attorneys' fees, consultant fees and expert fees) (collectively, "**Claims**") which arise on or after the date that possession of the Premises is delivered to Tenant, including any time after the expiration of the Lease Term, from or in connection with Hazardous Materials conditions which were caused or knowingly permitted by Landlord or its agents or employees.

33. Required Accessibility Disclosure. Landlord hereby advises Tenant that the Development has not undergone an inspection by a certified access specialist, and except to the extent expressly set forth in this Lease, Landlord shall have no liability or responsibility to make any repairs or modifications to the Premises or the Development in order to comply with accessibility standards. The following disclosure is hereby made pursuant to applicable California law:

> "A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the premises." [*Cal. Civ. Code Section 1938(e)*].

Any CASp inspection shall be conducted in compliance with reasonable rules in effect at the Building with regard to such inspections and shall be subject to Landlord's prior written consent.

[LANDLORD'S SIGNATURE ON PAGE S-1 AND TENANT'S SIGNATURE ON PAGE S-2 ATTACHED HERETO]

Landlord has executed this Lease as of the day and year first above written.

LANDLORD:

BIXBY SPE FINANCE 11, LLC,
a Delaware limited liability company

By: Bixby SPE Finance, LLC,
a Delaware limited liability company
its sole Member and Manager

By: Bixby Land Company,
a California corporation
its sole Member and Manager

By: /s/ Aaron D. Hill
Name: Aaron D. Hill
Title: Executive Vice President and Chief Operating Officer

By: /s/ Martin T. O'Hea
Name: Martin T. O'Hea
Title: Executive Vice President and CFO

[TENANT'S SIGNATURE ON NEXT PAGE]

Tenant has executed this Lease as of the day and year first above written.

TENANT:

SI-BONE, INC.,
a Delaware corporation

By: /s/ Jeffrey W. Dunn
Name: Jeffrey W. Dunn
Title: President, CEO and Chairman

By: /s/ Michael Pisetsky
Name: Michael Pisetsky
Title: VP & General Counsel

26-2216351
Tenant's Tax ID Number (SSN or FEIN)

EXHIBIT A

OUTLINE AND LOCATION OF PREMISES

This Exhibit is attached to and made a part of the Lease by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**") for space in the Building located at 471 El Camino Real, Santa Clara, California.

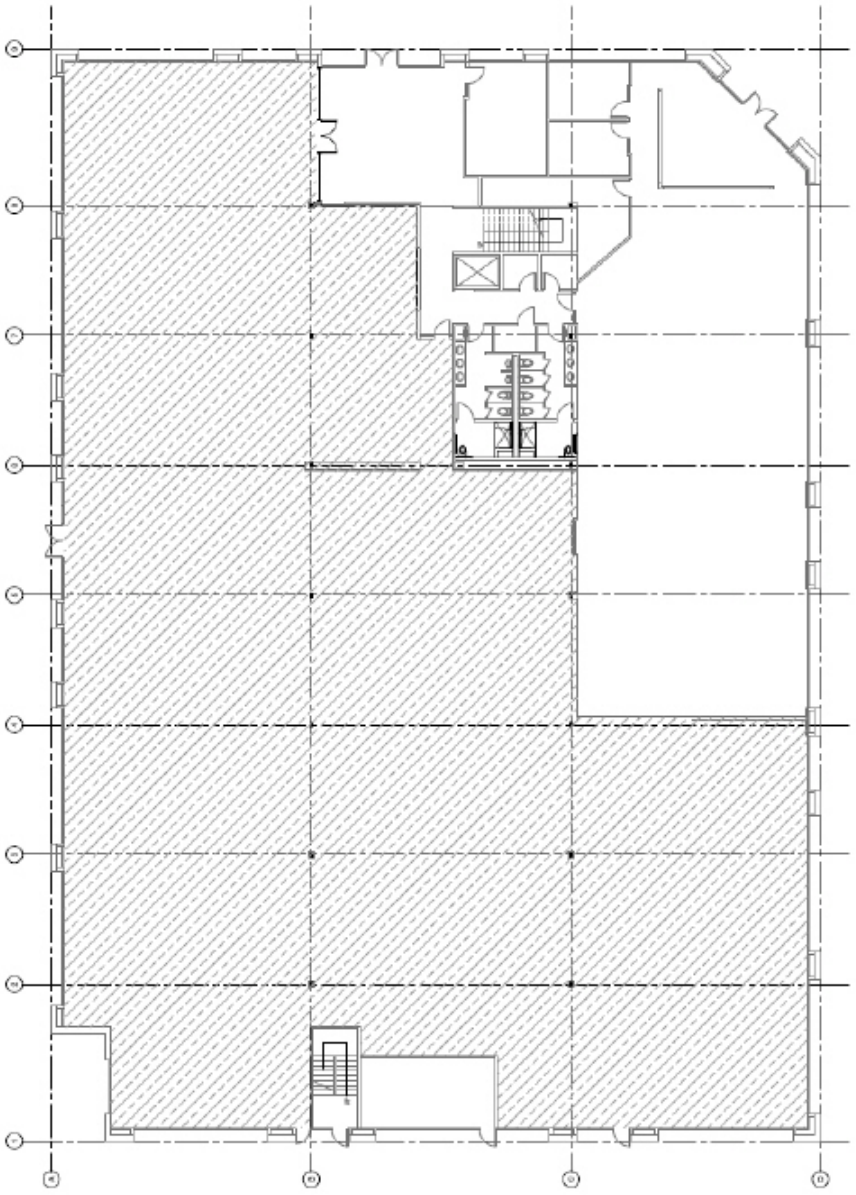
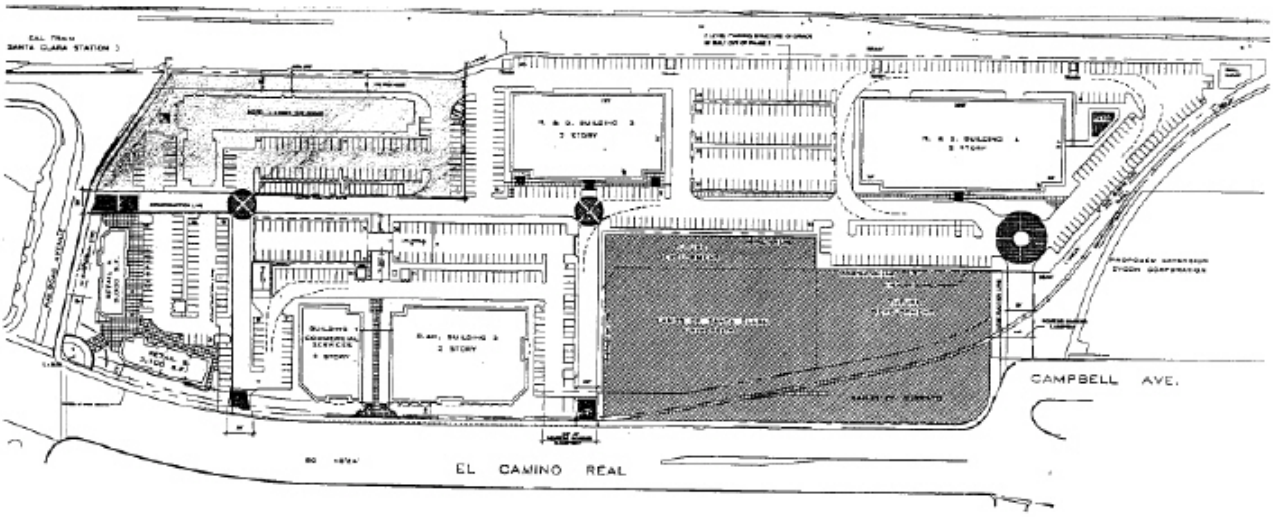


Exhibit A is intended only to show the general layout of the space Plan as of the beginning of the Term of this Lease. It does not in any way supersede any of Landlord's rights with respect to arrangements and/or locations of public parts of the Building and changes in such arrangements and/or locations. It is not to scale; any measurements or distances shown should be taken as approximate.

EXHIBIT A-1

DEPICTION OF DEVELOPMENT

This Exhibit is attached to and made a part of the Lease by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**") for space in the Building located at 471 El Camino Real, Santa Clara, California.



SITE PLAN

UNIVERSITY / TECHNOLOGY STATION
SANTA CLARA, CALIFORNIA

EXHIBIT B

OPERATING EXPENSES AND TAXES

This Exhibit is attached to and made a part of the Lease by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**") for space in the Building located at 471 El Camino Real, Santa Clara, California.

1. Items Included in Operating Expenses. The term "**Operating Expenses**" as used in the Lease to which this Exhibit B is attached means the sum of Building Operating Expenses and Common Area Operating Expenses.

"**Building Operating Expenses**" shall mean, with respect to any period, and without duplication, all reasonable and customary costs of whatsoever type of character paid or incurred by Landlord during such period in connection with the operation, repair and maintenance of the Premises and the Building as determined by generally accepted accounting practices, consistently applied, including, by way of illustration and not limitation, the following: (i) Landlord's costs of fulfilling its obligations pursuant to Section 8 of the Lease, including, but not limited to Landlord's Services, to the extent Landlord is entitled to pass through said costs pursuant to said section; (ii) amortization on a straight line basis over the useful life (together with interest at the Interest Rate on the unamortized balance) of all capitalized expenditures for the Building, other than in connection with the original construction, which are reasonably intended to produce a reduction of Operating Expenses, (iii) Landlord's insurance for the buildings in the Development, (iv) real property taxes imposed against the Building and other improvements on the legal parcels on which the buildings in the Development are located, (v) all sewer, water, electricity, and other utility charges to the extent not paid directly by Tenant (including HVAC for the Building during normal business hours), and utilities surcharges and any other costs, levies or assessments resulting from statutes or regulations promulgated by any government or quasi-government authority in connection with the use, occupancy or alteration of the Building or the Premises or the parking facilities serving the Building or the Premises, (vi) labor costs incurred in the operation and repair of the portion of the Building that is Landlord's obligation under the Lease, including without limitation, supplies, wages, and salaries (including payroll taxes and similar governmental charges related thereto) of employees at the grade of building manager or below that are used in the management, operation and maintenance of the Building, (vii) supplies, equipment and related operating expenses, and a management/administrative fee, (viii) reasonable accounting, audit, verification, legal and other consulting fees related directly to the operation of the Development, (ix) amortization on a straight line basis over the useful life (together with interest at the Interest Rate on the unamortized balance) of all costs resulting from Landlord's replacement during any Option Term, if applicable, of the roof, HVAC above the roof level, and/or the Building elevators;

"**Common Area Operating Expenses**" shall mean, with respect to any period, without duplication, all reasonable and customary costs and expenses paid or incurred by Landlord during such period, in connection with the operation, repair and maintenance of the Common Areas of the Development, excluding Common Areas within the Building (as such terms are defined in the Lease); as determined by generally accepted accounting practices, consistently applied, including the following costs by way of illustration but not limitation: (a) water and sewer charges and the costs of electricity, and other utilities serving the Common Areas; (b) costs of insurance for the Common Areas not paid by Tenant pursuant to the paragraph immediately above; (c) waste disposal and janitorial services related solely to the Common Areas; (d) security for the Common Areas (if Landlord elects, in its sole and absolute discretion, to obtain security services or equipment); (e) labor costs incurred in the operation, repair, and management of the Development, including without limitation, supplies, wages and salaries (including payroll taxes and similar governmental charges related thereto) of employees at the grade of building manager or below to the extent used in the management, operation and maintenance of the Development; (f) Development management office rental (not to exceed the prevailing market rental rate), supplies, equipment and related operating expenses; (g) supplies, materials, equipment and tools including rental of personal property used for maintenance of the Common Area; (h) repair and maintenance of the plumbing, irrigation, electrical, drainage and storm drain systems of the Common Area; (i) maintenance, costs and upkeep of all parking and other Common Areas; (j) depreciation on a straight line basis and rental of personal property used in maintenance of the Common Areas; (k) amortization on a straight line basis over the useful life of all non-structural capitalized expenditures related to the Common Areas, other than in connection with the initial construction, which are (i) reasonably intended to produce a reduction in Operating Expenses; or (ii) required under any governmental law or regulation that was not applicable to the Development at the time it was originally constructed; or (iii) for replacement of any Development equipment

needed to operate the Development at the same quality levels as prior to the replacement; (l) costs and expenses or gardening or landscaping; (m) maintenance of signs (other than Tenant's signs, and signs of other tenants of the Development, or relating to marketing activities); (n) personal property taxes levied on or attributable to personal property used in connection with the Common Areas; (o) reasonable accounting, audit, legal and other consulting fees; and (p) costs and expenses of repairs, resurfacing, repairing, maintenance, painting, lighting, cleaning, refuse removal, security and similar items.

2. Items Excluded From Operating Expenses. Expenses shall not include: depreciation; principal payments of mortgage and other non-operating debts of Landlord; the cost of repairs or other work to the extent Landlord is reimbursed by insurance or condemnation proceeds; costs in connection with leasing space in the Building, including brokerage commissions; lease concessions, rental abatements and construction allowances granted to specific tenants; costs incurred in connection with the sale, financing or refinancing of the Building; fines, interest and penalties incurred due to the late payment of Taxes or Expenses; organizational expenses associated with the creation and operation of the entity which constitutes Landlord; or any penalties or damages that Landlord pays to Tenant under this Lease or to other tenants in the Building under their respective leases.

3. Occupancy. If at any time during a calendar year the Development is not at least ninety-five percent (95%) occupied or Landlord is not supplying services to at least ninety-five percent (95%) of the total rentable square footage of the Development, Expenses shall, at Landlord's option, be determined as if the Development had been ninety-five percent (95%) occupied and Landlord had been supplying services to ninety-five percent (95%) of the rentable square footage of the Development.

4. Taxes. "**Taxes**" shall mean: (a) all real property taxes and other assessments on the Building and/or the Development, including, but not limited to, gross receipts taxes, assessments for special improvement districts and building improvement districts, governmental charges, fees and assessments for police, fire, traffic mitigation or other governmental service of purported benefit to the Development, taxes and assessments levied in substitution or supplementation in whole or in part of any such taxes and assessments and the Development's share of any real estate taxes and assessments under any reciprocal easement agreement, common area agreement or similar agreement as to the Development; (b) all personal property taxes for property that is owned by Landlord and used in connection with the operation, maintenance and repair of the Development; and (c) all costs and fees incurred in connection with seeking reductions in any tax liabilities described in (a) and (b), including, without limitation, any costs incurred by Landlord for compliance, review and appeal of tax liabilities. Without limitation, Taxes shall not include any income, capital levy, capital stock, gift, estate or inheritance tax.

EXHIBIT C

WORK LETTER

This Exhibit is attached to and made a part of the Lease by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**") for space in the Building located at 471 El Camino Real, Santa Clara, California.

1. This Work Letter shall set forth the obligations of Landlord and Tenant with respect to the improvements to be performed in the Premises for Tenant's use. All improvements described in this Work Letter to be constructed in and upon the Premises by Landlord are hereinafter referred to as the "**Landlord Work**". With the exception of the improvements described in Section 2 below and set forth in the Landlord-Funded Space Plan, attached hereto as Schedule 1, it is agreed that construction of the Landlord Work will be completed at Tenant's sole cost and expense, subject to the Amortized Allowance (as defined below). Landlord shall enter into a direct contract for the Landlord Work with a general contractor selected by Landlord. In addition, Landlord shall have the right to select and/or approve of any subcontractors used in connection with the Landlord Work.

2. Landlord, at its sole cost and expense, shall perform improvements to the Premises in accordance with the space plan attached hereto as Schedule 1 (the "**Landlord-Funded Space Plan**") using Building standard methods, materials and finishes.

3. Other than the improvements described in Section 2 above and set forth in the Landlord-Funded Space Plan, the Landlord Work will be completed at Tenant's sole cost and expense, subject to the Amortized Allowance, and shall be completed in accordance with (i) the final architectural, electrical and mechanical construction drawings, plans and specifications (called "**Final Plans**"), and (ii) the space plan approved by Landlord and Tenant and attached hereto as Schedule 2 (the "**Tenant-Funded Space Plan**"), which both (i) and (ii) have been approved by Landlord and Landlord's architect and engineers and shall comply with their requirements to avoid aesthetic or other conflicts with the design and function of the balance of the Building.

4. A written estimate setting forth the anticipated cost to construct the work (the "**Tenant-Funded Work**") outlined in the Tenant-Funded Space Plan, including but not limited to labor and materials, contractor's fees and permit fees is attached hereto as Schedule 2(a) (the "**Estimate**"). Concurrently with the delivery of this Lease, Tenant shall deliver to Landlord the amount equal to $89,999.00. This amount shall be comprised of the total cost set forth in the Estimate plus a construction management fee payable to Landlord equivalent to three percent (3%) of the total cost of construction, including any design fees, that exceeds the sum of the Allowance and the Amortized Allowance (as defined in Paragraph 6 hereof), such amount exceeding the sum of the Allowance and the Amortized Allowance being herein referred to as the "**Excess Costs**". Tenant acknowledges and agrees that when the actual amount of the Tenant-Funded Work becomes known, if Tenant has underpaid the Excess Costs, then upon notice by Landlord to Tenant, Tenant shall reimburse Landlord for such shortfall within ten (10) days after Landlord delivers to Tenant said notice. Within thirty (30) days of Substantial Completion, Landlord will reconcile the Excess Costs paid by Tenant hereunder with the actual costs reflected in the Estimate, and any overpayment by Tenant shall be reimbursed by Landlord within such 30-day period. The statements of costs submitted to Landlord by Landlord's contractors shall be conclusive for purposes of determining the actual cost of the items described therein. The amounts payable by Tenant hereunder constitute Rent payable pursuant to the Lease, and the failure to timely pay same constitutes an event of Default under the Lease.

5. If Tenant shall request any change, addition or alteration in any of the Final Plans after approval by Landlord, Landlord shall have such revisions to the drawings prepared, and Tenant shall reimburse Landlord for the cost thereof, plus any applicable state sales or use tax thereon, upon demand. Promptly upon completion of the revisions, Landlord shall notify Tenant in writing of the increased cost which will be chargeable to Tenant by reason of such change, addition or deletion. Tenant, within one (1) business day, shall notify Landlord in writing whether it desires to proceed with such change, addition or deletion, provided that such changes, additions or deletions shall constitute a Tenant Delay to the extent they impact the date of Substantial Completion. In the absence of such written authorization, Landlord shall have the option to continue work on the Premises disregarding the requested change, addition or alteration, or

Landlord may elect to discontinue work on the Premises until it receives notice of Tenant's decision, in which event Tenant shall be responsible for any Tenant Delay in completion of the Premises resulting therefrom. If such revisions result in a higher estimate of the cost of construction and/or higher actual construction costs which exceed the Estimate, such increased estimate or costs shall be deemed Excess Costs pursuant to Paragraph 4 hereof and Tenant shall pay such Excess Costs, plus any applicable state sales or use tax thereon, upon demand. Notwithstanding the foregoing, Landlord and Tenant shall work together to coordinate the timing of completion of the Tenant-Funded Work. Such coordination shall include reasonable ongoing consultation and communication regarding work scheduling.

6. Provided Tenant is not in default, Landlord agrees to provide Tenant with an allowance of $85,000 as contribution toward the cost of completing the Tenant-Funded Work (the "**Allowance**"). In addition to the foregoing, Landlord agrees to provide Tenant with an allowance (the "**Amortized Allowance**") in an amount not to exceed $100,000.00 (*i.e.*, approximately $4.58 per rentable square foot of the Premises) to be applied toward the cost of the Tenant-Funded Work. The amount of Amortized Allowance actually disbursed by Landlord shall be confirmed in writing as the "**Amortized Allowance Amount**". As a condition to the disbursement of the Amortized Allowance Amount, no later than thirty (30) days following the Substantial Completion of the Landlord Work, Tenant shall execute and deliver an amendment to the Lease pursuant to which Tenant agrees to pay additional monthly Base Rent in an amount equal to the amount necessary to fully amortize the Amortized Allowance Amount over the entirety of the Term at an interest rate equal to eight percent (8%) per annum (the "**Amortized Allowance Rent**"), provided, however, that such Amortized Allowance Rent shall not be subject to annual escalation along with the Base Rent set forth above. Tenant shall have the right to pay off the unamortized principal balance of the Amortized Allowance Amount (together with all accrued but unpaid interest thereon) at any time during the Term without premium or penalty. Tenant shall not be entitled to receive any cash payment or credit against monthly Base Rent or otherwise for any unused portion of the Amortized Allowance which is not used to pay for the Tenant-Funded Work.

7. For purposes of this Lease, including for purposes of determining the Commencement Date (pursuant to Section 2 of the Lease), the Landlord Work shall be "**Substantially Complete**" upon the completion of the Landlord Work in the Premises pursuant to the Tenant-Funded Space Plan, with the exception of any punch list items that do not materially and adversely affect Tenant's use and occupancy of the Premises and any tenant fixtures, work-stations, built-in furniture, or equipment to be installed by or on behalf of Tenant in accordance with the terms of this Work Letter, regardless of whether such items are reflected in the Final Plans. Tenant will be deemed to have accepted the Premises in its condition as of the Commencement Date, subject to all Laws (as defined in Section 4 of the Lease) governing and regulating the use and occupancy of the Premises and to have acknowledged that there are no items needing work or repair by Landlord, with the exception of any punch list items as described above. Notwithstanding the foregoing, if it is determined that the Premises were not in good condition and in compliance with applicable laws, rules and regulations as of the Commencement Date, and such non-compliance is not due to Tenant's particular use of, or activities or work in the Premises, Landlord shall (as Tenant's sole remedy therefor) correct such non-compliance at Landlord's cost within a commercially reasonable time after Landlord's receipt of written notice thereof (provided that such notice must be received within sixty (60) days following the Commencement Date).

8. If there shall be a delay or there are delays in the Substantial Completion of the Premises as a direct, indirect, partial, or total result of any of the following (each a "**Tenant Delay**", and collectively, "**Tenant Delays**"):

    a. Tenant's failure to comply with its obligations under this Exhibit C or the Lease;

    b. Tenant's request for changes to the Landlord Work;

    c. Tenant's specification of any materials or equipment with long lead times; or

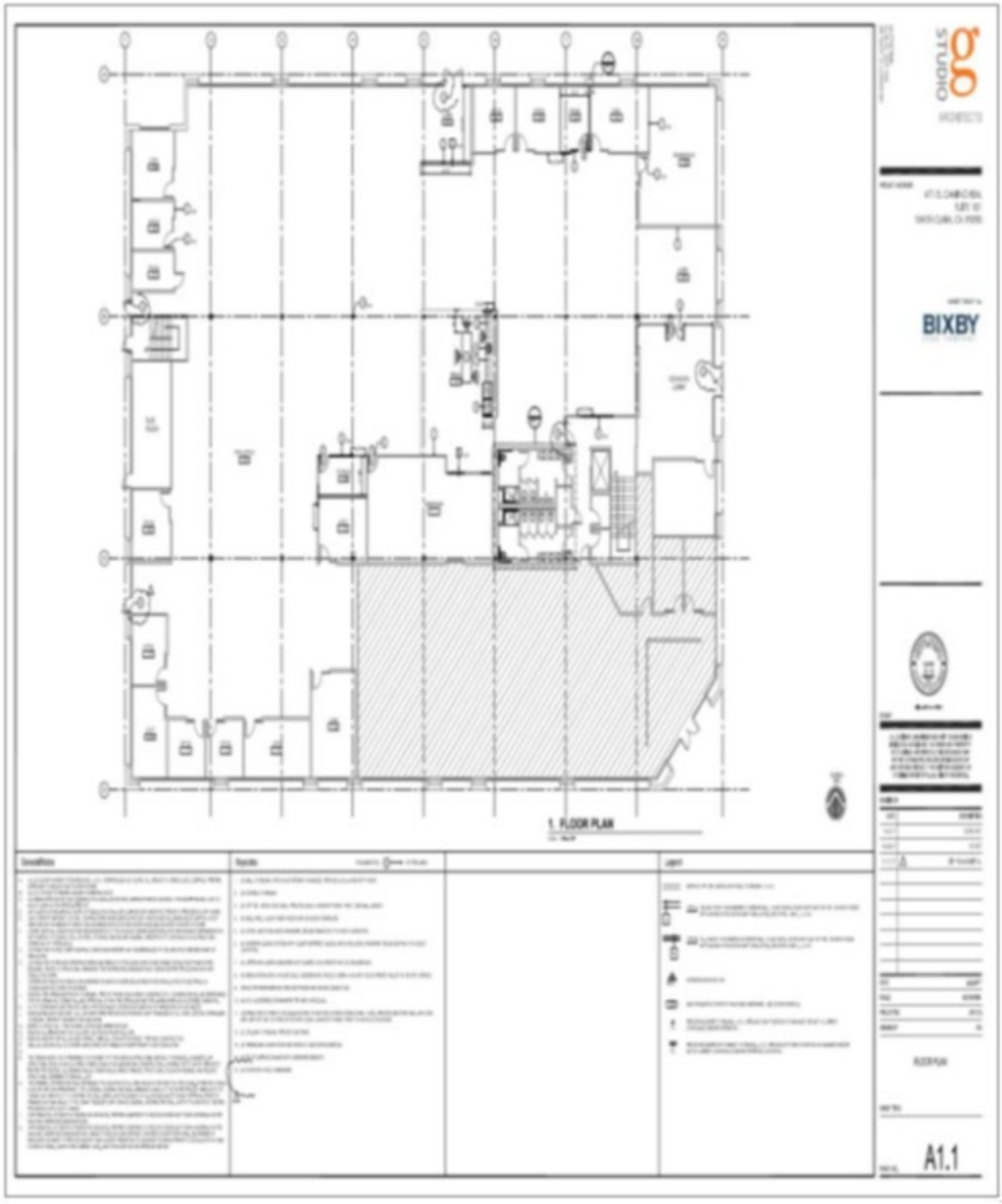
    c. any other acts or omissions of Tenant, the Tenant Related Parties or their respective contractors or vendors

then, notwithstanding anything to the contrary set forth in the Lease and regardless of the actual date of Substantial Completion, the Lease Commencement Date shall be deemed to be the date the Lease Commencement Date would have occurred if no Tenant Delays, as set forth above, had occurred.

9. This Exhibit shall not be deemed applicable to any additional space added to the Premises at any time or from time to time, whether by any options under the Lease or otherwise, or to any portion of the original Premises or any additions to the Premises in the event of a renewal or extension of the original Term of the Lease, whether by any options under the Lease or otherwise, unless expressly so provided in the Lease or any amendment or supplement to the Lease.

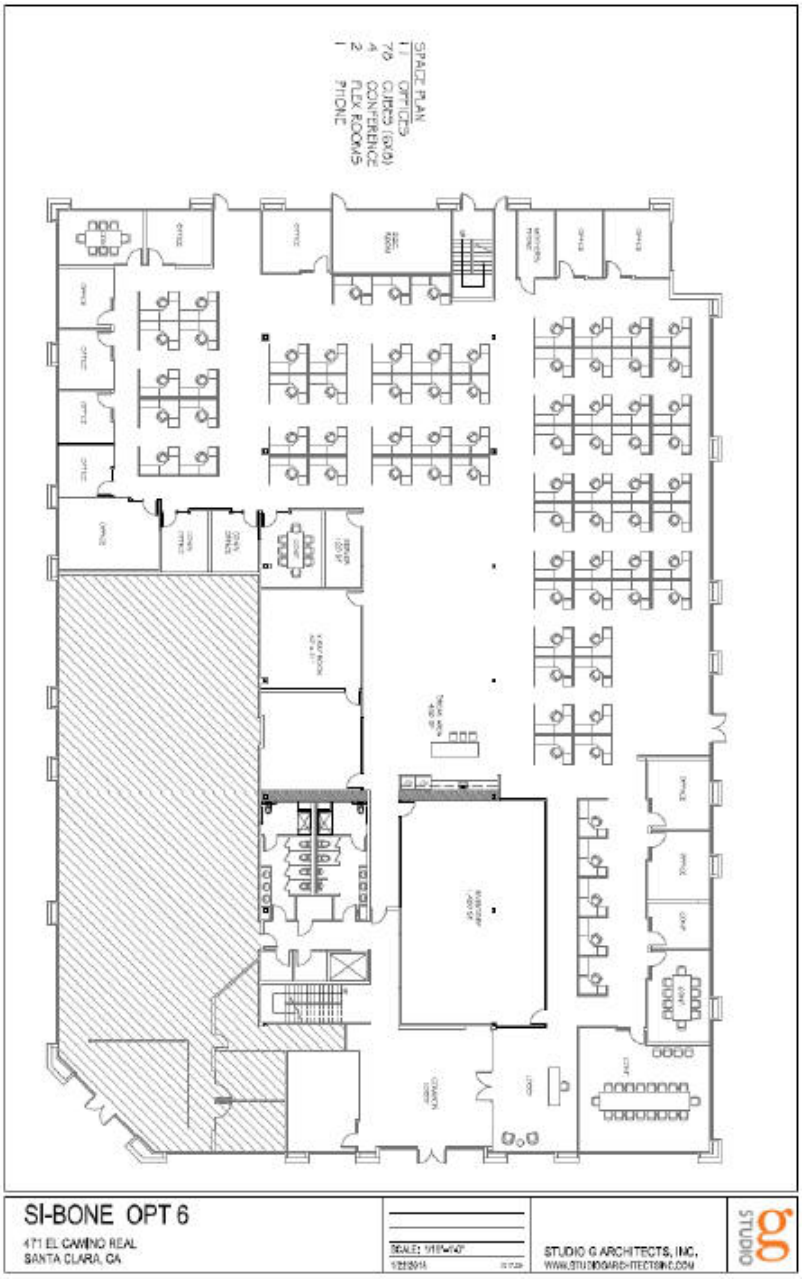
SCHEDULE 1 TO EXHIBIT C

LANDLORD-FUNDED SPACE PLAN



SCHEDULE 2 TO EXHIBIT C

TENANT-FUNDED SPACE PLAN



SCHEDULE 2(a) TO EXHIBIT C

ESTIMATE

PRELIMINARY ESTIMATE

Date: 1/30/18
Property: University Station
Building: 471 El Camino Real
Suite: 100
Tenant: 8I-BONE, Inc.
RSF: 21,848

			COST	$RSF
Construction Costs:	Gidel & Kocal Construction		$247,280	$11.32
Architecture: IA Interior Architects	Space Plan		$ 1,000	$ 0.05
	Pricing Plan		$ —	$ —
	Schematic Design		$ —	$ —
	Design Development		$ —	$ —
	Field Verification		$ —	$ —
	Construction Documents		$ 9,000	$ 0.41
	Plancheck Submittal		$ —	$ —
	City Revisions		$ —	$ —
	Construction Administration		$ 5,000	$ 0.23
	Reimbursables (allowance)		$ 1,000	$ 0.05
Engineering:	MEP Construction Documents W' Title 24 (Design Build)		$ —	$ —
	Title 24 Commissioning (allowance)		$ —	$ —
	Fire Sprinkler Design Build		Incl	$ —
	Fire Life Safety Design Build		Incl	$ —
Permits	On Construction Cost Above (allowance)	1.50%	$ 3,709	$ 0.17
Contingency	On All Costs Above	0%	$ —	$ —
Bixby CM Fee	On All Costs Above	3%	8,010	$ 0.37
TOTAL PROJECT COST (NOT INCL. ALTERNATES BELOW)			$274,999	$12.59
Alternates:				
1			$ —	$ —
2			$ —	$ —
SUBTOTAL:			$ —	$ —
TOTAL PROJECT COST (INCLUDING ALTERNATES)			$274,999	$12.68

Scope:

Qualifications:

EXHIBIT D

BUILDING RULES AND REGULATIONS

This Exhibit is attached to and made a part of the Lease by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**") for space in the Building located at 471 El Camino Real, Santa Clara, California.

The following rules and regulations shall apply, where applicable, to the Premises, the Building, the parking garage (if any), the Development and the appurtenances. In the event of a conflict between the following rules and regulations and the remainder of the terms of the Lease, the remainder of the terms of the Lease shall control. Capitalized terms have the same meaning as defined in the Lease.

1. Sidewalks, doorways, vestibules, halls, stairways and other similar areas shall not be obstructed by Tenant or used by Tenant for any purpose other than ingress and egress to and from the Premises. No rubbish, litter, trash, or material shall be placed, emptied, or thrown in those areas. At no time shall Tenant permit Tenant's employees to loiter in Common Areas or elsewhere about the Building or Development.

2. Plumbing fixtures and appliances shall be used only for the purposes for which designed, and no sweepings, rubbish, rags or other unsuitable material shall be thrown or placed in the fixtures or appliances. Damage resulting to fixtures or appliances by Tenant, its agents, employees or invitees, shall be paid for by Tenant, and Landlord shall not be responsible for the damage.

3. No signs, advertisements or notices shall be painted or affixed to windows, doors or other parts of the Building, except those of such color, size, style and in such places as are first approved in writing by Landlord. All tenant identification and suite numbers at the entrance to the Premises shall be installed by Landlord, at Tenant's cost and expense, using the standard graphics for the Building. Except in connection with the hanging of lightweight pictures and wall decorations, no nails, hooks or screws shall be inserted into any part of the Premises or Building except by the Building maintenance personnel without Landlord's prior approval, which approval shall not be unreasonably withheld.

4. Landlord may provide and maintain in the first floor (main lobby) of the Building an alphabetical directory board or other directory device listing tenants, and no other directory shall be permitted unless previously consented to by Landlord in writing.

5. Tenant shall not place any lock(s) on any door in the Premises or Building without Landlord's prior written consent, which consent shall not be unreasonably withheld, and Landlord shall have the right to retain at all times and to use keys or other access codes or devices to all locks within and into the Premises. A reasonable number of keys to the locks on the entry doors in the Premises shall be furnished by Landlord to Tenant at Tenant's cost, and Tenant shall not make any duplicate keys. All keys shall be returned to Landlord at the expiration or early termination of this Lease.

6. All contractors, contractor's representatives and installation technicians performing work in the Building shall be subject to Landlord's prior approval, which approval shall not be unreasonably withheld, and shall be required to comply with Landlord's standard rules, regulations, policies and procedures, which may be revised from time to time.

7. Movement in or out of the Building of furniture or office equipment, or dispatch or receipt by Tenant of merchandise or materials requiring the use of elevators, stairways, lobby areas or loading dock areas, shall be restricted to hours reasonably designated by Landlord. Tenant shall obtain Landlord's prior approval by providing a detailed listing of the activity. If approved by Landlord, the activity shall be under the supervision of Landlord and performed in the manner required by Landlord. Tenant shall assume all risk for damage to articles moved and injury to any persons resulting from the activity. If equipment, property, or personnel of Landlord or of any other party is damaged or injured as a result of or in connection with the activity, Tenant shall be solely liable for any resulting damage or loss.

8. Landlord shall have the right to approve the weight, size, or location of heavy equipment or articles in and about the Premises, which approval shall not be unreasonably withheld. Damage to the Building by the installation, maintenance, operation, existence or removal of Tenant's Property shall be repaired at Tenant's sole expense.

9. Corridor doors, when not in use, shall be kept closed.

10. Tenant shall not: (i) make or permit any improper, objectionable or unpleasant noises or odors in the Building, or otherwise interfere in any way with other tenants or persons having business with them; (ii) solicit business or distribute, or cause to be distributed, in any portion of the Building, handbills, promotional materials or other advertising; or (iii) conduct or permit other activities in the Building that might, in Landlord's sole opinion, constitute a nuisance.

11. No animals, except those assisting handicapped persons, shall be brought into the Building or kept in or about the Premises.

12. No inflammable, explosive or dangerous fluids or substances shall be used or kept by Tenant in the Premises, Building or about the Development, except for those substances as are typically found in similar premises used for general office and research and development purposes and are being used by Tenant in a safe manner and in accordance with all applicable Laws, rules and regulations. Tenant shall not, without Landlord's prior written consent, use, store, install, spill, remove, release or dispose of, within or about the Premises or any other portion of the Development, any asbestos-containing materials or any solid, liquid or gaseous material now or subsequently considered toxic or hazardous under the provisions of 42 U.S.C. Section 9601 et seq. or any other applicable environmental Laws which may now or later be in effect. Tenant shall comply with all Laws pertaining to and governing the use of these materials by Tenant, and shall remain solely liable for the costs of abatement and removal.

13. Tenant shall not use or occupy the Premises in any manner or for any purpose which might injure the reputation or impair the present or future value of the Premises or the Building. Tenant shall not use, or permit any part of the Premises to be used, for lodging, sleeping or for any illegal purpose.

14. Tenant shall not take any action which would violate Landlord's labor contracts or which would cause a work stoppage, picketing, labor disruption or dispute, or interfere with Landlord's or any other tenant's or occupant's business or with the rights and privileges of any person lawfully in the Building ("**Labor Disruption**"). Tenant shall take the actions necessary to resolve the Labor Disruption, and shall have pickets removed and, at the request of Landlord, immediately terminate any work in the Premises that gave rise to the Labor Disruption, until Landlord gives its written consent for the work to resume. Tenant shall have no claim for damages against Landlord or any of the Landlord Related Parties, nor shall the Commencement Date of the Term be extended as a result of the above actions.

15. Tenant shall not install, operate or maintain in the Premises or in any other area of the Building, electrical equipment that would overload the electrical system beyond its capacity for proper, efficient and safe operation as determined solely by Landlord. Tenant shall not furnish cooling or heating to the Premises, including, without limitation, the use of electronic or gas heating devices, without Landlord's prior written consent. Tenant shall not use more than its proportionate share of telephone lines and other telecommunication facilities available to service the Building.

16. Tenant shall not operate or permit to be operated a coin or token operated vending machine or similar device (including, without limitation, telephones, lockers, toilets, scales, amusement devices and machines for sale of beverages, foods, candy, cigarettes and other goods), except for machines for the exclusive use of Tenant's employees and invitees.

17. Bicycles and other vehicles are not permitted inside the Building or on the walkways outside the Building, except in areas designated by Landlord.

18. Landlord may from time to time adopt systems and procedures for the security and safety of the Building, its occupants, entry, use and contents. Tenant, its agents, employees, contractors, guests and invitees shall comply with Landlord's systems and procedures.

19. Landlord shall have the right to prohibit the use of the name of the Building or any other publicity by Tenant that in Landlord's sole opinion may impair the reputation of the Building or its desirability. Upon written notice from Landlord, Tenant shall refrain from and discontinue such publicity immediately.

20. Neither Tenant nor its agents, employees, contractors, guests or invitees shall smoke or permit smoking in the Common Areas, unless the Common Areas have been declared a designated smoking area by Landlord, nor shall the above parties allow smoke from the Premises to emanate into the Common Areas or any other part of the Building. Landlord shall have the right to designate the Building (including the Premises) as a non-smoking building.

21. Landlord shall have the right to designate and approve standard window coverings for the Premises and to establish rules to assure that the Building presents a uniform exterior appearance. Tenant shall ensure, to the extent reasonably practicable, that window coverings are closed on windows in the Premises while they are exposed to the direct rays of the sun.

22. Deliveries to and from the Premises shall be made only at the times, in the areas and through the entrances and exits reasonably designated by Landlord. Tenant shall not make deliveries to or from the Premises in a manner that might interfere with the use by any other tenant of its premises or of the Common Areas, any pedestrian use, or any use which is inconsistent with good business practice.

23. The work of cleaning personnel shall not be hindered by Tenant after 5:30 P.M., and cleaning work may be done at any time when the offices are vacant. Windows, doors and fixtures may be cleaned at any time. Tenant shall provide adequate waste and rubbish receptacles to prevent unreasonable hardship to the cleaning service.

PARKING RULES AND REGULATIONS

(i) Landlord reserves the right, to establish and reasonably change the hours for the parking areas, on a non-discriminatory basis, from time to time. Tenant shall not store or permit its employees to store any automobiles in the parking areas without the prior written consent of the operator. Except for emergency repairs, Tenant and its employees shall not perform any work on any automobiles while located in the parking areas, or on the Development. If it is necessary for Tenant or its employees to leave an automobile in the Parking Facility overnight, Tenant shall provide the operator with prior notice thereof designating the license plate number and model of such automobile.

(ii) Cars must be parked entirely within the stall lines painted on the floor, and only small cars may be parked in areas reserved for small cars.

(iii) All directional signs and arrows must be observed.

(iv) The speed limit shall be 5 miles per hour.

(v) Parking spaces reserved for handicapped persons must be used only by vehicles properly designated.

(vi) Parking is prohibited in all areas not expressly designated for parking, including without limitation:

- (a) areas not striped for parking
- (b) aisles
- (c) where "no parking" signs are posted
- (d) ramps
- (e) loading zones

(vii) Parking stickers, key cards or any other devices or forms of identification or entry supplied by the operator shall remain the property of the operator. Such device must be displayed as requested and may not be mutilated in any manner. The serial number of the parking identification device may not be obliterated. Parking passes and devices are not transferable and any pass or device in the possession of an unauthorized holder will be void.

(viii) Parking areas managers or attendants are not authorized to make or allow any exceptions to these Rules.

(ix) Every parker is required to park and lock his/her own car.

(x) Loss or theft of parking pass, identification, key cards or other such devices must be reported to Landlord and to the parking areas manager immediately. Any parking devices reported lost or stolen found on any authorized car will be confiscated and the illegal holder will be subject to prosecution. Lost or stolen passes and devices found by Tenant or its employees must be reported to the office of the parking areas immediately.

(xi) Washing, waxing, cleaning or servicing of any vehicle by the customer and/or his agents is prohibited. Parking spaces may be used only for parking automobiles.

(xii) Tenant agrees to acquaint all persons to whom Tenant assigns a parking space with these Rules.

1. TENANT ACKNOWLEDGES AND AGREES THAT, TO THE FULLEST EXTENT PERMITTED BY LAW, LANDLORD SHALL NOT BE RESPONSIBLE FOR ANY LOSS OR DAMAGE TO TENANT OR TENANT'S PROPERTY (INCLUDING, WITHOUT LIMITATIONS, ANY LOSS OR DAMAGE TO TENANT'S AUTOMOBILE OR THE CONTENTS THEREOF DUE TO THEFT, VANDALISM OR ACCIDENT) ARISING FROM OR RELATED TO TENANT'S USE OF THE PARKING AREAS OR EXERCISE OF ANY RIGHTS UNDER THIS PARKING AGREEMENT, WHETHER OR NOT SUCH LOSS OR DAMAGE RESULTS FROM LANDLORD'S ACTIVE NEGLIGENCE OR NEGLIGENT OMISSION. THE LIMITATION ON LANDLORD'S LIABILITY UNDER THE PRECEDING SENTENCE SHALL NOT APPLY HOWEVER TO LOSS OR DAMAGE ARISING DIRECTLY FROM LANDLORD'S WILLFUL MISCONDUCT.

2. Without limiting the provisions of Paragraph 1 above, Tenant hereby voluntarily releases, discharges, waives and relinquishes any and all actions or causes of action for personal injury or property damage occurring to Tenant arising as a result of parking in the parking areas or any activities incidental thereto, wherever or however the same may occur, and further agrees that Tenant will not prosecute any claim for personal injury or property damage against Landlord or any of its officers, agents, servants or employees for any said causes of action. It is the intention of Tenant by this instrument, to exempt and relieve Landlord from liability for personal injury or property damage caused by negligence.

3. The provisions of Section 29 of the Lease are hereby incorporated by reference as if fully recited.

By executing the Lease to which this Exhibit D is attached, Tenant acknowledges that it has read and agreed to be bound by the forgoing Building Rules and Regulations. Tenant further confirms that it has been fully and completely advised of the potential dangers incidental to parking in the parking areas and the terms and conditions set forth above.

EXHIBIT E

STATEMENT OF TENANT REGARDING LEASE COMMENCEMENT

This Exhibit is attached to and made a part of the Lease by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**") for space in the Building located at 471 El Camino Real, Santa Clara, California.

1) The undersigned has entered into occupancy of the Premises described in said Lease on , 20 .

2) All conditions under said Lease to be performed by Landlord have been satisfied, and on this date there are not existing defenses or offsets which the undersigned has against the enforcement of said Lease by Landlord;

3) The Term of the Lease commenced, or will commence, as of , 20 , which date shall be the "**Commencement Date**" under the terms of the Lease;

4) The "**Expiration Date**" of the Lease is , 20 , subject to extension or earlier termination in accordance with the terms and conditions of the Lease.

5) Tenant accepts the Premises in its "**AS-IS**" condition as of the date of Tenant's possession thereof.

Yours very truly,

SI-BONE, INC.,
a Delaware corporation

By: _____
Name: _____
Its: _____

EXHIBIT F

RECORDED RESTRICTIONS

This Exhibit is attached to and made a part of the Lease by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**") for space in the Building located at 471 El Camino Real, Santa Clara, California.

Declaration of Covenants, Conditions and Restrictions and Reservation of Easements dated September 10, 1998 and recorded in the Official Records of Santa Clara County on September 15, 1998 as Document No. 14390154.

RIDER NO. 1

EXTENSION OPTION RIDER

This Rider No. 1 is made and entered into by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**"), as of the day and year of the Lease between Landlord and Tenant to which this Rider is attached. Landlord and Tenant hereby agree that, notwithstanding anything contained in the Lease to the contrary, the provisions set forth below shall be deemed to be part of the Lease and shall supersede any inconsistent provisions of the Lease. All references in the Lease and in this Rider to the "Lease" shall be construed to mean the Lease (and all Exhibits and Riders attached thereto), as amended and supplemented by this Rider. All capitalized terms not defined in this Rider shall have the same meaning as set forth in the Lease.

1. Landlord hereby grants to Tenant (1) option (the "**Extension Option**") to extend the Term of the Lease for an additional period of five (5) years (the "**Option Term**"), on the same terms, covenants and conditions as provided for in the Lease during the initial Term, except for the monthly Base Rent, which shall equal the "fair market rental rate" for the Premises for the Option Term as defined and determined in accordance with the provisions of Section 3 below.

2. The Extension Option must be exercised, if at all, by written notice ("**Extension Notice**") delivered by Tenant to Landlord no sooner than that date which is twelve (12) months and no later than that date which is nine (9) months prior to the expiration of the then current Term of the Lease. The Extension Option shall, at Landlord's sole option, not be deemed to be properly exercised if, at the time the Extension Option is exercised or on the scheduled commencement date for the Option Term, Tenant has (a) committed an uncured event of Default whose cure period has expired pursuant to Sections 19 and 20 of the Lease, (b) assigned all or any portion of the Lease or its interest therein, or (c) sublet all or any portion of the Premises. Provided Tenant has properly and timely exercised the Extension Option, the then current term of the Lease shall be extended by the Option Term, and all terms, covenants and conditions of the Lease shall remain unmodified and in full force and effect, except that the monthly Base Rent shall be as set forth above.

3. If the Monthly Base Rent for the Option Term shall be the fair market rental rate pursuant to Section 1 above, then such fair market rate shall be determined in accordance with the Fair Market Rental Rate Rider attached to the Lease as Rider No. 2.

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RIDER NO. 2

FAIR MARKET RENTAL RATE

This Rider No. 2 is made and entered into by and **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**"), as of the day and year of the Lease between Landlord and Tenant to which this Rider is attached. Landlord and Tenant hereby agree that, notwithstanding anything contained in the Lease to the contrary, the provisions set forth below shall be deemed to be part of the Lease and shall supersede any inconsistent provisions of the Lease. All references in the Lease and in this Rider to the "Lease" shall be construed to mean the Lease (and all Exhibits and Riders attached thereto), as amended and supplemented by this Rider. All capitalized terms not defined in this Rider shall have the same meaning as set forth in the Lease.

1. The term "**fair market rental rate**" as used in the Lease and any Rider attached thereto shall mean the annual amount per square foot, projected during the Option Term that a willing, non-equity renewal tenant (excluding sublease and assignment transactions) would pay, and a willing, institutional landlord of a comparable Class "A" office building located in the Santa Clara, California market area (the "**Comparison Area**") would accept, in an arm's length transaction (what Landlord is accepting in then current transactions for the buildings located in the Project may be used for purposes of projecting rent for the Option Term), for space of comparable size, quality and floor height as the Premises, taking into account the age, quality and layout of the existing improvements in the Premises, and taking into account items that professional real estate brokers or professional real estate appraisers customarily consider, including, but not limited to, rental rates, space availability, tenant size, tenant improvement allowances, parking charges and any other lease considerations, if any, then being charged or granted by Landlord or the lessors of such similar office buildings. All economic terms other than Monthly Base Rent, such as tenant improvement allowance amounts, if any, operating expense allowances, parking charges, etc., will be established by Landlord and will be factored into the determination of the fair market rental rate for the Option Term. Accordingly, the fair market rental rate will be an effective rate, not specifically including, but accounting for, the appropriate economic considerations described above. The fair market rental rate shall include the periodic rental increases that would be included for space leased for the period of the Option Term.

2. In the event the determination of fair market rental rate is required under the Lease (as set forth in Rider No. 1 above), Landlord shall provide written notice of Landlord's determination of the fair market rental rate not later than ninety (90) days following Landlord's receipt of Tenant's Extension Notice. Tenant shall have ten (10) days ("**Tenant's Review Period**") after receipt of Landlord's notice of the fair market rental rate within which to accept such fair market rental rate or to reasonably object thereto in writing. Failure of Tenant to so object to the fair market rental rate submitted by Landlord in writing within Tenant's Review Period shall conclusively be deemed Tenant's approval and acceptance thereof. If within Tenant's Review Period Tenant objects to or is deemed to have disapproved the fair market rental rate submitted by Landlord, Landlord and Tenant will meet together with their respective legal counsel to present and discuss their individual determinations of the fair market rental rate for the Premises under the parameters set forth in Section 1 above and shall diligently and in good faith attempt to negotiate a rental rate on the basis of such individual determinations. Such meeting shall occur no later than ten (10) days after the expiration of Tenant's Review Period. The parties shall each provide the other with such supporting information and documentation as they deem appropriate. At such meeting if Landlord and Tenant are unable to agree upon the fair market rental rate, they shall each submit to the other their respective best and final offer as to the fair market rental rate. If Landlord and Tenant fail to reach agreement on such fair market rental rate within five (5) business days following such a meeting (the "**Outside Agreement Date**"), Tenant's Extension Option will be deemed null and void unless Tenant demands appraisal, in which event each party's determination shall be submitted to appraisal in accordance with the provisions of Section 3 below.

3. (a) Landlord and Tenant shall each appoint one (1) competent, independent and impartial commercial real estate broker with at least ten (10) years full time commercial real estate brokerage experience in the Comparison Area (each a "**broker**"). The determination of the brokers shall be limited solely to the issue of whether Landlord's or Tenant's last proposed (as of the Outside Agreement Date) best and final fair market rental rate for the Premises is the closest to the actual fair market rental rate for the Premises as determined by the brokers, taking into account the requirements specified in Section 1 above. Each such broker shall be appointed within fifteen (15) days after the Outside Agreement Date.

(b) The two (2) brokers so appointed shall within fifteen (15) days of the date of the appointment of the last appointed broker agree upon and appoint a third broker who shall be qualified under the same criteria set forth hereinabove for qualification of the initial two (2) brokers.

(c) The three (3) brokers shall within thirty (30) days of the appointment of the third broker reach a decision as to whether the parties shall use Landlord's or Tenant's submitted best and final fair market rental rate, and shall notify Landlord and Tenant thereof. During such thirty (30) day period, Landlord and Tenant may submit to the brokers such information and documentation to support their respective positions as they shall deem reasonably relevant and Landlord and Tenant may each appear before the brokers jointly to question and respond to questions from the brokers.

(d) The decision of the majority of the three (3) brokers shall be binding upon Landlord and Tenant and neither party shall have the right to reject the decision or to nullify the exercise of the Extension Option. If either Landlord or Tenant fails to appoint a broker within the time period specified in Section 3(a) hereinabove, the broker appointed by one of them shall within thirty (30) days following the date on which the party failing to appoint a broker could have last appointed such broker reach a decision based upon the same procedures as set forth above (i.*e.*, by selecting either Landlord's or Tenant's submitted best and final fair market rental rate), and shall notify Landlord and Tenant thereof, and such broker's decision shall be binding upon Landlord and Tenant and neither party shall have the right to reject the decision or to nullify the exercise of the Extension Option.

(e) If the two (2) brokers fail to agree upon and timely appoint a third broker, either party, upon ten (10) days written notice to the other party, can apply to the Presiding Judge of the Superior Court of Orange County to appoint a third broker meeting the qualifications set forth herein. The third broker, however, selected, shall be a person who has not previously acted in any capacity for either party.

(f) The cost of each party's broker shall be the responsibility of the party selecting such broker, and the cost of the third broker (or arbitration, if necessary) shall be shared equally by Landlord and Tenant.

(g) If the process described hereinabove has not resulted in a selection of either Landlord's or Tenant's submitted best and final fair market rental rate by the commencement of the applicable lease term, then the fair market rental rate estimated by Landlord will be used until the broker(s) reach a decision, with an appropriate rental credit and other adjustments for any overpayments of Monthly Base Rent or other amounts if the brokers select Tenant's submitted best and final estimate of the fair market rental rate. The parties shall enter into an amendment to this Lease confirming the terms of the decision.

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RIDER NO. 3

OPTIONS IN GENERAL

This Rider No. 3 is made and entered into by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**"), as of the day and year of the Lease between Landlord and Tenant to which this Rider is attached. Landlord and Tenant hereby agree that, notwithstanding anything contained in the Lease to the contrary, the provisions set forth below shall be deemed to be part of the Lease and shall supersede any inconsistent provisions of the Lease. All references in the Lease and in this Rider to the "Lease" shall be construed to mean the Lease (and all Exhibits and Riders attached thereto), as amended and supplemented by this Rider. All capitalized terms not defined in this Rider shall have the same meaning as set forth in the Lease.

(a) **Definition.** As used in this Lease and any Rider or Exhibit attached hereto, the word "**Option**" shall mean all options granted to Tenant under the Lease, including the following:

- Extension Option pursuant to Rider No. 1 attached hereto.

(b) **Option Personal.** The Option granted to Tenant is personal to the original Tenant executing the Lease (the "**Original Tenant**") and may be exercised only by the Original Tenant while occupying the entire Premises and without the intent of thereafter assigning the Lease or subletting the Premises and may not be exercised or be assigned, voluntarily or involuntarily, by any person or entity other than the Original Tenant. The Option granted to Tenant under the Lease is not assignable separate and apart from the Lease, nor may the Option be separated from the Lease in any manner, either by reservation or otherwise.

(c) **Effect of Default on Options.** Tenant will have no right to exercise any Option, notwithstanding any provision of the grant of option to the contrary, and Tenant's exercise of any Option may be nullified by Landlord and deemed of no further force or effect, if (i) Tenant is in default of any monetary obligation or material non-monetary obligation under the terms of the Lease (or if Tenant would be in such default under the Lease but for the passage of time or the giving of notice, or both) as of Tenant's exercise of the Option in question or at any time after the exercise of any such Option and prior to the commencement of the Option event, or (ii) Landlord has given Tenant two (2) or more notices of default, whether or not such defaults are subsequently cured, during any twelve (12) consecutive month period of the Lease.

(d) **Option as Economic Term.** The Option is hereby deemed an economic term which Landlord, in its sole and absolute discretion, may or may not offer in conjunction with any future extensions of the Term.

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UNIVERSITY STATION

FIRST AMENDMENT TO LEASE
(SI-BONE, INC.)

THIS FIRST AMENDMENT TO LEASE (this "**Amendment**") is made as of April 16, 2018, by and between **BIXBY SPE FINANCE 11, LLC,** a Delaware limited liability company ("**Landlord**") and **SI-BONE, INC.**, a Delaware corporation ("**Tenant**").

RECITALS

A. Landlord and Tenant are parties to that certain Office Lease Agreement dated as of February 2, 2018 (the "**Lease**"), with respect to certain premises within that certain building located at 471 El Camino Real, Santa Clara, California (the "**Building**"). All capitalized terms used herein and not otherwise defined herein shall have the meanings set forth in the Lease.

B. Pursuant to the Lease, Tenant leases from Landlord certain Premises located on the first (1st) floor of the Building, consisting of approximately 21,848 square feet, as more particularly described in the Lease.

C. Landlord and Tenant desire to amend the Lease confirm the suite number of the Premises.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants contained herein, Landlord and Tenant agree that the Lease is hereby amended as follows:

1. LEASE MODIFICATION. Under the Lease, the Premises was incorrectly identified as Suite 100, although Tenant actually leases the suite commonly known as Suite 101. Accordingly, Landlord and Tenant hereby confirm that the Premises consist of Suite 101. The Lease, except as amended hereby, remains unamended, and, as amended hereby, remains in full force and effect.

2. COMMENCEMENT DATE. The Term of the Lease commenced, or will commence, as of April 1, 2018, which date shall be the "**Commencement Date"** under the terms of the Lease.

3. AMORTIZED ALLOWANCE RENT; UPDATED RENT SCHEDULE. It is acknowledged that Landlord has provided Tenant with an Amortized Allowance in the amount of $100,000.00 (the "**Amortized Allowance Amount**") to be applied to the cost of the Tenant-Funded Work pursuant to Section 6 of Exhibit C attached to the Lease. The monthly amortization schedule detailing the calculation of the Amortized Allowance Rent included in the monthly Base Rent is attached hereto as Exhibit A. The rent schedule set forth in Section 1.03 of the Lease is hereby amended and restated as follows:

Months of Term	Monthly Base Rent
April 1, 2018 – December 31, 2018*	$ 49,031.57
January 1, 2019 – March 31, 2019	$ 56,151.57
April 1, 2019 – March 31, 2020	$ 57,790.17

Months of Term	Monthly Base Rent
April 1, 2020 – March 31, 2021	$ 59,477.93
April 1, 2021 – March 31, 2022	$ 61,216.32
April 1, 2022 – March 31, 2023	$ 63,006.86
April 1, 2023 – March 31, 2024	$ 64,851.12
April 1, 2024 – March 31, 2025	$ 66,750.71
April 1, 2025 – May 31, 2025	$ 68,707.28

* Subject to Abatement Period, as defined in Section 3.02 of the Lease.

Notwithstanding anything to the contrary contained in Sections 3.02 and 3.03 of the Lease, Tenant shall be obligated to pay to Landlord the monthly payments of the Amortized Allowance Rent (equal to $1,531.57 per month) during the Abatement Period and the Phase-in Period.

4. BROKERS. Tenant represents and warrants to Landlord that it has not engaged any broker, finder or other person who would be entitled to any commission or fees in respect of the negotiation, execution or delivery of this Amendment, and shall indemnify, defend and hold harmless Landlord against any loss, cost, liability or expense incurred by Landlord as a result of any claim asserted by any broker, finder or other person on the basis of any arrangements or agreements made or alleged to have been made by or on behalf of Tenant. The provisions of this section shall not apply to brokers with whom Landlord has an express written broker agreement.

5. CONTINUING EFFECTIVENESS. The Lease, except as amended hereby, remains unamended, and, as amended hereby, remains in full force and effect. Tenant hereby confirms that no default by Tenant exists under the Lease.

6. COUNTERPARTS; ELECTRONIC DELIVERY. This Amendment may be executed in one or more counterparts, each of which shall constitute an original and all of which shall be one and the same agreement. The parties may exchange counterpart signatures by facsimile or electronic transmission and the same shall constitute delivery of this Amendment with respect to the delivering party.

7. EXECUTION BY BOTH PARTIES. Submission of this instrument for examination or signature by Tenant does not constitute a reservation of or an option for lease, and it is not effective as a lease or otherwise until execution and delivery by both Landlord and Tenant has occurred, and Landlord's lender holding a lien with respect to the Building has approved this Amendment and the terms and conditions hereof.

8. AUTHORIZATION. Tenant hereby confirms that the individual signing this Amendment on behalf of Tenant is duly authorized to bind Tenant to the terms hereof.

9. REQUIRED ACCESSIBILITY DISCLOSURE. Landlord hereby advises Tenant that the Development has not undergone an inspection by a certified access specialist, and except to the extent expressly set forth in the Lease, Landlord shall have no liability or responsibility to make any repairs or modifications to the Premises or the Development in order to comply with accessibility standards. The following disclosure is hereby made pursuant to applicable California law:

"A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the premises." [Cal. Civ. Code Section 1938(e)].

Any CASp inspection shall be conducted in compliance with reasonable rules in effect at the Building with regard to such inspections and shall be subject to Landlord's prior written consent.

[LANDLORD'S SIGNATURE ON PAGE S-1 AND TENANT'S SIGNATURE ON PAGE S-2]

IN WITNESS WHEREOF, Landlord has executed this Amendment as of the day and year first above written.

LANDLORD:

BIXBY SPE FINANCE 11, LLC,
a Delaware limited liability company

By: Bixby SPE Finance, LLC,
a Delaware limited liability company
its sole Member and Manager

By: Bixby Land Company,
a California corporation
its sole Member and Manager

By: /s/ Aaron D. Hill
Name: Aaron D. Hill
Title: President

By: /s/ Martin T. O'Hea
Name: Martin T. O'Hea
Title: Executive Vice President and CFO

[TENANT'S SIGNATURE ON NEXT PAGE]

IN WITNESS WHEREOF, Tenant has executed this Amendment as of the day and year first above written.

TENANT:

SI-BONE, INC.,
a Delaware corporation

By: /s/ Jeffrey W. Dunn
Name: Jeffrey W. Dunn
Title: President, CEO and Chairman

By: /s/ Michael Pisetsky
Name: Michael Pisetsky
Title: VP & General Counsel

26-2216351
Tenant's Tax ID Number (SSN or FEIN)

EXHIBIT A

MONTHLY AMORTIZATION SCHEDULE

Loan Amount	100,000.00	100,000.00
N (years / mos.)	7.1666667	86.00000
I (annual / monthly)	8.00%	0.67%
PMT		1,531.57

	Month	Beg. Balance	Payment	Interest	Principle	End Balance
1	4/1/2018	100,000.00	1,531.57	666.67	864.90	99,135.10
2	5/1/2018	99,135.10	1,531.57	660.90	870.67	98,264.43
3	6/1/2018	98,264.43	1,531.57	655.10	876.47	97,387.95
4	7/1/2018	97,387.95	1,531.57	649.25	882.32	96,505.63
5	8/1/2018	96,505.63	1,531.57	643.37	888.20	95,617.44
6	9/1/2018	95,617.44	1,531.57	637.45	894.12	94,723.31
7	10/1/2018	94,723.31	1,531.57	631.49	900.08	93,823.23
8	11/1/2018	93,823.23	1,531.57	625.49	906.08	92,917.15
9	12/1/2018	92,917.15	1,531.57	619.45	912.12	92,005.03
10	1/1/2019	92,005.03	1,531.57	613.37	918.20	91,086.82
11	2/1/2019	91,086.82	1,531.57	607.25	924.32	90,162.50
12	3/1/2019	90,162.50	1,531.57	601.08	930.49	89,232.01
13	4/1/2019	89,232.01	1,531.57	594.88	936.69	88,295.32
14	5/1/2019	88,295.32	1,531.57	588.64	942.93	87,352.39
15	6/1/2019	87,352.39	1,531.57	582.35	949.22	86,403.17
16	7/1/2019	86,403.17	1,531.57	576.02	955.55	85,447.62
17	8/1/2019	85,447.62	1,531.57	569.65	961.92	84,485.70
18	9/1/2019	84,485.70	1,531.57	563.24	968.33	83,517.36
19	10/1/2019	83,517.36	1,531.57	556.78	974.79	82,542.58
20	11/1/2019	82,542.58	1,531.57	550.28	981.29	81,561.29
21	12/1/2019	81,561.29	1,531.57	543.74	987.83	80,573.46
22	1/1/2020	80,573.46	1,531.57	537.16	994.41	79,579.05
23	2/1/2020	79,579.05	1,531.57	530.53	1,001.04	78,578.00
24	3/1/2020	78,578.00	1,531.57	523.85	1,007.72	77,570.29
25	4/1/2020	77,570.29	1,531.57	517.14	1,014.44	76,555.85
26	5/1/2020	76,555.85	1,531.57	510.37	1,021.20	75,534.65
27	6/1/2020	75,534.65	1,531.57	503.56	1,028.01	74,506.65
28	7/1/2020	74,506.65	1,531.57	496.71	1,034.86	73,471.79
29	8/1/2020	73,471.79	1,531.57	489.81	1,041.76	72,430.03
30	9/1/2020	72,430.03	1,531.57	482.87	1,048.70	71,381.33
31	10/1/2020	71,381.33	1,531.57	475.88	1,055.69	70,325.63
32	11/1/2020	70,325.63	1,531.57	468.84	1,062.73	69,262.90
33	12/1/2020	69,262.90	1,531.57	461.75	1,069.82	68,193.08
34	1/1/2021	68,193.08	1,531.57	454.62	1,076.95	67,116.13
35	2/1/2021	67,116.13	1,531.57	447.44	1,084.13	66,032.00
36	3/1/2021	66,032.00	1,531.57	440.21	1,091.36	64,940.64
37	4/1/2021	64,940.64	1,531.57	432.94	1,098.63	63,842.01
38	5/1/2021	63,842.01	1,531.57	425.61	1,105.96	62,736.05
39	6/1/2021	62,736.05	1,531.57	418.24	1,113.33	61,622.72

40	7/1/2021	61,622.72	1,531.57	410.82	1,120.75	60,501.97
41	8/1/2021	60,501.97	1,531.57	403.35	1,128.22	59,373.75
42	9/1/2021	59,373.75	1,531.57	395.82	1,135.75	58,238.00
43	10/1/2021	58,238.00	1,531.57	388.25	1,143.32	57,094.69
44	11/1/2021	57,094.69	1,531.57	380.63	1,150.94	55,943.75
45	12/1/2021	55,943.75	1,531.57	372.96	1,158.61	54,785.13
46	1/1/2022	54,785.13	1,531.57	365.23	1,166.34	53,618.80
47	2/1/2022	53,618.80	1,531.57	357.46	1,174.11	52,444.69
48	3/1/2022	52,444.69	1,531.57	349.63	1,181.94	51,262.75
49	4/1/2022	51,262.75	1,531.57	341.75	1,189.82	50,072.93
50	5/1/2022	50,072.93	1,531.57	333.82	1,197.75	48,875.18
51	6/1/2022	48,875.18	1,531.57	325.83	1,205.74	47,669.44
52	7/1/2022	47,669.44	1,531.57	317.80	1,213.77	46,455.67
53	8/1/2022	46,455.67	1,531.57	309.70	1,221.87	45,233.80
54	9/1/2022	45,233.80	1,531.57	301.56	1,230.01	44,003.79
55	10/1/2022	44,003.79	1,531.57	293.36	1,238.21	42,765.58
56	11/1/2022	42,765.58	1,531.57	285.10	1,246.47	41,519.11
57	12/1/2022	41,519.11	1,531.57	276.79	1,254.78	40,264.33
58	1/1/2023	40,264.33	1,531.57	268.43	1,263.14	39,001.19
59	2/1/2023	39,001.19	1,531.57	260.01	1,271.56	37,729.63
60	3/1/2023	37,729.63	1,531.57	251.53	1,280.04	36,449.59
61	4/1/2023	36,449.59	1,531.57	243.00	1,288.57	35,161.02
62	5/1/2023	35,161.02	1,531.57	234.41	1,297.16	33,863.85
63	6/1/2023	33,863.85	1,531.57	225.76	1,305.81	32,558.04
64	7/1/2023	32,558.04	1,531.57	217.05	1,314.52	31,243.53
65	8/1/2023	31,243.53	1,531.57	208.29	1,323.28	29,920.25
66	9/1/2023	29,920.25	1,531.57	199.47	1,332.10	28,588.14
67	10/1/2023	28,588.14	1,531.57	190.59	1,340.98	27,247.16
68	11/1/2023	27,247.16	1,531.57	181.65	1,349.92	25,897.24
69	12/1/2023	25,897.24	1,531.57	172.65	1,358.92	24,538.32
70	1/1/2024	24,538.32	1,531.57	163.59	1,367.98	23,170.33
71	2/1/2024	23,170.33	1,531.57	154.47	1,377.10	21,793.23
72	3/1/2024	21,793.23	1,531.57	145.29	1,386.28	20,406.95
73	4/1/2024	20,406.95	1,531.57	136.05	1,395.52	19,011.43
74	5/1/2024	19,011.43	1,531.57	126.74	1,404.83	17,606.60
75	6/1/2024	17,606.60	1,531.57	117.38	1,414.19	16,192.41
76	7/1/2024	16,192.41	1,531.57	107.95	1,423.62	14,768.79
77	8/1/2024	14,768.79	1,531.57	98.46	1,433.11	13,335.67
78	9/1/2024	13,335.67	1,531.57	88.90	1,442.67	11,893.01
79	10/1/2024	11,893.01	1,531.57	79.29	1,452.28	10,440.72
80	11/1/2024	10,440.72	1,531.57	69.60	1,461.97	8,978.76
81	12/1/2024	8,978.76	1,531.57	59.86	1,471.71	7,507.05
82	1/1/2025	7,507.05	1,531.57	50.05	1,481.52	6,025.52
83	2/1/2025	6,025.52	1,531.57	40.17	1,491.40	4,534.12
84	3/1/2025	4,534.12	1,531.57	30.23	1,501.34	3,032.78
85	4/1/2025	3,032.78	1,531.57	20.22	1,511.35	1,521.43
86	5/1/2025	1,521.43	1,531.57	10.14	1,521.43	0.00

Exhibit 21.1

Subsidiaries of SI-BONE, Inc.

Name of Subsidiary	**State of Incorporation**
SI-BONE Deutschland GmbH*	Germany
SI-BONE S.R.L.*	Italy
SI-BONE UK LTD*	England and Wales

* *The above entity does not constitute a significant subsidiary within the meaning of Rule 1-02(w) of Regulation S-X and Item 601(b)(21)(ii) of Regulation S-K.*