As confidentially submitted to the Securities and Exchange Commission on March 21, 2018. This draft registration statement has not been publicly filed with the Securities and Exchange Commission and all information herein remains 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

Xeris Pharmaceuticals, Inc.
(Exact name of registrant as specified in its charter)

Delaware	2834	20-3352427
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

Xeris Pharmaceuticals, Inc.
180 N. LaSalle Street, Suite 1800
Chicago, IL 60601
1-844-445-5704
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Paul Edick
President and Chief Executive Officer
Xeris Pharmaceuticals, Inc.
180 N. LaSalle Street, Suite 1800
Chicago, IL 60601
1-844-445-5704
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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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.

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 13(a) of the Exchange Act. ☐

CALCULATION OF REGISTRATION FEE

TITLE OF EACH CLASS OF SECURITIES TO BE REGISTERED	PROPOSED MAXIMUM AGGREGATE OFFERING PRICE (1)	AMOUNT OF REGISTRATION FEE (2)
Common stock, $0.0001 par value per share	$	$

(1) Estimated solely for the purpose of computing the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended. Includes the aggregate offering price of shares that the underwriters have the option to purchase to cover over-allotments, if any.
(2) Registration fee will be paid when registration statement is first publicly filed under the Securities Act of 1933, as amended.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant files 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 Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. We may not sell these securities until the Securities and Exchange Commission declares our registration statement effective. This prospectus is not an offer to sell these securities and 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

Preliminary Prospectus

Shares

Common Stock

We are offering shares of common stock. This is our initial public offering and no public market currently exists for our shares. We expect that the initial public offering price will be between $ and $ per share. We intend to apply to list our common stock on the Nasdaq Global Market under the symbol "XERS".

We are an "emerging growth company" under the federal securities laws and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus and for filings.

Investing in our common stock involves a high degree of risk. Before buying any shares, you should read carefully the discussion of the material risks of investing in our common stock under the heading "Risk Factors" starting on page 11 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission approved or disapproved of securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	PER SHARE	TOTAL
Public offering price	$	$
Underwriting discount (1)	$	$
Proceeds, before expenses, to Xeris Pharmaceuticals, Inc.	$	$

(1) We refer you to "Underwriting" beginning on page 152 of this prospectus for additional information regarding underwriting compensation.

Delivery of the shares of common stock is expected to be made on or about , 2018. We have granted the underwriters an option for a period of 30 days to purchase an additional shares of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $, and the total proceeds to us, before expenses, will be $.

Joint Book-Running Managers

Jefferies **Leerink Partners** **RBC Capital Markets**

Mizuho Securities

The date of this prospectus is , 2018.

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Neither we nor the underwriters have authorized anyone to provide you with information different from, or in addition to, that contained in this prospectus, any amendment or supplement to this prospectus and any related free writing prospectus. We and the underwriters take no responsibility for, and can provide no assurances as to the reliability of, any information that others may give you. This prospectus is not an offer to sell, nor is it seeking an offer to buy, these securities in any jurisdiction where the offer or sale is not permitted. The information contained in this prospectus or in any free writing prospectus is only accurate as of its date, regardless of its time or delivery or the time of any sale of our common stock. Our business, financial condition, results of operations and future growth prospects may have changed since that date.

Until and including , 2018 (25 days after the date of this prospectus), all dealers that buy, sell or trade our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

PROSPECTUS SUMMARY

This summary highlights information contained in greater detail elsewhere in this prospectus. This summary does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including our financial statements and the related notes thereto and the information set forth under the sections titled "Risk Factors," "Special Note Regarding Forward-Looking Statements" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," in each case included in this prospectus. Unless the context otherwise requires, we use the terms "Xeris," the "Company," "we," "us," "our" and similar designations in this prospectus to refer to Xeris Pharmaceuticals, Inc.

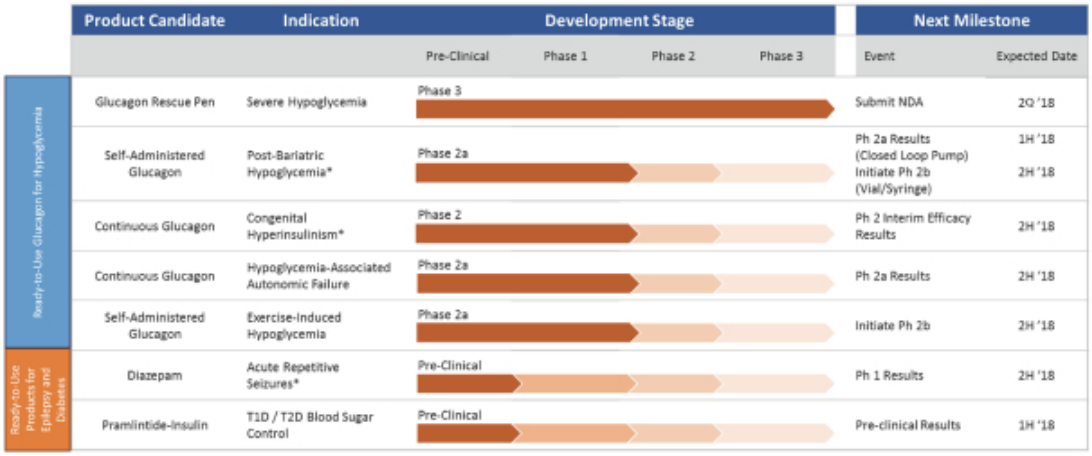
Our Company

We are a specialty pharmaceutical company leveraging our novel non-aqueous formulation technology platforms, XeriSol and XeriJect, to develop and commercialize ready-to-use injectable and infusible drug formulations. We have developed a ready-to-use, room-temperature stable liquid glucagon formulation that, unlike any currently available products, can be administered without any preparation or reconstitution. Our lead product candidate, Glucagon Rescue Pen, delivers ready-to-use glucagon via a commercially-available auto-injector for the treatment of severe hypoglycemia, a potentially life-threatening condition, in people with diabetes. We have completed two Phase 3 clinical trials for our Glucagon Rescue Pen and expect to submit a New Drug Application, or NDA, to the U.S. Food and Drug Administration, or the FDA, in the second quarter of 2018. If our NDA is submitted and approved in our expected timeframe, we believe we will have the first ready-to-use, room-temperature stable liquid glucagon formulation that can be administered without any preparation or reconstitution. We are also applying our novel ready-to-use, room-temperature stable liquid glucagon formulation for the management of additional conditions associated with hypoglycemia with significant unmet medical need. In addition, we are applying our technology platforms to convert other commercially-available drugs into ready-to-use, room-temperature stable liquid formulations to address the needs in multiple therapeutic areas and conditions, including epilepsy and diabetes.

Our Technology Platforms and Our Pipeline

Our proprietary non-aqueous formulation technology platforms are designed to address solubility and stability challenges presented by current aqueous formulations of certain drugs. Our proprietary XeriSol and XeriJect platforms offer the opportunity to eliminate the need for reconstitution and refrigeration, enable long-term room-temperature stability, significantly reduce injection volume and allow for a more convenient subcutaneous or intramuscular administration as opposed to intravenous infusion, all of which we believe are distinct advantages over existing aqueous formulations of marketed and development-stage products. We believe that our technology platforms can lead to products that will improve outcomes and enable easier administration while reducing costs for payors and the healthcare system. XeriSol is best suited for peptides and small molecules that currently encounter formulation challenges. XeriJect is best suited for drugs and biologics consisting of large molecules, such as proteins, monoclonal antibodies and vaccines.

The following table summarizes key information about our internal product candidates.



* Received orphan drug designation

Additionally, we expect to commence a proof-of-concept clinical study for our bi-hormonal artificial pancreas program in mid-2018.

Severe Hypoglycemia and Limitations of Existing Products

Hypoglycemia, a key concern of people with both Type 1 Diabetes, or T1D, and Type 2 Diabetes, or T2D, occurs when a person has a deficiency of glucose in their bloodstream, often as a result of insulin treatment. Symptoms of hypoglycemia include fatigue, shakiness, anxiety, headache, nausea and vomiting, and in severe cases, hypoglycemia can result in seizure, coma and death. Treatment-associated hypoglycemia in people with diabetes remains the major limiting factor in the glycemic management of T1D and T2D. In the United States, all of the approximately 1.3 million people with T1D and approximately 4.3 million people with T2D who require insulin therapy to lower their blood glucose levels are at risk for hypoglycemia. Hypoglycemic events of any severity are a daily concern for people with diabetes and represent the greatest barrier to optimal glycemic control. Severe hypoglycemic events are extremely frightening for patients and caregivers and can result in seizure, coma and, if left untreated, death. The American Diabetes Association, or ADA, recommends that glucagon be prescribed for all individuals at increased risk of clinically significant hypoglycemia for use in the event of an emergency.

Because of the urgent nature of severe hypoglycemia, the majority of severe hypoglycemic events are treated on an emergency basis, outside of a healthcare facility. Two emergency glucagon products are currently available to treat severe hypoglycemia. Each product is sold as a vial of lyophilized, glucagon powder with an exposed needle/syringe that contains a liquid diluent. The glucagon powder must be combined with the liquid diluent at the time of use and drawn into a syringe in accordance with a complex multi-step reconstitution and dose calibration procedure. Additionally, once reconstituted, the glucagon must be used immediately because once the lyophilized glucagon is combined with water, the solution becomes unstable and can fibrillate, rendering it inactive and potentially toxic.

In published comparative human factors studies with currently marketed kits, only 6% to 31% of users were able to successfully administer the full dose of glucagon. The complex, unreliable administration of currently marketed products inhibits patient interest in carrying a kit and physician focus on ensuring each clinically appropriate patient at increased risk has a filled prescription. In 2017, U.S. sales for emergency glucagon kits totaled approximately $240 million, based on approximately 660,000 total prescriptions written for approximately 960,000 single-dose kits.

Our Glucagon Rescue Pen

We are developing our lead product candidate, Glucagon Rescue Pen, which delivers our ready-to-use glucagon formulation via a commercially-available auto-injector, for the treatment of severe hypoglycemia in people with diabetes. We believe our Glucagon Rescue Pen addresses the administration challenges of currently marketed emergency glucagon kits, and, if approved, has the potential to be the preferred emergency glucagon product. The key features of our Glucagon Rescue Pen are:

- *Ready-to-use:* With its easy two-step administration process, the user simply pulls off the red cap and pushes the Glucagon Rescue Pen down on the skin for five seconds, until the window turns red. There is no reconstitution required at the time of emergency.
- *Easy-to-use:* In our human factors study, 99% of users were able to successfully administer the full dose with our Glucagon Rescue Pen.
- *No dose calibration required:* The Glucagon Rescue Pen will be offered in two pre-measured doses, 0.5 mg for pediatric administration and 1 mg for adolescents and adults.
- *No visible needle:* The needle in the Glucagon Rescue Pen is not visible to the user.
- *Auto-retraction:* The needle auto-retracts after administration for safety.
- *Auto-locks:* The device auto-locks after use for safety.
- *Two-year room-temperature stability:* No refrigeration is required at any time.

We have completed two Phase 3 clinical trials of our Glucagon Rescue Pen and expect to submit a NDA to the FDA in the second quarter of 2018 utilizing the 505(b)(2) regulatory pathway. To generate additional information regarding the entire treatment episode, including preparation and administration time of our Glucagon Rescue Pen compared to Eli Lilly's Glucagon Emergency Kit, we are conducting a Phase 3b clinical trial of our Glucagon Rescue Pen, that we expect to complete in the second quarter of 2018. We also intend to offer our Glucagon Rescue Pen in a pre-filled syringe presentation that may be preferred by some healthcare professionals.

Glucagon Rescue Pen Market Potential

Based on current market data, as well as our caregiver and patient and healthcare professional perceptions studies, we believe that our Glucagon Rescue Pen, if approved, has the potential to increase demand for emergency glucagon treatments among people with diabetes.

Despite the risk of experiencing a severe hypoglycemic event, we believe that emergency glucagon therapy is under-appreciated, under-evaluated and under-taught, resulting in a market that is under-penetrated. According to a 2015 study published in the journal *Endocrine Practice*, approximately 50% of people with T1D and approximately 3% of people with T2D with a new insulin prescription had a filled glucagon prescription. We intend to market our Glucagon Rescue Pen to all 3.5 million people that we believe are clinically appropriate for glucagon. We believe by increasing penetration into the market for emergency glucagon kits, and based on the current price per unit for currently marketed kits, the U.S. market potential may total up to $2.0 billion.

We expect to initially target approximately 8,000 healthcare professionals that are high prescribers of current glucagon kits and/or mealtime insulin products, using an initial sales force of 60 individuals. As part of our marketing strategy, we plan to activate patient demand efficiently and effectively through targeted direct-to-patient promotion, as the majority of people with diabetes are concentrated in ten states.

Ready-to-Use Glucagon for Hypoglycemia Associated with Other Intermittent and Chronic Conditions

We are applying our ready-to-use, liquid-stable glucagon formulation to treat five other intermittent and chronic conditions with significant unmet medical need: Post-Bariatric Hypoglycemia, or PBH, syndrome; Congenital Hyperinsulinism, or CHI; Hypoglycemia-Associated Autonomic Failure, or HAAF; Exercise-Induced

Hypoglycemia, or EIH; and glucagon in a fully-integrated, bi-hormonal artificial pancreas closed-loop system. By applying our ready-to-use glucagon to these conditions, we expect to leverage operating efficiencies across supply chain, research and development, commercial and medical organizations.

We also are applying our technology platforms to develop additional product candidates, such as ready-to-use, liquid-stable diazepam delivered via a commercially-available auto-injector for the emergency treatment of epileptic seizures, and a fixed-dose co-formulation of pramlintide and insulin, or Pram-Insulin, for the management of diabetes. We believe that our strong product candidate portfolio, complemented by external expansion opportunities, will support our vision to effectively and efficiently meet the needs of our target markets.

Intellectual Property and Barriers to Entry

We own the worldwide rights to our proprietary formulation technology platforms and our product candidates, with 66 patents issued globally, including a composition of matter patent covering our ready-to-use glucagon formulation that expires in 2036. The FDA has granted orphan drug status to three of our product candidates, which are our ready-to-use glucagon for PBH and CHI, and our ready-to-use, liquid-stable formulation of diazepam for the treatment of acute repetitive seizures in patients with epilepsy.

Management

Our management team includes veterans in drug development, discovery and commercialization, with executive experience in leading global pharmaceutical and healthcare companies, including Durata Therapeutics, Baxter Healthcare, Merck, Searle, Takeda, Warner Chilcott, MedPointe Healthcare, Amylin Pharmaceuticals, PowderJect Technologies, Integra LifeSciences and Alpharma.

Our Strategy

Our strategy is to utilize our proprietary non-aqueous formulation technology platforms to convert marketed and development-stage products that have poor solubility and stability into ready-to-use, user-friendly injectable and infusible drugs for multiple therapeutic areas and conditions, including hypoglycemia, epilepsy and diabetes. We also seek to apply our formulation technology platforms to enhance the formulations of proprietary products and candidates of other pharmaceutical and biotechnology companies. The key elements of our strategy include the following objectives:

- Rapidly secure regulatory approval for our lead product candidate, the Glucagon Rescue Pen, for severe hypoglycemia.
- Maximize the commercial potential for our Glucagon Rescue Pen.
- Advance our ready-to-use glucagon portfolio to address other conditions associated with hypoglycemia.
- Leverage our technology and expertise to develop a portfolio of additional product candidates.
- Collaborate with third party pharmaceutical and biotechnology companies to apply our technology platforms to enhance the formulations of their proprietary products and candidates.

The nature of our product candidates and target conditions provide us with a potentially faster and capital efficient development and regulatory pathway to approval.

Risks Affecting Our Business

Our business is subject to a number of risks of which you should be aware before making an investment decision. These risks are discussed more fully in the “Risk Factors” section of this prospectus immediately following this prospectus summary, and include the following:

- As a company, we have a limited operating history and no history of commercializing pharmaceutical products, and have incurred significant losses since inception. We expect to incur losses over the next several years and may not be able to achieve or sustain revenues or profitability in the future.
- We may not submit our NDA on our expected timeline and even if we do, the FDA may not accept our NDA for filing.

- We are dependent on the success of our glucagon product candidates, particularly our Glucagon Rescue Pen. We cannot be certain that our Glucagon Rescue Pen or any of our other product candidates will receive marketing approval. Without marketing approval we will not be able to commercialize our product candidates or generate product revenues.
- Our business depends entirely on the success of our product candidates. Even if approved, our product candidates may not be accepted in the marketplace and our business may be materially harmed.
- The market opportunity for our product candidates may be smaller than we estimate.
- Even if our product candidates receive regulatory approval, we may still face future development and regulatory difficulties. If we fail to comply with continuing U.S. and non-U.S. regulations or new safety data arise, we could lose our marketing approvals and our business would be seriously harmed.
- We operate in a 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 successfully commercialize our product candidates, even if approved.
- Clinical failure may occur at any stage of clinical development, and the results of our clinical trials may not support our proposed indications for our product candidates. If our clinical trials fail to demonstrate efficacy and safety to the satisfaction of the FDA or other regulatory authorities, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development of such product candidates.
- Our reliance on third-party suppliers, including single-source suppliers and a limited number of options for alternate sources for our product candidates, including our Glucagon Rescue Pen, could harm our ability to develop our product candidates or to commercialize any product candidates that are approved.
- Reimbursement decisions by third-party payors may have an adverse effect on pricing and market acceptance. If there is not sufficient reimbursement for our products, it is less likely that they will be widely used.
- Our independent registered public accounting firm has identified a material weakness in our internal control over financial reporting which will require remediation.

Corporate Information

We were incorporated in 2005 under the laws of the state of Delaware. Our principal executive offices are located at 180 N. LaSalle St., Suite 1800, Chicago, Illinois 60601, and our phone number is 1-844-445-5704. Our website address is *http://www.xerispharma.com*. The information contained in or accessible from our website is not incorporated into this prospectus, and you should not consider it part of this prospectus.

The “Xeris” name, and the XeriJect, XeriSol, Glucagon Rescue Pen, and CSI Glucagon names and related images, logos and symbols appearing in this prospectus are our properties, trademarks and service marks. Other marks appearing in this prospectus are the property of their respective owners.

Implications of Being an Emerging Growth Company

We qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, as amended. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- Only two years of audited financial statements in addition to any required unaudited interim financial statements with correspondingly reduced “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure;
- Reduced disclosure about our executive compensation arrangements;
- No advisory votes on executive compensation or golden parachute arrangements; and
- Exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions for up to five years or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company on the date that is the earliest of (i) the last day of the fiscal year in which we have total annual gross revenues of $1.07 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of this offering; (iii) the date on which we have issued more than $1.0 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission, or SEC. We may choose to take advantage of some but not all of these exemptions. We have taken advantage of reduced reporting requirements in this prospectus. Accordingly, the information contained herein may be different from the information you receive from other public companies in which you hold stock.

THE OFFERING

Shares of common stock offered by us	shares.
Shares of our common stock outstanding after this offering	shares (or shares assuming full exercise of the underwriters' option to purchase additional shares).
Option to purchase additional shares	We have granted the underwriters a 30-day option to purchase up to additional shares of our common stock.
Use of proceeds	We currently intend to use the net proceeds of this offering, together with our cash and cash equivalents, to support the expected commercial launch of our Glucagon Rescue Pen, including investments in sales and marketing, inventory and our commercial and medical affairs infrastructure; to advance our other pipeline product candidates; and the remainder for working capital and other general corporate purposes. For a more complete description of our intended use of the proceeds from this offering, see "Use of Proceeds."
Proposed Nasdaq Global Market symbol	"XERS".
Risk factors	Investment in our common stock involves substantial risks. You should read this prospectus carefully, including the section entitled "Risk Factors" and the financial statements and the related notes to those statements included in this prospectus, before investing in our common stock.

The number of shares of common stock outstanding after this offering is based on 25,245,871 shares of our common stock outstanding as of December 31, 2017, after giving effect to the automatic conversion of all outstanding shares of convertible preferred stock into an aggregate of 21,083,391 shares of common stock upon the completion of this offering, which consists of 20,375,711 shares of preferred stock outstanding as of December 31, 2017 and reflects the subsequent issuance and sale by us of an aggregate of 707,680 shares of our Series C preferred stock in February 2018, and excludes:

- 3,208,588 shares of common stock issuable upon exercise of options issued under our 2011 Stock Option/Stock Issuance Plan at a weighted-average exercise price of $0.93 per share;
- 35,500 shares of common stock issuable upon the exercise of warrants to purchase common stock at an exercise price of $3.319 per share as of December 31, 2017, plus 95,686 shares of common stock issuable upon the exercise of warrants to purchase common stock at an exercise price of $6.2705 per share that we issued in February 2018;
- 801,882 shares of common stock reserved for issuance under our 2011 Stock Option/Stock Issuance Plan as of December 31, 2017, plus an additional 600,000 shares of common stock that we reserved for issuance under such plan in February 2018, which shares will no longer be reserved following this offering; and
- shares of common stock to be reserved for future issuance under our 2018 Stock Option and Incentive Plan upon the effectiveness of the registration statement of which this prospectus forms a part.

Except as otherwise noted, all information in this prospectus:

- gives effect to a for reverse stock split of our common stock effected on , 2018;
- assumes no exercise of the underwriters' option to purchase additional shares;
- assumes no exercise of the outstanding options and warrants described above;
- gives effect to the automatic conversion upon the completion of this offering of all of our outstanding shares of convertible preferred stock into an aggregate of 21,083,391 shares of common stock; and
- assumes the filing of our amended and restated certificate of incorporation and the effectiveness of our amended and restated bylaws, which will occur upon the closing of this offering.

SUMMARY FINANCIAL INFORMATION

The following tables summarize our financial and operating data for the periods indicated. The summary statements of operations data for the years ended December 31, 2016 and 2017 and the summary balance sheet data as of December 31, 2017 have been derived from our audited financial statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in the future for a full year or any interim period.

The summary financial information below should be read in conjunction with the information contained in "Selected Financial Information," "Management's Discussion and Analysis of Financial Condition and Results of Operations," our financial statements and notes thereto, and other financial information included elsewhere in this prospectus.

	YEARS ENDED DECEMBER 31,	
	2016	2017
	(in thousands, except share and per share data)	
Statements of Operations Data:		
Grant income	$ 1,022	$ 1,540
Service revenue	53	16
Cost of revenue	8	4
Gross profit	1,067	1,552
Operating expenses:		
Research and development	10,238	20,166
General and administrative	4,060	8,015
Expense from operations	14,298	28,181
Loss from operations	(13,231)	(26,629)
Other income (expense):		
Interest income	5	124
Interest expense	(2)	(2)
Change in fair value of warrants	24	(46)
Other expense	(5)	(1)
Total other income	22	75
Net loss	$ (13,209)	$ (26,554)
Net loss per share—basic and diluted (1)	$ (4.03)	$ (7.35)
Weighted average number of shares outstanding, basic and diluted (1)	3,281,564	3,612,512
Pro forma net loss per share (unaudited) (1):		
Basic and diluted		$ (1.31)
Pro forma weighted average shares outstanding (unaudited) (1):		
Basic and diluted		20,231,131

	AS OF DECEMBER 31, 2017		
	ACTUAL	PRO FORMA (2)	PRO FORMA AS ADJUSTED (3)
		(Unaudited) (in thousands)	
Balance Sheet Data:			
Cash and cash equivalents	$ 42,045	$ 66,448	
Working capital (4)	39,193	63,596	
Total assets	44,998	69,401	
Deferred rent—long-term	90	90	
Debt, long term	—	20,000	
Total liabilities	4,950	24,950	
Total convertible preferred stock	97,878	—	
Total stockholders' equity (deficit)	(57,830)	44,451	

(1) See Note 2 to our audited financial statements included elsewhere in this prospectus for an explanation of the calculations of our basic and diluted net loss per share, unaudited basic and diluted pro forma net loss per share and the shares used in computing basic and diluted net loss per share and unaudited basic and diluted pro forma net loss per share.

(2) Pro forma amounts give effect to (i) the sale and issuance of 707,680 shares of our Series C preferred stock in February 2018 for aggregate net proceeds of $4.4 million, (ii) the drawdown of $20.0 million from our Loan Agreement with Oxford Finance, LLC and Silicon Valley Bank in February 2018 and (iii) the automatic conversion of all of our outstanding shares of preferred stock into an aggregate of 21,083,391 shares of common stock upon the closing of this offering.

(3) Pro forma as adjusted amounts reflect pro forma adjustments described in footnote (2) as well as the sale of shares of our common stock in this offering at the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(4) We define working capital as current assets less current liabilities.

The pro forma as adjusted information discussed above is illustrative only and will change based on the actual initial public offering price and other terms of this offering determined at pricing. A $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 of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' equity by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase (decrease) of 1.0 million shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' equity by approximately $ million, assuming the assumed initial public offering price remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following risks and other information contained in this prospectus, including our financial statements and the related notes and the section of this prospectus titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" before you make an investment decision. If any of the events contemplated by the following discussion of risks were to occur, our business, results of operations and financial condition could suffer significantly. As a result, the market price of our common stock could decline, and you may lose all or part of your investment in our common stock.

Risks Related to our Financial Position and Need for Financing

As a company, we have a limited operating history and no history of commercializing pharmaceutical products, and have incurred significant losses since inception. We expect to incur losses over the next several years and may not be able to achieve or sustain revenues or profitability in the future.

We are a clinical-stage pharmaceutical company with a limited operating history. Pharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. We have not generated any product revenues and have financed our operations primarily through private placements of our preferred stock and borrowings under the Loan and Security Agreement, which we refer to as the Loan Agreement, that we entered into with Oxford Finance LLC and Silicon Valley Bank. We do not expect to generate any product revenues unless one or more of our product candidates receives regulatory approval and is commercialized. We have not yet demonstrated an ability to obtain marketing approvals, manufacture a commercial-scale product, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. Accordingly, you should consider our prospects in light of the costs, uncertainties, delays and difficulties frequently encountered by companies prior to regulatory approval of any product candidates, especially pharmaceutical companies such as ours. Any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history or a history of successfully commercializing pharmaceutical products. We may encounter unforeseen expenses, difficulties, complications, delays and other known or unknown factors in achieving our business objectives. We will need to transition from a company with a development focus to a company capable of supporting commercial activities. We may not be successful in such a transition. We expect our financial condition and operating results to continue to fluctuate significantly from quarter to quarter and year to year due to a variety of factors, many of which are beyond our control. Accordingly, you should not rely upon the results of any quarterly or annual periods as indications of future operating performance.

We have incurred significant losses in every fiscal year since inception. We incurred net losses of $13.2 million and $26.6 million in the years ended December 31, 2016 and 2017, respectively. In addition, our accumulated deficit as of December 31, 2017 was $60.6 million. Substantially all our operating losses have resulted from costs incurred in connection with research and development of our product candidates and clinical and regulatory initiatives to obtain approvals for our product candidates.

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 new products and incur additional operational and reporting costs associated with being a public company.

In particular, we anticipate that our expenses will increase substantially as we:

- continue our research and development efforts;
- seek regulatory approval for new product candidates and product enhancements;
- build commercial infrastructure to support sales and marketing for our product candidates;
- hire and retain additional personnel and add operational, financial and management information systems; and
- operate as a public company.

All of our product candidates are still in development and none have been approved for sale. Our ability to generate revenue from our product candidates, and to transition to profitability and generate positive cash flows is uncertain,

and depends on the successful development and commercialization of our product candidates. Successful development and commercialization will require achievement of key milestones, including completing clinical trials of our product candidates that are under clinical development, obtaining marketing approval for our product candidates, manufacturing, marketing and selling those products for which we, or any of our future collaborators, may obtain marketing approval, satisfying any post-marketing requirements and obtaining reimbursement for our products from private insurance or government payors. Because of the uncertainties and risks associated with these activities, we are unable to accurately predict the timing and amount of revenues, and if or when we might achieve profitability. We and any future collaborators may never succeed in these activities and, even if we or any future collaborators do, we may never generate revenues that are large enough for us to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis.

Our failure to become and remain profitable would depress the market price of our common stock and could impair our ability to raise capital, expand our business, diversify our product offerings or continue our operations. If we continue to suffer losses as we have in the past, investors may not receive any return on their investment and may lose their entire investment.

We have not generated any revenue from our product candidates, including our Glucagon Rescue Pen, and may never be profitable.

Our ability to become profitable depends upon our ability to generate revenue. To date, we have not generated any revenue from any of our product candidates. We do not expect to generate significant revenue unless or until we obtain marketing approval of, and begin to sell, our product candidates. We do not expect to commercialize any of our product candidates before 2019, if ever. Our ability to generate revenue depends on a number of factors, including, but not limited to, our ability to:

- obtain marketing approval for our product candidates, including our Glucagon Rescue Pen;
- obtain commercial quantities of our product candidates, if approved, at acceptable cost levels;
- commercialize our product candidates, if approved, by developing our own sales force for commercialization in the United States or in other key territories by entering into partnership or co-promotion arrangements with third parties;
- set an acceptable price for our product candidates, if approved;
- obtain and maintain third-party coverage and adequate reimbursement for our product candidates, if approved; and
- achieve an adequate level of market acceptance of our product candidates, if approved, in the medical community and with third-party payors, including placement in accepted clinical guidelines for the conditions for which our product candidates are intended to target.

If any of our product candidates are approved for commercial sale, we expect to incur significant sales and marketing costs as we prepare for its commercialization. Even if we receive marketing approval and expend these costs, our product candidates may not be commercially successful. We may not achieve profitability soon after generating product sales, if ever. If we are unable to generate product revenue, we will not become profitable and may be unable to continue operations without continued funding.

We will require additional capital to sustain our business, and this capital may cause dilution to our stockholders and might not be available on terms favorable to us or at all, which would force us to delay, reduce or eliminate our product development programs or commercialization efforts.

Pharmaceutical development is a time-consuming, expensive and uncertain process that takes years to complete. In addition, if any of our product candidates are approved, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we may be forced to delay, reduce or eliminate our research and development programs. We plan to use the net proceeds of this offering, together with our existing cash and cash equivalents, to support the expected commercial launch of our Glucagon Rescue Pen, including investments in sales and marketing, inventory and our commercial and medical affairs infrastructure, to advance our other pipeline product candidates and for working capital and other general corporate purposes. We will be required to expend significant funds in order to

commercialize our Glucagon Rescue Pen, as well as any of our other product candidates that receive marketing approval. The net proceeds of this offering and our existing cash and cash equivalents may not be sufficient to fund all of the efforts that we plan to undertake.

We may be required to obtain further funding through public or private equity offerings, debt financings, royalty-based financing arrangements, collaborations and licensing arrangements or other sources. If we raise additional funds through further issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our common stock, including shares of common stock sold in this offering. Any debt financing obtained by us would be senior to our common stock, would likely cause us to incur interest expenses, and could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may increase our expenses and make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions and in-licensing opportunities. We may also be required to secure any such debt obligations with some or all of our assets. For example, our Loan Agreement is secured by substantially all of our existing property and assets other than our intellectual property assets, subject to certain exceptions. Our Loan Agreement also contains a negative pledge on intellectual property owned by us. If we raise additional funds through collaborations or marketing, distribution or licensing, or royalty-based financing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams or product candidates or grant licenses on terms that may not be favorable to us. Securing financing could require a substantial amount of time and attention from our management and may divert a disproportionate amount of their attention away from day-to-day activities, which may adversely affect our management's ability to oversee the development and commercialization, if approved, of our product candidates. It is also possible that we may allocate significant amounts of capital toward solutions or technologies for which market demand is lower than anticipated and, as a result, abandon such efforts. Adequate additional financing may not be available to us on acceptable terms, or at all. If we are unable to raise additional funds when needed, we may be required to delay, limit, reduce or terminate our product development or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves. Any of these negative developments could have a material adverse effect on our business, operating results, financial condition and common stock price.

We may not have cash available to us in an amount sufficient to enable us to make interest or principal payments on our indebtedness when due.

Our Loan Agreement provides for term loans of up to an aggregate of $45.0 million, of which $20.0 million was borrowed upon signing. We can become eligible to draw the remaining $25.0 million upon the achievement of regulatory milestones related to our Glucagon Rescue Pen. All obligations under our Loan Agreement are secured by substantially all of our existing property and assets other than our intellectual property assets, subject to certain exceptions. This debt financing may create additional financial risk for us, particularly if our business or prevailing financial market conditions are not conducive to paying off or refinancing our outstanding debt obligations at maturity.

Failure to satisfy our current and future debt obligations under our Loan Agreement could result in an event of default and, as a result, our lenders could accelerate all of the amounts due. Events of default include our failure to comply with customary affirmative covenants as well as our breach of customary negative covenants in the Loan Agreement. Affirmative covenants include the maintenance of a $5.0 million minimum cash balance in the event that we maintain one or more permitted accounts at other institutions. Negative covenants include prohibition on the payment of dividends and distributions, certain mergers and change of control events, and the occurrence of material adverse changes in the company's business or its prospect of repayment of its obligations. In the event of an acceleration of amounts due under our Loan Agreement as a result of an event of default, we may not have sufficient funds or may be unable to arrange for additional financing to repay our indebtedness while still pursuing our current business strategy. In addition, our lenders could seek to enforce their security interests in any collateral securing such indebtedness.

Risks Related to the Product Development and Regulatory Approval of Our Product Candidates

We are dependent on the success of our glucagon product candidates, particularly our Glucagon Rescue Pen. We may not submit our NDA for our Glucagon Rescue Pen and the FDA may not accept our NDA for filing on our expected timeframe or ever. Even if our NDA is accepted for filing by the FDA, we cannot be certain that our Glucagon Rescue Pen or any of our other product candidates will receive marketing approval. Without marketing approval we will not be able to commercialize our product candidates or generate product revenues.

We have devoted a significant portion of our financial resources and business efforts to the development of the Glucagon Rescue Pen. While we intend to submit an NDA for the Glucagon Rescue Pen in the second quarter of 2018, we have not received approval from regulatory authorities to market the Glucagon Rescue Pen or any other product candidate in any jurisdiction, and it is possible that neither our Glucagon Rescue Pen nor any other product candidates we may seek to develop in the future will ever obtain the appropriate regulatory approvals necessary for us to commence product sales. We may not submit our NDA for our Glucagon Rescue Pen and the FDA may not accept our NDA for filing on our expected timeframe or ever. Even if our NDA is accepted for filing by the FDA, we cannot be certain that our Glucagon Rescue Pen or any of our other product candidates will receive marketing approval.

The development of a product candidate and issues relating to its approval and marketing are subject to extensive regulation by the Food and Drug Administration, or FDA, in the United States and by comparable regulatory authorities in other countries. We are not permitted to market our product candidates in the United States until we receive approval of a New Drug Application, or NDA, from the FDA. The time required to obtain approval by the FDA and comparable foreign authorities is unpredictable but typically takes many years following the commencement of clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions.

NDAs must include extensive preclinical and clinical data and supporting information to establish the product candidate's safety and effectiveness for each desired indication. NDAs must also include significant information regarding the chemistry, manufacturing and controls for the product. Obtaining approval of a NDA is a lengthy, expensive and uncertain process, and we may not be successful in obtaining approval. If we submit a NDA to the FDA, the FDA must decide whether to accept or reject the submission for filing. We cannot be certain that any submissions will be accepted for filing and review by the FDA. In addition, our Glucagon Rescue Pen is considered to be a drug-device combination product by the FDA, and its NDA will require review and coordination by the FDA's drug and device centers prior to approval. We cannot predict whether we will obtain regulatory approval to commercialize our Glucagon Rescue Pen or any of our other product candidates, and we cannot, therefore, predict the timing of any future revenues from these product candidates, if any. Any delay or setback in the regulatory approval or commercialization of any of these product candidates will adversely affect our business.

The FDA has substantial discretion in the drug approval process, including the ability to delay, limit or deny approval of a product candidate for many reasons. For example the FDA:

- could determine that we cannot rely on the Section 505(b)(2) regulatory pathway for our product candidates;
- could determine that the information provided by us was inadequate, contained clinical deficiencies or otherwise failed to demonstrate the safety and effectiveness of our Glucagon Rescue Pen or any of our product candidates for any indication;
- may not find the data from bioequivalence studies and/or clinical trials sufficient to support the submission of a NDA or to obtain marketing approval in the United States, including any findings that the clinical and other benefits of our product candidates outweigh their safety risks;
- may disagree with our trial design or our interpretation of data from preclinical studies, bioequivalence studies and/or clinical trials, or may change the requirements for approval even after it has reviewed and commented on the design for our trials;
- may determine that there are unacceptable risks associated with the device component of our Glucagon Rescue Pen or that there are deficiencies with the information submitted to demonstrate the safety, effectiveness and reliability of the device component;

- may determine that we have identified the wrong listed drug or drugs or that approval of our Section 505(b)(2) application for our Glucagon Rescue Pen or any of our other product candidates is blocked by patent or non-patent exclusivity of the listed drug or drugs or of other previously-approved drugs with the same conditions of approval as our Glucagon Rescue Pen;
- may identify deficiencies in the manufacturing processes or facilities of third-party manufacturers with which we enter into agreements for the manufacturing of our product candidates;
- may audit some or all of our clinical research and human factors study sites to determine the integrity of our data and may reject any or all of such data;
- may approve our product candidates for fewer or more limited indications than we request, or may grant approval contingent on the performance of costly post-approval clinical trials;
- may change its approval policies or adopt new regulations; or
- may not approve the labeling claims that we believe are necessary or desirable for the successful commercialization of our product candidates.

We have completed two Phase 3 clinical trials evaluating our Glucagon Rescue Pen in patients with T1D. Our first Phase 3 clinical trial was a non-inferiority comparison of the Glucagon Rescue Pen against Eli Lilly's glucagon determined by an increase in plasma glucose concentration from below 50.0 mg/dL to greater than 70.0 mg/dL within 30 minutes after receiving glucagon. In this trial, our Glucagon Rescue Pen did not meet a primary endpoint for noninferiority in the intent-to-treat, or ITT, population due to one response failure in excess of the pre-specified threshold of three response failures. In the same trial, two subjects were censored from the mITT population because of a clinically significant protocol violation, and the remaining subjects were used for the per-protocol analysis. In accordance with FDA and International Council for Harmonisation guidance for evaluation of non-inferiority studies, we presented a series of analyses implementing ITT, mITT, and per-protocol cohorts for all the endpoints for this clinical trial to the FDA at a pre-NDA meeting held in December 2017. In that meeting, the FDA agreed overall that the totality of data for our Glucagon Rescue Pen is sufficient to support NDA review. However, certain of our analyses may be viewed as post-hoc analyses and although we believe that post-hoc analyses can provide additional information regarding results from this trial, retrospective analyses can result in the introduction of bias and may be given less weight by the FDA, including for purposes of determining whether to accept our NDA for filing or approving our NDA.

The FDA provided additional comments to address prior to NDA submission related to the prefilled syringe presentation of our Glucagon Rescue Pen. Based on these comments, we are conducting additional studies, the results from which we intend to include in our Glucagon Rescue Pen submission to the FDA.

In order to generate additional information regarding the entire treatment episode, we are conducting an additional non-inferiority Phase 3b clinical trial comparing our Glucagon Rescue Pen to Eli Lilly's glucagon. We intend to complement our NDA submission with the results of this clinical trial. If this Phase 3b clinical trial produces negative or inconclusive results, or has adverse safety data, the FDA or other regulatory authorities may require us to conduct additional clinical trials prior to approval.

In any event, the FDA may not accept our NDA submission for review, or the FDA may require us to undertake additional activities, such as conducting additional studies or performing other analyses before accepting our NDA for filing or approving our Glucagon Rescue Pen.

Even if a product is approved, the FDA may limit the indications for which the product may be marketed, require extensive warnings on the product labeling or require expensive and time-consuming clinical trials and/or reporting as conditions of approval. Regulators of other countries and jurisdictions have their own procedures for approval of product candidates with which we must comply prior to marketing in those countries or jurisdictions.

Obtaining regulatory approval for marketing of a product candidate in one country does not ensure that we will be able to obtain regulatory approval in any other country. In addition, delays in approvals or rejections of marketing applications in the United States or other countries may be based upon many factors, including regulatory requests for additional analyses, reports, data, preclinical studies and clinical trials, regulatory questions regarding different interpretations of data and results, changes in regulatory policy during the period of product development and the emergence of new information regarding our product candidates or other products. Also, regulatory approval for any of our product candidates may be withdrawn.

We intend to utilize the 505(b)(2) pathway for the regulatory approval of certain of our product candidates, including our Glucagon Rescue Pen. If the FDA does not conclude that the Glucagon Rescue Pen or such other product candidates meet the requirements of Section 505(b)(2), final marketing approval of our product candidates by the FDA or other regulatory authorities may be delayed, limited, or denied, any of which would adversely affect our ability to generate operating revenues.

We are pursuing a regulatory pathway pursuant to Section 505(b)(2) of the Federal Food, Drug and Cosmetic Act, or FDCA, for the approval of certain of our product candidates, including our Glucagon Rescue Pen, which allows us to rely on our submissions on existing clinical data for the drug. Section 505(b)(2) was enacted as part of the Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Amendments, and permits the submission of a NDA where at least some of the information required for approval comes from preclinical studies or clinical trials not conducted by or for the applicant and for which the applicant has not obtained a right of reference. The FDA interprets Section 505(b)(2) of the FDCA to permit the applicant to rely upon the FDA's previous findings of safety and efficacy for an approved product. The FDA requires submission of information needed to support any changes to a previously approved drug, such as published data or new studies conducted by the applicant or clinical trials demonstrating safety and efficacy. The FDA could refuse to file our NDA submissions, request additional information before accepting our submissions for filing or require additional information to sufficiently demonstrate safety and efficacy to support approval.

If the FDA determines that our Glucagon Rescue Pen or our other product candidates do not meet the requirements of Section 505(b)(2), we may need to conduct additional clinical trials, provide additional data and information, and meet additional standards for regulatory approval. If this were to occur, the time and financial resources required to obtain FDA approval for these product candidates, and the complications and risks associated with these product candidates, would likely substantially increase. Moreover, an inability to pursue the Section 505(b)(2) regulatory pathway would likely result in new competitive products reaching the market more quickly than our product candidates, which would likely materially adversely impact our competitive position and prospects. Even if we are allowed to pursue the Section 505(b)(2) regulatory pathway, we cannot assure you that our product candidates will receive the requisite approvals for commercialization.

Some pharmaceutical companies and other actors have objected to the FDA's interpretation of Section 505(b)(2) to allow reliance on the FDA's prior findings of safety and effectiveness. If the FDA changes its interpretation of Section 505(b)(2), or if the FDA's interpretation is successfully challenged in court, this could delay or even prevent the FDA from approving any Section 505(b)(2) application that we submit. Moreover, the FDA recently adopted an interpretation of the three-year exclusivity provisions whereby a 505(b)(2) application can be blocked by exclusivity even if it does not rely on the previously-approved drug that has exclusivity (or any safety or effectiveness information regarding that drug). Under the FDA's new interpretation, the approval of one or more of our product candidates may be blocked by exclusivity awarded to a previously-approved drug product that shares certain innovative features with our product candidates, even if our 505(b)(2) application does not identify the previously-approved drug product as a listed drug or rely upon any of its safety or efficacy data. Any failure to obtain regulatory approval of our product candidates would significantly limit our ability to generate revenues, and any failure to obtain such approval for all of the indications and labeling claims we deem desirable could reduce our potential revenues.

Clinical failure may occur at any stage of clinical development, and the results of our clinical trials may not support our proposed indications for our product candidates. If our clinical trials fail to demonstrate efficacy and safety to the satisfaction of the FDA or other regulatory authorities, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development of such product candidate.

We cannot be certain that existing clinical trial results will be sufficient to support regulatory approval of our product candidates. Success in preclinical testing and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the results of later clinical trials will replicate the results of prior clinical trials and preclinical testing. Moreover, success in clinical trials in a particular indication, does not ensure that a product candidate will be successful in other indications. A number of companies in the pharmaceutical industry have suffered significant setbacks in clinical trials, even after promising results in earlier preclinical studies or clinical trials or successful later-stage trials in other related indications. These setbacks have been caused by, among other things, preclinical findings made while clinical trials were underway and safety or efficacy observations made in clinical trials, including previously unreported adverse events. The results of preclinical and early clinical

trials of our product candidates may not be predictive of the results of later-stage clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through preclinical and initial clinical trials. A failure of a clinical trial to meet its predetermined endpoints would likely cause us to abandon a product candidate and may delay development of any other product candidates. Any delay in, or termination of, our clinical trials will delay the submission of the NDA to the FDA, the Marketing Authorization Application, or MAA, to the European Medicines Agency, or EMA, or other similar applications with other relevant foreign regulatory authorities and, ultimately, our ability to commercialize our product candidates and generate revenue.

Additional time may be required to obtain regulatory approval for our product candidates because they are combination products.

Certain of our product candidates, including our Glucagon Rescue Pen, are drug and device combination products that require coordination within the FDA and similar foreign regulatory agencies for review of their device and drug components. Medical products containing a combination of new drugs, biological products or medical devices may be regulated as "combination products" in the United States and Europe. A combination product generally is defined as a product comprised of components from two or more regulatory categories (e.g., drug/device, device/biologic, drug/biologic). Each component of a combination product is subject to the requirements established by the FDA for that type of component, whether a new drug, biologic or device. In order to facilitate pre-market review of combination products, the FDA designates one of its centers to have primary jurisdiction for the pre-market review and regulation of the overall product based upon a determination by the FDA of the primary mode of action of the combination product. Where approval of the drug and device is sought under a single application, the increased complexity of the review process may delay approval. The FDA review process and criteria are not well-established areas, which could also lead to delays in the approval process. The EMA has a parallel review process in place for combination products, the potential effects of which in terms of approval and timing could independently affect our ability to market our combination products in Europe.

Delays in conducting clinical trials could result in increased costs to us and delay our ability to obtain regulatory approval for our product candidates.

Any delays in conducting clinical trials and related drug development programs could materially affect our product development costs and delay regulatory approval of our product candidates. We do not know whether planned clinical trials will begin on time, will need to be redesigned, or will be completed on schedule, if at all. A clinical trial can be delayed for a variety of reasons, including:

- delays or failures in obtaining regulatory authorization to commence a trial because of safety concerns of regulators relating to our product candidates or similar product candidates, competitive or comparator products or supportive care products or failure to follow regulatory guidelines;
- delays or failures in obtaining clinical materials and manufacturing sufficient quantities of the product candidate for use in a trial;
- delays or failures in reaching agreement on acceptable terms with prospective study sites or other contract research organizations, or CROs;
- delays or failures in obtaining approval of our clinical trial protocol from an institutional review board, or IRB, to conduct a clinical trial at a prospective study site;
- receipt by a competitor of marketing approval for a product targeting an indication that our product candidate targets, such that we are not "first to market" with our product candidate;
- delays in recruiting or enrolling subjects to participate in a clinical trial, particularly with respect to our product candidates for certain rare indications, including those for which we have obtained, or plan to seek, orphan drug designation;
- failure of a clinical trial or clinical investigators to be in compliance with current Good Clinical Practices, or cGCPs;
- unforeseen safety issues;
- inability to monitor subjects adequately during or after treatment;
- difficulty monitoring multiple study sites;

- the FDA requiring alterations to any of our study designs, our nonclinical strategy or our manufacturing plans;
- failure of our third-party clinical trial managers to satisfy their contractual duties, comply with regulations, or meet expected deadlines; and
- determination by regulators that the clinical design of a trial is not adequate.

Clinical trials may also be delayed or terminated as a result of ambiguous or negative interim results. In addition, a clinical trial may be suspended or terminated by us, the FDA, the Internal Review Boards, or IRBs, at the sites where the IRBs are overseeing a trial, or a data safety monitoring board overseeing the clinical trial at issue, or other regulatory authorities due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities;
- unforeseen safety issues, including serious adverse events associated with a product candidate, or lack of effectiveness; and
- lack of adequate funding to continue the clinical trial.

Further, conducting clinical trials in foreign countries, as we have done and plan to do for certain of our product candidates, presents additional risks that may delay completion of our clinical trials. These risks include the failure of enrolled patients in foreign countries to adhere to clinical protocol as a result of differences in healthcare services or cultural customs, managing additional administrative burdens associated with foreign regulatory schemes, as well as political and economic risks relevant to such foreign countries.

Our product candidates may have undesirable side effects which may delay or prevent marketing approval, or, if approval is received, require them to include safety warnings, require them to be taken off the market or otherwise limit their sales.

Undesirable side effects that may be caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign authorities. The range and potential severity of possible side effects from systemic therapies are significant. The results of future clinical trials may show that our product candidates cause undesirable or unacceptable side effects, which could interrupt, delay or halt clinical trials, and result in delay of, or failure to obtain, marketing approval from the FDA and other regulatory authorities, or result in marketing approval from the FDA and other regulatory authorities with restrictive label warnings. Recent developments in the pharmaceutical industry have prompted heightened government focus on safety reporting during both pre- and post-approval time periods and pharmacovigilance. Global health authorities may impose regulatory requirements to monitor safety that may burden our ability to commercialize our drug products.

To date, patients treated with our ready-to-use glucagon have experienced drug-related side effects typically observed with glucagon products, including nausea, vomiting and headaches. Results of our trials could reveal a high and unacceptable severity and prevalence of these or other side effects. It is possible that there may be side effects associated with our other product candidates' use. In such an event, our trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our product candidates for any or all targeted indications. The drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects.

Even if any of our product candidates receives marketing approval and we or others later identify undesirable or unacceptable side effects caused by such products:

- regulatory authorities may require the addition of labeling statements, including “black box” warnings, contraindications or dissemination of field alerts to physicians and pharmacies;
- we may be required to change instructions regarding the way the product is administered, conduct additional clinical trials or change the labeling of the product;
- we may be subject to limitations on how we may promote the product;

- sales of the product may decrease significantly;
- regulatory authorities may require us to take our approved product off the market;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could also 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 revenues from the sale of our products.

We have received orphan drug designation for our product candidates with respect to certain indications and intend to pursue such designation for others, but we may be unable to obtain such designation or to maintain the benefits associated with orphan drug status, including market exclusivity, even if that designation is granted.

We have received orphan drug designation from the FDA for three of our product candidates, which are our ready-to-use glucagon for PBH and congenital hyperinsulinism, and our ready-to-use diazepam for acute repetitive seizures. We intend to pursue such designation for others in specific orphan indications in which there is a medically plausible basis for its use. Under the Orphan Drug Act of 1983, the FDA may designate a product candidate as an orphan drug if it is intended to treat a rare disease or condition, which is generally defined as having a patient population of fewer than 200,000 individuals in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States. Orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages, and user-fee waivers. After the FDA grants orphan drug designation, the generic identity of the drug and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process. Although we intend to seek orphan drug designation for certain additional indications, we may never receive such designation. Moreover, obtaining orphan drug designation for one indication does not mean we will be able to obtain such designation for another indication.

If a product that has orphan drug designation subsequently receives the first FDA approval for a particular active ingredient for the disease for which it has such designation, the product is entitled to orphan drug exclusivity, which means that the FDA may not approve any other applications, including a NDA, to market the same drug for the same indication for seven years, except in limited circumstances such as if the FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. Similarly, the FDA can subsequently approve a drug with the same active moiety for the same condition during the exclusivity period if the FDA concludes that the later drug is clinically superior, meaning the later drug is safer, more effective or makes a major contribution to patient care. Even with respect to the indications for which we have received orphan designation, we may not be the first to obtain marketing approval for any particular orphan indication due to the uncertainties associated with developing pharmaceutical products, and thus approval of our product candidates could be blocked for seven years if another company previously obtained approval and orphan drug exclusivity for the same drug and same condition. If we do obtain exclusive marketing rights in the United States, they may be limited if we seek approval for an indication broader than the orphan designated indication and may be lost if the FDA later determines that the request for designation was materially defective or if we are unable to assure sufficient quantities of the product to meet the needs of the relevant patients. Further, exclusivity may not effectively protect the product from competition because different drugs with different active moieties can be approved for the same condition, the same drugs can be approved for different indications and might then be used off-label in our approved indication, and different drugs for the same condition may already be approved and commercially available.

In Europe, the period of orphan drug exclusivity is ten years, although it may be reduced to six years if, at the end of the fifth year, it is established that the criteria for orphan drug designation are no longer met, in other words, when it is shown on the basis of available evidence that the product is sufficiently profitable not to justify maintenance of market exclusivity. We have received orphan drug designation from the EMA for our ready-to-use glucagon for treatment of congenital hyperinsulinism.

Our failure to successfully identify, develop and market additional product candidates could impair our ability to grow.

As part of our growth strategy, we intend to identify, develop and market additional product candidates leveraging our formulation technology platforms. We are exploring various therapeutic opportunities for our pipeline programs. We may spend several years completing our development of any particular current or future internal product candidates, and failure can occur at any stage. The product candidates to which we allocate our resources may not end up being successful. While we identified several potential applications of our ready-to-use glucagon, including our Glucagon Rescue Pen and additional chronic or intermittent conditions, there is no guarantee that we will be able to utilize our formulation technology platforms to advance additional product candidates.

In the future, we may be dependent upon pharmaceutical companies, academic scientists and other researchers to sell or license product candidates, approved products or the underlying technology to us. The process of proposing, negotiating and implementing a license or acquisition of a product candidate or approved product is lengthy and complex. Other companies, including some with substantially greater financial, marketing and sales resources, may compete with us for the license or acquisition of product candidates and approved products. We have limited resources to identify and execute the acquisition or in-licensing of third-party products, businesses and technologies and integrate them into our current infrastructure. Moreover, we may devote resources to potential acquisitions or in-licensing opportunities that are never completed, or we may fail to realize the anticipated benefits of such efforts. We may not be able to acquire the rights to additional product candidates on terms that we find acceptable, or at all.

In addition, future acquisitions may entail numerous operational and financial risks, including:

- exposure to unknown liabilities;
- disruption of our business and diversion of our management's time and attention to develop acquired products or technologies;
- incurrence of substantial debt, dilutive issuances of securities or depletion of cash to pay for acquisitions;
- higher than expected acquisition and integration costs;
- difficulty in combining the operations and personnel of any acquired businesses with our operations and personnel;
- increased amortization expenses;
- impairment of relationships with key suppliers or customers of any acquired businesses due to changes in management and ownership; and
- inability to motivate key employees of any acquired businesses.

Further, any product candidate that we identify internally or acquire would require additional development efforts prior to commercial sale, including extensive clinical testing and approval by the FDA and other regulatory authorities.

Risks Related to the Commercialization and Marketing of our Product Candidates

Our business depends entirely on the success of our product candidates. Even if approved, our product candidates may not be accepted in the marketplace and our business may be materially harmed.

To date, we have expended significant time, resources and effort on the development of our product candidates, and a substantial portion of our resources going forward will be focused on seeking marketing approval for and planning for potential commercialization of our lead product candidate, our Glucagon Rescue Pen, in the United States. Our business and future success are substantially dependent on our ability to successfully and timely obtain regulatory approval for and commercialize our Glucagon Rescue Pen. Our other product candidates are in earlier stages of development and subject to the risks of failure inherent in developing drug products. Accordingly, our ability to generate product revenues in the immediate term will depend on our ability to successfully obtain marketing approval for and commercialize our Glucagon Rescue Pen. Any delay or setback in the regulatory approval or commercialization of any of our product candidates will adversely affect our business.

Even if all regulatory approvals are obtained, the commercial success of our product candidates depends on gaining market acceptance among physicians, patients, patient advocacy groups, healthcare payors and the medical community. The degree of market acceptance of our product candidates will depend on many factors, including:

- the scope of regulatory approvals, including limitations or warnings contained in a product candidate's regulatory-approved labeling;
- our ability to produce, through a validated process, sufficiently large quantities of our product candidates to permit successful commercialization;
- our ability to establish and maintain commercial manufacturing arrangements with third-party manufacturers;
- our ability to build and maintain sales, distribution and marketing capabilities sufficient to launch commercial sales of our product candidates;
- the acceptance in the medical community of the potential advantages of the product candidate, including with respect to our efforts to increase adoption of our product candidates such as our Glucagon Rescue Pen by patients and healthcare providers;
- the incidence, prevalence and severity of adverse side effects of our product candidates;
- the willingness of physicians to prescribe our product candidates and of the target patient population to try these therapies;
- the price and cost-effectiveness of our product candidates;
- the extent to which each product is approved for use at, or included on formularies of, hospitals and managed care organizations;
- any negative publicity related to our or our competitors' products or other formulations of products that we administer, including as a result of any related adverse side effects;
- alternative treatment methods and potentially competitive products;
- the potential advantages of the product candidate over existing and future treatment methods;
- the strength of our sales, marketing and distribution support; and
- the availability of sufficient third-party coverage and reimbursement.

Additionally, if the Glucagon Rescue Pen or any of our other product candidates receives marketing approval and we or others later identify undesirable or unacceptable side effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw approvals of such products, require us to take our approved product off the market or ask us to voluntarily remove the product from the market;
- regulatory authorities may require the addition of labeling statements, specific warnings, a contraindication or field alerts to physicians and pharmacies;
- regulatory authorities may impose conditions under a risk evaluation and mitigation strategy, or REMS, including distribution of a medication guide to patients outlining the risks of such side effects or imposing distribution or use restrictions;
- we may be required to change the way the product is administered, conduct additional clinical trials or change the labeling of the product;
- we may be subject to limitations on how we may promote the product;
- sales of the product may decrease significantly;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

If our product candidates are approved but do not achieve an adequate level of acceptance by physicians, patients and third-party payors, we may never generate significant revenue from these products, and our business, financial condition and results of operations may be materially harmed. Even if our products achieve market acceptance, we may not be able to maintain that market acceptance over time if new therapeutics are introduced that are more favorably received than our products or that render our products obsolete, or if significant adverse events occur. If

our products do not achieve and maintain market acceptance, we will not be able to generate sufficient revenue from product sales to attain profitability.

The market opportunity for our product candidates may be smaller than we estimate.

The potential market opportunity for our product candidates is difficult to precisely estimate. Our estimates of the potential market opportunity for our product candidates include several key assumptions of the current market size and current pricing for commercially available products and is based on industry and market data obtained from industry publications, studies conducted by us, our industry knowledge, third-party research reports and other surveys. Industry publications and third-party research generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. For example, our projections for the potential size of the market for our Glucagon Rescue Pen are based on our belief that we would be able to increase the adoption of emergency glucagon products by patients and care providers. While we believe that our internal assumptions are reasonable, if any of these assumptions proves to be inaccurate, then the actual market for our product candidates, including our Glucagon Rescue Pen, could be smaller than our estimates of our potential market opportunity. If the actual market for our product candidates is smaller than we expect, our product revenue may be limited and it may be more difficult for us to achieve or maintain profitability.

Our company has limited experience marketing and selling drug products and are currently developing an internal sales organization. If we are unable to establish marketing, sales and distribution capabilities or enter into agreements with third parties to market, sell and distribute our product candidates, we may not be able to generate product revenues.

We currently do not have sufficient infrastructure for the sales, marketing or distribution of our product candidates, and the cost of establishing and maintaining such an organization may exceed the benefits of doing so. In order to commercialize our product candidates, we must expand our marketing, sales, distribution, managerial and other non-technical capabilities and/or make arrangements with third parties to perform these services. We intend to establish a sales force to promote our Glucagon Rescue Pen in the United States, if we obtain FDA approval. There are significant expenses and risks involved with establishing our own sales and marketing capabilities, including our ability to hire, retain and appropriately incentivize qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel, and effectively manage a geographically dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities could delay any product launch, which would adversely impact the commercialization of our product candidates, including our Glucagon Rescue Pen. We are building out our commercial organization in anticipation of receiving marketing approval of our Glucagon Rescue Pen. If the expected commercial launch of our Glucagon Rescue Pen is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

We cannot be sure that we will be able to hire a sufficient number of sales representatives or that they will be effective at promoting our products that receive regulatory approval, if any. In addition, we will need to commit significant additional management and other resources to establish and grow our sales organization. We may not be able to achieve the necessary development and growth in a cost-effective manner or realize a positive return on our investment. We will also have to compete with other companies to recruit, hire, train and retain sales and marketing personnel.

Factors that may inhibit our efforts to commercialize our products include:

- our inability to recruit and train adequate numbers of sales and marketing personnel;
- the inability of sales personnel to obtain access to or to persuade adequate numbers of physicians to prescribe any of our product candidates that receive regulatory approval; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

In the event that we are unable to effectively implement our sales organization or distribution strategy on a timely and effective basis, if at all, the commercialization of our product candidates could be delayed which would negatively impact our ability to generate product revenues.

We intend to leverage the sales and marketing capabilities that we establish for our Glucagon Rescue Pen to commercialize additional product candidates for the management of other hypoglycemic conditions, if approved by the FDA, in the United States. If we are unable to do so for any reason, we would need to expend additional resources to establish commercialization capabilities for those product candidates, if approved.

In addition, we intend to establish collaborations to commercialize our product candidates outside of the United States, if approved by the relevant regulatory authorities. Therefore, our future success will depend, in part, on our ability to enter into and maintain collaborative relationships for such efforts, the collaborator's strategic interest in the product and such collaborator's ability to successfully market and sell the product. We may not be able to establish or maintain such collaborative arrangements, or if able to do so, that they will have effective sales forces. To the extent that we depend on third parties for marketing and distribution, any revenues we receive will depend upon the efforts of such third parties, and such efforts may not be successful.

Reimbursement decisions by third-party payors may have an adverse effect on pricing and market acceptance. If there is not sufficient reimbursement for our products, it is less likely that they will be widely used.

Our future revenues and profitability will be adversely affected if U.S. and foreign governmental, private third-party insurers and payors and other third-party payors, including Medicare and Medicaid, do not agree to defray or reimburse the cost of our products to the patients. If these entities fail to provide coverage and reimbursement with respect to our products or provide an insufficient level of coverage and reimbursement, our products may be too costly for some patients to afford them and physicians may not prescribe them. In addition, limitations on the amount of reimbursement for our products may also reduce our profitability. In the United States and some foreign jurisdictions, there have been, and we expect there will continue to be, actions and proposals to control and reduce healthcare costs. There have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval for our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any of our product candidates for which we obtain marketing approval. Government and other third-party payors are also challenging the prices charged for healthcare products and increasingly limiting, and attempting to limit, both coverage and level of reimbursement for prescription drugs.

Market acceptance and sales of our products and product candidates that we develop, if approved, will depend on reimbursement policies and may be affected by future healthcare reform measures. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which drugs they will cover and establish payment levels. In the United States, no uniform policy of coverage and reimbursement for drugs exists among third-party payors. As a result, obtaining coverage and reimbursement approval of a drug from a government or other third-party payor is a time-consuming and costly process that could require us to provide to each payor supporting scientific, clinical and cost-effectiveness data for the use of our drugs on a payor-by-payor basis, with no assurance that coverage and adequate reimbursement will be obtained. We cannot be certain that reimbursement will be available for any of our product candidates, or that reimbursement rates will not change for our current products. Also, we cannot be certain that reimbursement policies will not reduce the demand for, or the price paid for, our products. If reimbursement is not available or is available on a limited basis, we may not be able to successfully commercialize any of our product candidates.

The United States and several other jurisdictions are considering, or have already enacted, a number of legislative and regulatory proposals to change the healthcare system in ways that could negatively affect our ability to sell our products profitably. Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access to healthcare. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. Furthermore, third-party payors are increasingly requiring that companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. We expect to experience pricing pressures in connection with the sale of our products that we develop due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative proposals.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively, the ACA, became law in the United States. The ACA contains

provisions that may reduce the profitability of drug products through increased rebates for drugs reimbursed by Medicaid programs, extension of Medicaid rebates to Medicaid managed care plans, and mandatory discounts for certain Medicare Part D beneficiaries and annual fees based on pharmaceutical companies' share of sales to federal health care programs. Adoption of general controls and measures, coupled with the tightening of restrictive policies in jurisdictions with existing controls and measures, could limit payments for pharmaceutical drugs. While we cannot predict what impact on federal reimbursement policies this legislation will have in general or on our business specifically, the ACA may result in downward pressure on pharmaceutical reimbursement, which could negatively affect market acceptance of our products and our product candidates. We cannot predict whether these challenges will continue or other proposals will be made or adopted, or what impact these efforts may have on us.

Some patients may require health insurance coverage to afford our products, if approved, and if we are unable to obtain adequate coverage and reimbursement by third-party payors for our products, our ability to successfully commercialize our product candidates may be adversely impacted. Any limitation on the use of our products or any decrease in the price of our products will have a material adverse effect on our ability to achieve profitability.

Pricing pressure from healthcare industry consolidation and our competitors may impact our ability to sell our products at prices necessary to support our current business strategies.

Our market is subject to competitive pricing pressure as a result of product competition and a trend of consolidation in the healthcare industry to aggregate purchasing power as healthcare costs increase and reforms initiated by legislators, regulators and third-party payors to curb these costs are implemented.

For example, Eli Lilly's Glucagon Emergency Kit, or GEK, is covered at or above 94% with unrestricted access across commercial, Medicare, Managed Medicaid and State Medicaid plans. Of our target patient population, approximately 50% are commercially-insured, one-third are covered by Medicare and approximately 15% are covered by Medicaid. However, as the healthcare industry consolidates, competition to provide products and services to industry participants has become more intense and may intensify as the potential purchasers of our products or third-party payors use their purchasing power to exert competitive pricing pressure. We expect that market demand, government regulation, third-party coverage and reimbursement policies and societal pressures will continue to change the healthcare industry worldwide, resulting in further business consolidations and alliances among our potential purchasers. If competitive forces drive down the prices we are able to charge for our products, our profit margins will shrink, which will adversely affect our ability to invest in and grow our business.

Even if we successfully obtain approval for, produce and distribute our Glucagon Rescue Pen, its success will be dependent on its proper use by patients, healthcare practitioners and caregivers.

While we have designed our Glucagon Rescue Pen to be operable by patients, caregivers and healthcare practitioners, we cannot control the successful use of the product by patients, caregivers and healthcare practitioners. Even though our Glucagon Rescue Pen was used correctly by individuals in our human factors study, there is no guarantee that these results will be replicated by users in the future. If we are not successful in promoting the proper use of our Glucagon Rescue Pen, if approved, by patients, healthcare practitioners and caregivers, we may not be able to achieve market acceptance or effectively commercialize our Glucagon Rescue Pen. In addition, even in the event of proper use of our Glucagon Rescue Pen, individual devices may fail. Increasing the scale of production inherently creates increased risk of manufacturing errors, and we may not be able to adequately inspect every device that is produced, and it is possible that individual devices may fail to perform as designed. Manufacturing errors could negatively impact market acceptance of any of our product candidates that receive approval, result in negative press coverage, or increase the risk that we may be sued.

Guidelines and recommendations can reduce the use of our product candidates.

Government agencies and industry associations such as the American Diabetes Association promulgate guidelines applicable to certain drug classes which may include our products and product candidates that we are developing. Recommendations from these organizations may relate to such matters as usage, dosage, route of administration and use of concomitant therapies. Regulations or guidelines affecting our products and product candidates that we are developing or the use of competitive or alternative products as the standard of care to be followed by patients and healthcare providers could result in decreased use of our product candidates or negatively impact our ability to gain market acceptance and market share.

Risks Related to our Industry and the Ongoing Legal and Regulatory Requirements to which our Product Candidates are Subject

Even if our product candidates receive regulatory approval, we may still face future development and regulatory difficulties. If we fail to comply with continuing U.S. and non-U.S. regulations or new safety data arise, we could lose our marketing approvals and our business would be seriously harmed.

Our product candidates, if approved, will also be subject to ongoing regulatory requirements for manufacturing, distribution, sale, labeling, packaging, storage, advertising, promotion, record-keeping and submission of safety and other post-market information. In addition, approved products, third-party suppliers and their facilities are required to comply with extensive FDA requirements and requirements of other similar agencies even after approval, including ensuring that quality control and manufacturing procedures conform to current good manufacturing practice, or cGMPs, and applicable Quality System regulations, or QSRs. As such, we and our third-party suppliers are subject to continual review and periodic inspections, both announced and unannounced, to assess compliance with cGMPs and QSRs. Accordingly, we and others with whom we work must continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production and quality control. We will also be required to report certain adverse reactions and production problems, if any, to the FDA and other similar agencies and to comply with certain requirements concerning advertising and promotion for our products. Promotional communications with respect to prescription drugs are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved label. Accordingly, we may not promote our approved products, if any, for indications or uses for which they are not approved.

If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or disagrees with the promotion, marketing or labeling of a product, it may impose restrictions on that product or us, including requiring withdrawal of the product from the market. These unknown problems could be discovered as a result of any post-marketing follow-up studies, routine safety surveillance or other reporting required as a condition to approval.

Regulatory agencies may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of a product. The FDA and other agencies, including the Department of Justice, or DOJ, closely regulate and monitor the post-approval marketing and promotion of products to ensure that they are manufactured, marketed and distributed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use and if we, or any future collaborators, do not market any of our product for which we, or they, receive marketing approval for only their approved indications, we, or they, may be subject to warnings or enforcement action for off-label marketing. Violation of the FDCA and other statutes, including the False Claims Act, relating to the promotion and advertising of prescription drugs may lead to investigations or allegations of violations of federal and state healthcare fraud and abuse laws and state consumer protection laws.

If our product candidates fail to comply with applicable regulatory requirements, or if a problem with one of our products or third-party suppliers is discovered, a regulatory agency may:

- restrict the marketing or manufacturing of such products;
- restrict the labeling of a product;
- issue warning letters or untitled letters which may require corrective action;
- mandate modifications to promotional materials or require us to provide corrective information to healthcare practitioners;
- require us to enter into a consent decree or permanent injunction, which can include imposition of various fines, reimbursements for inspection costs, required due dates for specific actions and penalties for noncompliance;
- impose other administrative or judicial civil or criminal penalties including fines, imprisonment and disgorgement of profits;
- suspend or withdraw regulatory approval;
- refuse to approve pending applications or supplements to approved applications filed by us;
- close the facilities of our third-party suppliers;

- suspend ongoing clinical trials;
- impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products or recommend or require a product recall.

The FDA's and foreign regulatory agencies' policies are subject to change and additional federal, state, local or non-U.S. governmental regulations may be enacted that could affect our ability to maintain compliance. We cannot predict the likelihood, nature or extent of adverse governmental regulation that may arise from future legislation or administrative action, either in the United States or abroad.

We operate in a 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 successfully commercialize our product candidates, even if approved.

The pharmaceutical and biotechnology industries are characterized by intense competition and significant and rapid technological change as researchers learn more about diseases and develop new technologies and treatments. Any product candidates that we successfully develop and commercialize will compete with existing drugs and new drugs that may become available in the future. While we believe that our product and product candidate platform, development expertise and scientific knowledge provide us with competitive advantages, we face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions and governmental agencies and public and private research institutions. Many of our current and potential competitors are major pharmaceutical 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. Our ability to compete successfully will depend on our ability to develop future products that reach the market in a timely manner, are well adopted by patients and healthcare providers and receive adequate coverage and reimbursement from third-party payors. Because of the size of the potential market, we anticipate that companies will dedicate significant resources to developing products competitive to our product candidates.

For example, we have numerous competitors in the severe hypoglycemia market, which currently include Eli Lilly's Glucagon Emergency Kit and Novo Nordisk's GlucaGen, and in the future may include a subcutaneous dasiglucagon auto-injector, being developed by Zealand Pharma and an intranasal glucagon dry powder, being developed by Eli Lilly. At any time, these or other industry participants may develop alternative treatments, products or procedures for the treatment of severe hypoglycemia that compete directly or indirectly with our Glucagon Rescue Pen, if approved. They may also develop and patent processes or products earlier than we can or obtain regulatory clearance or approvals for competing products 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, if approved, could be negatively affected and our results of operations could suffer.

The widespread acceptance of currently available therapies with which our product candidates will compete may limit market acceptance of our product candidates even if commercialized. For example, emergency glucagon products are currently available for hypoglycemia and are widely accepted in the medical community and have a long history of use. These treatments will compete with our Glucagon Rescue Pen, if approved, and may limit the potential for our Glucagon Rescue Pen to receive widespread acceptance if commercialized.

We intend to submit the NDA for our Glucagon Rescue Pen to the FDA for approval under Section 505(b)(2) of the FDCA. If the FDA approves a competitor's application for a product candidate or drug-device combination product before our application for a similar product candidate or drug-device combination product, and grants such competitor a period of exclusivity, the FDA may take the position that it cannot approve our 505(b)(2) application for a similar product candidate until the exclusivity period expires. Additionally, even if our 505(b)(2) application for our Glucagon Rescue Pen is approved first and we receive three-year marketing exclusivity, we may still be subject to competition from other companies with approved products or approved 505(b)(2) NDAs for different conditions of use that would not be restricted by any grant of exclusivity to us.

If the FDA or other applicable regulatory authorities approve generic products that compete with any of our product candidates, the sales of our product candidates, if approved, could be adversely affected.

Once a NDA, including a Section 505(b)(2) application, is approved, the product covered becomes a "listed drug" which can be cited by potential competitors in support of approval of an abbreviated new drug application, or ANDA.

FDA regulations and other applicable regulations and policies provide incentives to manufacturers to create modified versions of a drug to facilitate the approval of an ANDA or other application for similar substitutes. If these manufacturers demonstrate that their product has the same active ingredient(s), dosage form, strength, route of administration, and conditions of use, or labeling, as our product candidate, they might only be required to conduct a relatively inexpensive study to show that their generic product is absorbed in the body at the same rate and to the same extent as, or is bioequivalent to, our product candidate. In some cases, even this limited bioequivalence testing can be waived by the FDA. Competition from generic equivalents to our product candidates could substantially limit our ability to generate revenues and therefore to obtain a return on the investments we have made in our product candidates.

Even if we obtain FDA approval of our lead product candidate, Glucagon Rescue Pen, or our other product candidates in the United States, we may never obtain or maintain foreign regulatory approvals to market our products in other countries.

We do not have any product candidates approved for sale in any jurisdiction, including in international markets, and we do not have experience in obtaining regulatory approval in international markets. In order to market products in any particular jurisdiction, we must establish and comply with numerous and varying regulatory requirements on a country-by-country basis regarding safety and efficacy. Approval by the FDA in the United States does not ensure approval 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. International jurisdictions require separate regulatory approvals and compliance with numerous and varying regulatory requirements. The approval procedures vary among countries and may involve requirements for additional testing, and the time required to obtain approval may differ from country to country and from that required to obtain clearance or approval in the United States. In addition, with respect to our Glucagon Rescue Pen, we are engaged in ongoing interactions with European regulatory authorities regarding our development path in Europe. For our Glucagon Rescue Pen, because Eli Lilly's Glucagon Emergency Kit is not approved in Europe, we may be required to conduct one or more additional clinical trials comparing our Glucagon Rescue Pen to Novo Nordisk's GlucaGen, in addition to our existing clinical trials involving Eli Lilly's Glucagon Emergency Kit. Such requirements may increase our research expenses and delay our regulatory development plans for potential European approval of our Glucagon Rescue Pen. There can be no assurance that the results that we observed from our prior and ongoing clinical trials for our Glucagon Rescue Pen will be replicated in any future clinical trials that we undertake, or that any such results will be sufficient to secure approval in Europe.

In addition, some countries only approve or certify a product for a certain period of time, and we are required to re-approve or re-certify our products in a timely manner prior to the expiration of our prior approval or certification. 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, or if we fail to have our products re-approved or re-certified, our business, results of operations and financial condition could be adversely affected. The foreign regulatory approval or certification process may include all of the risks associated with obtaining FDA clearance or approval. In addition, the clinical standards of care may differ significantly such that clinical trials conducted in one country may not be accepted by healthcare providers, third-party payors or regulatory authorities in other countries, and regulatory approval in one country does not guarantee regulatory approval in any other country. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, or if regulatory approvals in international markets are delayed, our target market will be reduced and our ability to realize the full market potential of any drug we develop will be unrealized.

Recently enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and affect the prices we may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay regulatory approval of our product candidates, including our Glucagon Rescue Pen, restrict or regulate post-approval activities and affect our ability to profitably sell any product candidates for which we obtain marketing approval.

Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. In March 2010, President Obama signed into law the ACA, a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms.

Among the provisions of the ACA of importance to our product candidates are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13.0% of the average manufacturer price for branded and generic drugs, respectively;
- expansion of healthcare fraud and abuse laws, including the False Claims Act and the federal Anti-Kickback Statute, or AKS, which include, among other things, new government investigative powers and enhanced penalties for non-compliance;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 70% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;
- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals, thereby potentially increasing manufacturers' Medicaid rebate liability;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;
- the requirements under the federal open payments program and its implementing regulations;
- a requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

Since its enactment, some of the provisions of the ACA have yet to be fully implemented, while certain provisions have been subject to judicial, congressional, and executive challenges. As a result, there have been delays in the implementation of, and action taken to repeal or replace, certain aspects of the ACA. The U.S. Supreme Court has upheld certain key aspects of the legislation, including a tax-based shared responsibility payment imposed on certain individuals who fail to maintain qualifying health coverage for all or part of a year, which is commonly known as the requirement that all individuals maintain health insurance coverage or pay a penalty, referred to as the "individual mandate." However, as a result of tax reform legislation passed in December 2017, the individual mandate has been eliminated effective January 1, 2019. According to the Congressional Budget Office, the repeal of the individual mandate will cause 13 million fewer Americans to be insured in 2027 and premiums in insurance markets may rise.

Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. One Executive Order directs federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or

regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. The second Executive Order terminates the cost-sharing subsidies that reimburse insurers under the ACA. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017. The loss of the cost share reduction payments is expected to increase premiums on certain policies issued by qualified health plans under the ACA. In addition, the Centers for Medicare & Medicaid Services, or CMS, has recently proposed regulations that would give states greater flexibility in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces. Litigation and legislation over the ACA are likely to continue, with unpredictable and uncertain results. We continue to evaluate the effect that the ACA and its possible repeal and replacement has on our business.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. These changes included aggregate reductions to Medicare payments to providers of 2% per fiscal year through 2027. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several providers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. We expect that the ACA, as well as other healthcare reform measures that may be adopted in the future, may result in additional reductions in Medicare and other healthcare funding, more rigorous coverage criteria, new payment methodologies and in additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our products.

The costs of prescription pharmaceuticals in the United States has also been the subject of considerable debate, and members of Congress and the Trump Administration have indicated that each will address such costs through new legislative and administrative measures. To date, there have been several recent U.S. congressional inquiries and proposed state and federal legislation designed to, among other things, improve transparency in drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare, and reform government program reimbursement methodologies for drug products. The pricing of prescription pharmaceuticals is also subject to governmental control outside the United States. In these other countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost effectiveness of our product candidates to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our ability to generate revenues and become profitable could be impaired.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for approved products. In addition, there have been several recent Congressional inquiries and proposed bills designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the cost of drugs under Medicare and reform government program reimbursement methodologies for drugs. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be. In addition, increased scrutiny by the U.S. Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent labeling and post-marketing testing and other requirements.

We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or abroad. For example, certain policies of the Trump administration may impact our business and industry. Namely, the Trump administration has taken several executive actions, including the issuance of a number of Executive Orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine regulatory and oversight activities such as implementing statutes through rulemaking, issuance of guidance and review and approval of marketing applications. Notably, on January 30, 2017, President Trump issued an Executive Order, applicable to all executive agencies,

including the FDA, that requires that for each notice of proposed rulemaking or final regulation to be issued in fiscal year 2017, the agency shall identify at least two existing regulations to be repealed, unless prohibited by law. These requirements are referred to as the "two-for-one" provisions. This Executive Order includes a budget neutrality provision that requires the total incremental cost of all new regulations in the 2017 fiscal year, including repealed regulations, to be no greater than zero, except in limited circumstances. For fiscal years 2018 and beyond, the Executive Order requires agencies to identify regulations to offset any incremental cost of a new regulation and approximate the total costs or savings associated with each new regulation or repealed regulation. In interim guidance issued by the Office of Information and Regulatory Affairs within the Office of Management and Budget on February 2, 2017, the Trump administration indicates that the "two-for-one" provisions may apply not only to agency regulations, but also to significant agency guidance documents. Further, on February 24, 2017, President Trump issued an Executive Order requiring each agency to designate a regulatory reform officer and create a regulatory reform task force to evaluate existing regulations and make recommendations regarding their repeal, replacement or modification. It is difficult to predict how these requirements will be implemented, and the extent to which they will impact the FDA's ability to exercise its regulatory authority. If these executive actions impose constraints on the FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted.

Our relationships with customers and payors will be subject to applicable anti-kickback, fraud and abuse, transparency, and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm, administrative burdens and diminished profits and future earnings.

Healthcare providers, physicians and third-party payors will play a primary role in the recommendation and prescription of any products for which we obtain marketing approval. Our future arrangements with investigators, healthcare practitioners, consultants, third-party payors and customers, if any, will subject us to broadly applicable fraud and abuse and other healthcare laws and regulations. These laws and regulations may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell and distribute any products for which we obtain marketing approval. These include the following:

- *Anti-Kickback Statute.* The federal Anti-Kickback Statute, or AKS, makes it illegal for any person or entity (including a prescription drug manufacturer or a party acting on its behalf) to knowingly and willfully solicit, offer, receive or pay remuneration, directly or indirectly, in cash or in kind, in exchange for or intended to induce or reward either the referral of an individual for, or the purchase, order, prescription or recommendation or arranging of, any good or service, for which payment may be made under a federal healthcare program such as Medicare and Medicaid. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other. Although there are several statutory exceptions and regulatory safe harbors protecting certain common activities from prosecution, they are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchasing or recommending may be subject to scrutiny if they do not qualify for an exception or safe harbor. A person or entity can be found guilty of violating the AKS without actual knowledge of the statute or specific intent to violate it. In addition, the government may assert that a claim including items or services resulting from a violation of the AKS constitutes a false or fraudulent claim for purposes of the federal False Claims Act or federal civil money penalties statute. Violations of the AKS carry potentially significant civil and criminal penalties, including imprisonment, fines, administrative civil monetary penalties, and exclusion from participation in federal healthcare programs.
- *False Claims Laws.* The federal false claims and civil monetary penalties laws, including the federal civil False Claims Act, impose criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for, among other things, knowingly presenting, or causing to be presented false or fraudulent claims for payment by a federal healthcare program or making a false statement or record material to payment of a false claim or knowingly avoiding, decreasing or concealing an obligation to pay money to the federal government, with potential liability including mandatory treble damages and significant per-claim penalties.
- *Anti-Inducement Law*. The anti-inducement law prohibits, among other things, the offering or giving of remuneration, which includes, without limitation, any transfer of items or services for free or for less than fair market value (with limited exceptions), to a Medicare or Medicaid beneficiary that the person knows or

should know is likely to influence the beneficiary's selection of a particular supplier of items or services reimbursable by a federal or state governmental program.

- *HIPAA*. The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program (including private payors) or making false or fraudulent statements relating to healthcare matters. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. Additionally, HIPAA, as amended by HITECH and its implementing regulations, also imposes obligations on covered entities and their business associates, including mandatory contractual terms and technical safeguards, with respect to maintaining the privacy, security and transmission of individually identifiable health information.
- *Transparency Requirements.* The federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics, and medical supplies for which payment is available under Medicare, Medicaid, or the Children's Health Insurance Program, with specific exceptions, to report annually to the CMS information related to payments or transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as information regarding ownership and investment interests held by the physicians described above and their immediate family members.
- *Analogous State and Foreign Laws*. Analogous state and foreign fraud and abuse laws and regulations, such as state anti-kickback and false claims laws, can apply to our business practices, including but not limited to, research, distribution, sales and marketing arrangements, and claims involving healthcare items or services reimbursed by non-governmental third-party payors, and are generally broad and are enforced by many different federal and state agencies as well as through private actions. Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; and state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures and pricing information. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not pre-empted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements with third parties, and our business generally, will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices, including our arrangements with physicians and other healthcare providers, some of whom receive stock options as compensation for services provided, may not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion of products from government funded healthcare programs, such as Medicare and Medicaid, disgorgement, contractual damages, reputational harm and the curtailment or restructuring of our operations. Defending against any such actions can be costly, time-consuming and may require significant financial and personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired. Further, if any of the physicians or other healthcare providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

Governments outside the United States tend to impose strict price controls, which may adversely affect our revenues, if any.

In some countries, such as the countries of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. In addition, there can be considerable

pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after coverage and reimbursement have been obtained. Reference pricing used by various countries and parallel distribution or arbitrage between low-priced and high-priced countries, can further reduce prices. To obtain reimbursement or pricing approval in some countries, we, or any future collaborators, may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidates to other available therapies, which is time-consuming and costly. If reimbursement of our product candidates is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be harmed.

We will need to obtain FDA approval of any proposed product names, and any failure or delay associated with such approval may adversely impact our business.

Any name we intend to use for our product candidates will require approval from the FDA regardless of whether we have secured a trademark registration from the U.S. Patent and Trademark Office, or USPTO. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. The FDA may object to any product name we submit if it believes the name inappropriately implies medical claims. If the FDA objects to any of our proposed product names, we may be required to adopt an alternative name for our product candidates. If we adopt an alternative name, we would lose the benefit of any existing trademark applications for such product candidate, and may be required to expend significant additional resources in an effort to identify a suitable product name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. We may be unable to build a successful brand identity for a new trademark in a timely manner or at all, which would limit our ability to commercialize our product candidates.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. From time to time and in the future, our operations may involve the use of hazardous and flammable materials, including chemicals and biological materials, and may also produce hazardous waste products. Even if we contract with third parties for the disposal of these materials and waste products, we cannot completely eliminate the risk of contamination or injury resulting from these materials. In the event of contamination or injury resulting from the use or disposal of our hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

We maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, but this insurance may not provide adequate coverage against potential liabilities. However, we do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. Current or future environmental laws and regulations may impair our research, development or production efforts. In addition, failure to comply with these laws and regulations may result in substantial fines, penalties or other sanctions.

Risks Related to our Dependence on Third Parties

We depend on third parties to conduct the clinical trials for our product candidates, and any failure of those parties to fulfill their obligations could harm our development and commercialization plans.

We depend on independent clinical investigators, CROs, academic institutions and other third-party service providers to conduct clinical trials for our product candidates. Although we rely heavily on these parties for successful execution of our clinical trials, we are ultimately responsible for the results of their activities and many aspects of their activities are beyond our control. For example, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial, but the independent clinical investigators may prioritize other projects over ours or may fail to timely communicate issues regarding our

products to us. Third parties may not complete activities on schedule or may not conduct our clinical trials in accordance with regulatory requirements or our stated protocols. The delay or early termination of any of our clinical trial arrangements, the failure of third parties to comply with the regulations and requirements governing clinical trials, or our reliance on results of trials that we have not directly conducted or monitored could hinder or delay the development, approval and commercialization of our product candidates and would adversely affect our business, results of operations and financial condition.

We maintain compliance programs related to our clinical trials through our clinical operations and development personnel working with our finance and legal group's support. Our clinical trial vendors are required to monitor and report to us the possible remedial action required for the conduct of clinical studies; and we are obliged to take the appropriate action. We also monitor clinical trial vendors through our regulatory and quality assurance staff and service providers. However, we cannot assure you that our programs and personnel will timely and fully discover any fraud or abuse that may occur in connection with our clinical trials. Such fraud or abuse, if it occurs, could have a material adverse effect on our research, development, commercialization activities and results.

Our reliance on third-party suppliers, including single-source suppliers and a limited number of options for alternate sources for our product candidates, including our Glucagon Rescue Pen, could harm our ability to develop our product candidates or to commercialize any product candidates that are approved.

We do not currently own or operate manufacturing facilities for the production of any of our product candidates, including our Glucagon Rescue Pen. We rely on third-party suppliers to manufacture and supply our products. We currently rely on a number of single-source suppliers, such as Bachem Americas, Inc., or Bachem, for API, Pyramid Laboratories, Inc., or Pyramid, for drug product and SHL Pharma, LLC, or SHL Pharma, for auto-injector and final product assembly. We have entered into a supply agreement with Bachem and a joint development agreement with SHL Pharma and intend to enter into supply agreements with Pyramid and SHL Pharma. Because we have contracts in place with some but not all of our third-party suppliers, our suppliers may not be required to provide us with any guaranteed minimum production levels or have dedicated capacity for our products. As a result, there can be no assurances that we will be able to obtain sufficient quantities of key materials or products in the future, which could have a material adverse effect on our business.

For us to be successful, our third-party suppliers must be able to provide us with raw materials, components and products in substantial quantities, in compliance with regulatory requirements, in accordance with agreed upon specifications, at acceptable costs and on a timely basis. Reliance on third-party suppliers entails risks to which we would not be subject if we manufactured products ourselves, including reliance on the third-party for regulatory compliance and quality assurance, the possibility that products will not be delivered on a timely basis, the possibility of increases in pricing for our products, the possibility of breach or termination of a manufacturing agreement or purchase order by the third-party.

Our product candidates, including Glucagon Rescue Pen, are drug-device combination products that will be regulated under the drug regulations of the FDCA based on its primary mode of action as a drug. Third-party manufacturers may not be able to comply with the cGMP regulatory requirements applicable to drug-device combination products, including applicable provisions of the FDA's drug cGMP regulations, device cGMP requirements embodied in the QSR or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates, operating restrictions and criminal prosecutions, any of which could significantly affect supplies of our product candidates. The facilities used by our contract manufacturers to manufacture our product candidates must be approved by the FDA pursuant to inspections that will be conducted after we submit our NDA to the FDA. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with cGMPs and QSRs. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product

candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved. Contract manufacturers may face manufacturing or quality control problems causing drug substance production and shipment delays or a situation where the contractor may not be able to maintain compliance with the applicable cGMP and QSR requirements. Any failure to comply with cGMP or QSR requirements or other FDA, EMA and comparable foreign regulatory requirements could adversely affect our clinical research activities and our ability to develop our product candidates and market our products following approval.

The FDA and other foreign regulatory authorities require manufacturers to register manufacturing facilities. The FDA and corresponding foreign regulators also inspect these facilities to confirm compliance with applicable cGMPs and QSRs. Contract manufacturers may face manufacturing or quality control problems causing drug substance or device component production and shipment delays or a situation where the contractor may not be able to maintain compliance with the applicable cGMP or QSR requirements. Any failure to comply with cGMP or QSR requirements or other FDA, EMA and comparable foreign regulatory requirements could adversely affect our clinical research activities and our ability to develop our product candidates and market our products following approval.

There are a limited number of third-party suppliers that are compliant with cGMP and/or QSRs, as required by the FDA, the European Union, and other regulatory authorities, and that also have the necessary expertise and capacity to manufacture our materials and products. As a result, it may be difficult for us to locate third-party suppliers for our anticipated future needs, and our anticipated growth could strain the ability of our current third-party suppliers to deliver products, raw materials and components to us. If we are unable to arrange for third-party suppliers for our materials and products, or to do so on commercially reasonable terms, we may not be able to complete development of or market our products.

The introduction of new cGMP or QSR regulations or product specific requirements by a regulatory body, may require that we source alternative materials, modify existing manufacturing processes or implement design changes to our products that are subject to prior approval by the FDA or other regulatory authorities. We may also be required to reassess a third-party supplier's compliance with all applicable new regulations and guidelines, which could further impede our ability to manufacture and supply products in a timely manner. As a result, we could incur increased production costs, experience supply interruptions, suffer damage to our reputation and experience an adverse effect on our business and financial results.

In addition, our reliance on third-party suppliers involves a number of additional risks, including, among other things:

- our suppliers may fail to comply with regulatory requirements or make errors in manufacturing raw materials, components or products that could negatively affect the efficacy or safety of our products or cause delays in shipments of our products;
- we may be subject to price fluctuations by suppliers due to terms within a long-term supply arrangements or lack of a long-term supply arrangements for key materials and products;
- our suppliers may lose access to critical services or sustain damage to a facility, including losses due to natural disasters or geo-political events, that may result in a sustained interruption in the manufacture and supply of our products;
- fluctuations in demand for our products or a supplier's demand from other customers, may affect their ability or willingness to deliver materials or products in a timely manner or may lead to long-term capacity constraints at the supplier;
- we may not be able to find new or alternative sources or reconfigure our products and manufacturing processes in a timely manner, if a necessary raw material or components becomes unavailable; and
- our suppliers may encounter financial or other hardships unrelated to our demand for materials, products and services, which could inhibit their ability to fulfill our orders and meet our requirements.

If any of the above risks materialize and we are unable to satisfy commercial demand for our products 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. In addition, we could be forced to

secure new materials or develop alternative third-party suppliers, which can be difficult given our product complexity, long development lead-times and global regulatory review processes.

We may in the future elect to manufacture certain new or existing products ourselves, without the assistance of third-party suppliers. However, in order to make that election, we will need to invest substantial additional funds and recruit qualified personnel in order to operate our own manufacturing facility on a commercial basis. There can be no assurance that we will be able to successfully manufacture our own products and if we are not able to make or obtain adequate supplies of our raw materials, components or products, it will be more difficult for us to launch new products, supply our current markets and compete effectively.

If our third-party manufacturers of our product candidates are unable to increase the scale of their production of our product candidates, or increase the product yield of manufacturing, then our costs to manufacture the product may increase and commercialization may be delayed.

In order to produce sufficient quantities to meet the demand for clinical trials and subsequent commercialization of our Glucagon Rescue Pen or any of our other product candidates in our pipeline or that we may develop, our third-party manufacturers will be required to increase their production and automate and otherwise optimize their manufacturing processes while maintaining the quality of the product. The transition to larger scale production could prove difficult. In addition, if our third-party manufacturers are not able to automate and otherwise optimize their manufacturing process to increase the product yield for our Glucagon Rescue Pen and other components of our product candidates, or if they are unable to produce increased amounts of our product candidates while maintaining quality, then we may not be able to meet the demands of clinical trials or market demands, which could decrease our ability to generate revenues and have a material adverse impact on our business and results of operations.

We enter into various contracts in the normal course of our business in which we indemnify the other party to the contract. In the event we have to perform under these indemnification provisions, it could have a material adverse effect on our business, financial condition and results of operations.

In the normal course of business, we periodically have entered, and in the future may enter, into academic, commercial, service, collaboration, licensing, feasibility, consulting and other agreements that contain indemnification provisions. We have in the past and may in the future agree to indemnify the counterparties from losses arising from claims relating to the products, processes or services made, used, sold or performed. We may also agree to indemnify our vendors from any third-party product liability claims that could result from the production, use or consumption of the product, as well as for alleged infringements of any patent or other intellectual property right by a third party.

Should our obligation under an indemnification provision exceed applicable insurance coverage or if we were denied insurance coverage, our business, financial condition and results of operations could be adversely affected. Similarly, if we are relying on a collaborator to indemnify us and the collaborator is denied insurance coverage or the indemnification obligation exceeds the applicable insurance coverage and does not have other assets available to indemnify us, our business, financial condition and results of operations could be adversely affected.

We expect to seek to establish collaborations and, if we are not able to establish them on commercially reasonable terms, we may have to alter our development and commercialization plans.

We expect to seek one or more collaborators for the development and commercialization of one or more of our product candidates, particularly with respect to our pipeline product candidates or foreign geographies. Likely collaborators may include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies and biotechnology companies.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator’s resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator’s evaluation of a number of factors. Those factors may include the potential differentiation of our product candidate from competing product candidates, design or results of clinical trials, the likelihood of approval by the FDA or comparable foreign regulatory authorities and the regulatory pathway for any such approval, the potential market for the product candidate, the costs and complexities of manufacturing and delivering the product to patients and the potential of competing products. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available for collaboration and whether such a collaboration could be more attractive than the one with

us for our product candidate. 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 product candidates or bring them to market and generate product revenue.

Collaborations are complex and time-consuming to negotiate and document. Further, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators. Any collaboration agreements that we enter into in the future may contain restrictions on our ability to enter into potential collaborations or to otherwise develop specified product candidates. We may not be able to negotiate collaborations 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 the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its 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.

Risks Related to our Intellectual Property

Our success depends on our ability to protect our intellectual property and proprietary technology, as well as the ability of our collaborators to protect their intellectual property and proprietary technology.

Our success depends in large part on our ability to obtain and maintain patent protection and trade secret protection in the United States and other countries with respect to our proprietary product candidates. If we do not adequately protect our intellectual property rights, competitors may be able to erode or negate any competitive advantage we may have, which could harm our business and ability to achieve profitability. To protect our proprietary position, we file patent applications in the United States and abroad related to our novel product candidates that are important to our business; we may in the future also license or purchase patent applications filed by others. The patent application and approval process is expensive and time-consuming. We may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner.

If the scope of the patent protection we or our potential licensors obtain is not sufficiently broad, we may not be able to prevent others from developing and commercializing technology and products similar or identical to ours. The degree of patent protection we require to successfully compete in the marketplace may be unavailable or severely limited in some cases and may not adequately protect our rights or permit us to gain or keep any competitive advantage. We cannot provide any assurances that any of our patents have, or that any of our pending patent applications that mature into issued patents will include, claims with a scope sufficient to protect our current and future product candidates or otherwise provide any competitive advantage. In addition, to the extent that we license intellectual property in the future, we cannot assure you that those licenses will remain in force. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. Furthermore, patents have a limited lifespan. In the United States, the natural expiration of a patent is generally twenty years after it is filed. Various extensions may be available; however, the life of a patent, and the protection it affords, is limited. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized.

Even if they are unchallenged, our patents and pending patent applications, if issued, may not provide us with any meaningful protection or prevent competitors from designing around our patent claims to circumvent our patents by developing similar or alternative technologies or therapeutics in a non-infringing manner. For example, a third party may develop a competitive therapy that provides benefits similar to one or more of our product candidates but that uses a formulation and/or a device that falls outside the scope of our patent protection. If the patent protection provided by the patents and patent applications we hold or pursue with respect to our product candidates is not sufficiently broad to impede such competition, our ability to successfully commercialize our product candidates could be negatively affected, which would harm our business. Although we currently own all of our patents and our patent applications, similar risks would apply to any patents or patent applications that we may in-license in the future.

We, or any future partners, collaborators, or licensees, may fail to identify patentable aspects of inventions made in the course of development and commercialization activities before it is too late to obtain patent protection on them. Therefore, we may miss potential opportunities to strengthen our patent position.

It is possible that defects of form in the preparation or filing of our patents or patent applications may exist, or may arise in the future, for example with respect to proper priority claims, inventorship, claim scope, or requests for patent term adjustments. If we or our partners, collaborators, licensees or licensors fail to establish, maintain or protect such patents and other intellectual property rights, such rights may be reduced or eliminated. If our partners, collaborators, licensees or licensors are not fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, such patent rights could be compromised. If there are material defects in the form, preparation, prosecution, or enforcement of our patents or patent applications, such patents may be invalid and/or unenforceable, and such applications may never result in valid, enforceable patents. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain. No consistent policy regarding the breadth of claims allowed in biotechnology and pharmaceutical patents has emerged to date in the United States or in many foreign jurisdictions. In addition, the determination of patent rights with respect to pharmaceutical compounds commonly involves complex legal and factual questions, which has in recent years been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain.

Moreover, because the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, our patents or pending patent applications may be challenged in the courts or patent offices in the United States and abroad. There is no assurance that all of the potentially relevant prior art relating to our patents and patent applications has been found. If such prior art exists, it may be used to invalidate a patent, or may prevent a patent from issuing from a pending patent application. For example, such patent filings may be subject to a third-party preissuance submission of prior art to the USPTO to other patent offices around the world. Alternately or additionally, we may become involved in post-grant review procedures, oppositions, derivations proceedings, reexaminations, inter partes review or interference proceedings, in the United States or elsewhere, challenging patents or patent applications in which we have rights, including patents on which we rely to protect our business. An adverse determination in any such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products.

Pending and future patent applications may not result in patents being issued which protect our business, in whole or in part, or which effectively prevent others from commercializing competitive products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection. In addition, the laws of foreign countries may not protect our rights to the same extent or in the same manner as the laws of the United States. For example, patent laws in various jurisdictions, including significant commercial markets such as Europe, restrict the patentability of methods of treatment of the human body more than United States law does.

The patent application process is subject to numerous risks and uncertainties, and there can be no assurance that we or any of our future development partners will be successful in protecting our product candidates by obtaining and defending patents. These risks and uncertainties include the following:

- the USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the patent process. There are situations in which noncompliance can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, competitors might be able to enter the market earlier than would otherwise have been the case;
- patent applications may not result in any patents being issued;
- patents that may be issued may be challenged, invalidated, modified, revoked, circumvented, found to be unenforceable or otherwise may not provide any competitive advantage;
- our competitors, many of whom have substantially greater resources and many of whom have made significant investments in competing technologies, may seek or may have already obtained patents that will limit, interfere with or eliminate our ability to make, use, and sell our potential product candidates;

- there may be significant pressure on the U.S. government and international governmental bodies to limit the scope of patent protection both inside and outside the United States for disease treatments that prove successful, as a matter of public policy regarding worldwide health concerns; and
- countries other than the United States may have patent laws less favorable to patentees than those upheld by U.S. courts, allowing foreign competitors a better opportunity to create, develop and market competing product candidates in such countries.

Issued patents that we have or may in the future obtain or license may not provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our or our future licensors' patents by developing similar or alternative technologies or products in a non-infringing manner. Our competitors may also seek approval to market their own products similar to or otherwise competitive with our products. Alternatively, our competitors may seek to market generic versions of any approved products by submitting ANDAs to the FDA in which they claim that patents owned or in the future licensed by us are invalid, unenforceable or not infringed. In these circumstances, we may need to defend or assert our patents, or both, including by filing lawsuits alleging patent infringement. In any of these types of proceedings, a court or other agency with jurisdiction may find our patents invalid or unenforceable, or that our competitors are competing in a non-infringing manner. Thus, even if we have valid and enforceable patents, these patents still may not provide protection against competing products or processes sufficient to achieve our business objectives.

In the future, we may enter into license agreements with third parties pursuant to which they have the right, but not the obligation in certain circumstances to control enforcement of our licensed patents or defense of any claims asserting the invalidity of these patents. Even if we are permitted to pursue such enforcement or defense, we will require the cooperation of those licensors, and cannot guarantee that we would receive it and on what terms. We cannot be certain that those licensors will allocate sufficient resources or prioritize their or our enforcement of such patents or defense of such claims to protect our interests in the licensed patents. If we cannot obtain patent protection, or enforce existing or future patents against third parties, our competitive position and our financial condition could suffer.

In addition, we rely on the protection of our trade secrets and proprietary know-how. Although we have taken steps to protect our trade secrets and unpatented know-how, including entering into confidentiality agreements with third parties, and confidential information and inventions agreements with employees, consultants and advisors, we cannot provide any assurances that all such agreements have been duly executed, and third parties may still obtain this information or may come upon this or similar information independently. Additionally, if the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating our trade secrets. If any of these events occurs or if we otherwise lose protection for our trade secrets or proprietary know-how, our business may be harmed.

It is difficult and costly to protect our intellectual property and our proprietary technologies, and we may not be able to ensure their protection.

Our commercial success will depend in part on obtaining and maintaining patent protection and trade secret protection for the use, formulation and structure of our product candidates, the methods used to manufacture them, the related therapeutic targets and associated methods of treatment as well as on successfully defending these patents against potential third-party challenges. Our ability to protect our products and product candidates from unauthorized making, using, selling, offering to sell or importing by third parties is dependent on the extent to which we have rights under valid and enforceable patents that cover these activities.

The patent positions of pharmaceutical, biotechnology and other life sciences companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. Changes in either the patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. Further, the determination that a patent application or patent claim meets all of the requirements for patentability is a subjective determination based on the application of law and jurisprudence. The ultimate determination by the USPTO or by a court or other trier of fact in the United States, or corresponding foreign national patent offices or courts, on whether a claim meets all requirements of patentability cannot be assured. We have not conducted searches for third-party publications, patents and other information that may affect

the patentability of claims in our various patent applications and patents, so we cannot be certain that all relevant information has been identified. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our patents or patent applications, in any future licensed patents or patent applications or in third-party patents.

We cannot provide assurances that any of our patent applications will be found to be patentable, including over our own prior art patents, or will issue as patents. Neither can we make assurances as to the scope of any claims that may issue from our pending and future patent applications nor to the outcome of any proceedings by any potential third parties that could challenge the patentability, validity or enforceability of our patents and patent applications in the United States or foreign jurisdictions. Any such challenge, if successful, could limit patent protection for our products and product candidates and/or materially harm our business.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- we may not be able to generate sufficient data to support full patent applications that protect the entire breadth of developments in one or more of our programs;
- it is possible that one or more of our pending patent applications will not become an issued patent or, if issued, that the patent(s) will not: (a) be sufficient to protect our technology, (b) provide us with a basis for commercially viable products or (c) provide us with any competitive advantages;
- if our pending applications issue as patents, they may be challenged by third parties as not infringed, invalid or unenforceable under U.S. or foreign laws; or
- if issued, the patents under which we hold rights may not be valid or enforceable.

In addition, to the extent that we are unable to obtain and maintain patent protection for one of our products or product candidates or in the event that such patent protection expires, it may no longer be cost-effective to extend our portfolio by pursuing additional development of a product or product candidate for follow-on indications.

We also may rely on trade secrets to protect our technologies or products, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, outside scientific collaborators and other advisers may unintentionally or willfully disclose our information to competitors. Enforcing a claim that a third-party entity illegally obtained and is using any of our trade secrets is expensive and time-consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing to protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

Obtaining and maintaining patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and applications are required to be paid to the USPTO and various governmental patent agencies outside of the United States in several stages over the lifetime of the patents and applications. The USPTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process and after a patent has issued. There are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction.

Patent terms may be inadequate to protect our competitive position on our products for an adequate amount of time.

Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. Where available, we will seek extensions of patent terms in the United States and, if available, in other countries where we are prosecuting patents. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the normal expiration of the patent, which is limited to the approved indication (or any additional indications approved during the period of extension). However, the

applicable authorities, including the FDA and the USPTO in the United States, and any equivalent regulatory authority in other countries, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to our patents, or may grant more limited extensions than we request. If this occurs, our competitors may be able to take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case.

Others may challenge inventorship or claim an ownership interest in our intellectual property which could expose it to litigation and have a significant adverse effect on its prospects.

A third party or former employee or collaborator may claim an ownership interest in one or more of our patents or other proprietary or intellectual property rights. A third party could bring legal actions against us and seek monetary damages and/or enjoin clinical testing, manufacturing and marketing of the affected product or products. While we are presently unaware of any claims or assertions by third-parties with respect to our patents or other intellectual property, we cannot guarantee that a third-party will not assert a claim or an interest in any of such patents or intellectual property. If we become involved in any litigation, it could consume a substantial portion of our resources, and cause a significant diversion of effort by our technical and management personnel.

Changes to the patent law in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity and is therefore costly, time consuming and inherently uncertain. Recent patent reform legislation in the United States, including the Leahy-Smith America Invents Act, or the America Invents Act, could increase those uncertainties and costs. The America Invents Act was signed into law on September 16, 2011, and many of the substantive changes became effective on March 16, 2013. The America Invents Act reforms United States patent law in part by changing the U.S. patent system from a “first to invent” system to a “first inventor to file” system, expanding the definition of prior art, and developing a post-grant review system. This legislation changes United States patent law in a way that may weaken our ability to obtain patent protection in the United States for those applications filed after March 16, 2013.

Further, the America Invents Act created new procedures to challenge the validity of issued patents in the United States, including post-grant review and inter partes review proceedings, which some third parties have been using to cause the cancellation of selected or all claims of issued patents. For a patent with an effective filing date of March 16, 2013 or later, a petition for post-grant review can be filed by a third party in a nine-month window from issuance of the patent. A petition for inter partes review can be filed immediately following the issuance of a patent if the patent has an effective filing date prior to March 16, 2013. A petition for inter partes review can be filed after the nine-month period for filing a post-grant review petition has expired for a patent with an effective filing date of March 16, 2013 or later. Post-grant review proceedings can be brought on any ground of invalidity, whereas inter partes review proceedings can only raise an invalidity challenge based on published prior art and patents. In these adversarial actions, the USPTO reviews patent claims without the presumption of validity afforded to U.S. patents in lawsuits in U.S. federal courts and uses a lower burden of proof than used in litigation in U.S. federal courts. Therefore, it is generally considered easier for a competitor or third party to have a U.S. patent invalidated in a USPTO post-grant review or inter partes review proceeding than invalidated in a litigation in a U.S. federal court. If any of our patents are challenged by a third party in such a USPTO proceeding, there is no guarantee that we will be successful in defending the patent, which would result in a loss of the challenged patent right to us. Depending on future actions by the U.S. Congress, the U.S. courts, the USPTO and the relevant law-making bodies in other countries, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

We may not be able to enforce our intellectual property rights throughout the world.

Filing, prosecuting, enforcing and defending patents on our product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. The requirements for patentability may differ in certain countries, particularly in developing countries; thus, even in countries where we do pursue patent protection, there can be no assurance that any patents will issue with claims that cover our product candidates.

Moreover, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in foreign intellectual property laws. Additionally, laws of some countries outside of the United States and Europe do not afford intellectual property protection to the same extent as the laws of the United States and Europe. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of some countries, including India, China and other developing countries, do not favor the enforcement of patents and other intellectual property rights. This could make it difficult for us to stop the infringement of our patents or the misappropriation of our other intellectual property rights. For example, many foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. Consequently, we may not be able to prevent third parties from practicing our inventions in certain countries outside the United States and Europe. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop and market their own products and, further, may export otherwise infringing products to territories where we have patent protection, if our ability to enforce our patents to stop infringing activities is inadequate. These products may compete with our products, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Agreements through which we may license patent rights may not give us sufficient rights to permit us to pursue enforcement of those licensed patents or defense of any claims asserting the invalidity of these patents (or control of enforcement or defense) of such patent rights in all relevant jurisdictions as requirements may vary.

Proceedings to enforce our patent rights in foreign jurisdictions, whether or not successful, could result in substantial costs and divert our efforts and resources from other aspects of our business. Moreover, such proceedings could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Furthermore, while we intend to protect our intellectual property rights in major markets for our products, we cannot ensure that we will be able to initiate or maintain similar efforts in all jurisdictions in which we may wish to market our products. Accordingly, our efforts to protect our intellectual property rights in such countries may be inadequate.

Others may claim an ownership interest in our intellectual property which could expose us to litigation and have a significant adverse effect on our prospects.

A third party may claim an ownership interest in one or more of our patents or other proprietary or intellectual property rights. A third party could bring legal actions against us and seek monetary damages and/or enjoin clinical testing, manufacturing and marketing of the affected product or products. While we are presently unaware of any claims or assertions by third parties with respect to our patents or other intellectual property, we cannot guarantee that a third party will not assert a claim or an interest in any of such patents or intellectual property. If we become involved in any litigation, it could consume a substantial portion of our resources, and cause a significant diversion of effort by our technical and management personnel. If any of these actions are successful, in addition to any potential liability for damages, we could be required to obtain a license to continue to manufacture or market the affected product, in which case we may be required to pay substantial royalties or grant cross-licenses to our patents. We cannot, however, assure you that any such license will be available on acceptable terms, if at all. Ultimately, we could be prevented from commercializing a product candidate, or be forced to cease some aspect of our business operations as a result of claims of patent infringement or violation of other intellectual property rights, Further, the outcome of intellectual property litigation is subject to uncertainties that cannot be adequately quantified in advance, including the demeanor and credibility of witnesses and the identity of any adverse party. This is especially true in intellectual property cases that may turn on the testimony of experts as to technical facts upon which experts may reasonably disagree.

The pharmaceutical industry is characterized by frequent 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 or prevent us from 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. Generally, we do not conduct

independent reviews 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 uncertainty of litigation increase the risk of business assets and management's attention being diverted to patent litigation. We may receive in the future, particularly as a public company, communications from various industry participants alleging our infringement of their patents, trade secrets, or other intellectual property rights and/or offering licenses to such intellectual property. Any lawsuits resulting from such allegations could subject us to significant liability for damages and invalidate our proprietary rights. Any potential intellectual property litigation also could force us to do one or more of the following:

- stop selling products or using technology that contains the allegedly infringing intellectual property;
- lose the opportunity to license our technology to others or to collect royalty payments based upon successful protection and assertion of our intellectual property rights against others;
- incur significant legal expenses;
- pay substantial damages to the party whose intellectual property rights we may be found to be infringing;
- redesign those products that contain the allegedly infringing intellectual property, which could be costly, disruptive and/or infeasible; or
- attempt to obtain a license to the relevant intellectual property from third parties, which may not be available on reasonable terms or at all.

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. In connection with such litigation or claims, we may be required to obtain licenses or make changes to our products or technologies, and if we fail to do so, 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.

We may be subject to damages resulting from claims that we or our employees 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 pharmaceutical companies, including our competitors or potential competitors, in some cases until recently. We may be subject to claims that we or our employees 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. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and could be a distraction to management. If our defense to those claims fails, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Any litigation or the threat thereof may adversely affect our ability to hire employees. 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.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our patents, trademarks, copyrights or other intellectual property. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time consuming and divert the time and attention of our management and scientific personnel. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents, in addition to counterclaims asserting that our patents are invalid or unenforceable, or both. In any patent infringement proceeding, there is a risk that a court will decide that a patent of ours is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent's claims narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patent claims do not cover the invention. An adverse outcome in a litigation or proceeding involving one or more of our patents could limit our ability to assert those patents against those parties or other competitors, and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Similarly, if

we assert trademark infringement claims, a court may determine that the marks we have asserted are unenforceable, that the alleged infringing mark does not infringe our trademark rights, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this last instance, we could ultimately be forced to cease use of such trademarks.

Even if we establish infringement, the court may decide not to grant an injunction against further infringing activity and instead award only monetary damages, which may or may not be an adequate remedy. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could adversely affect the price of shares of our common stock. Moreover, there can be no assurance that we will have sufficient financial or other resources to file and pursue such infringement claims, which typically last for years before they are concluded. Even if we ultimately prevail in such claims, the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings.

Our unpatented trade secrets, know-how, confidential and proprietary information, and technology may be inadequately protected.

We rely in part on unpatented trade secrets, know-how and technology. This intellectual property is difficult to protect, especially in the pharmaceutical industry, where much of the information about a product must be submitted to regulatory authorities during the regulatory approval process. We seek to protect trade secrets, confidential information and proprietary information, in part, by entering into confidentiality and invention assignment agreements with employees, consultants, and others. These parties may breach or terminate these agreements, and we may not have adequate remedies for such breaches. Furthermore, these agreements may not provide meaningful protection for our trade secrets or other confidential or proprietary information or result in the effective assignment to us of intellectual property, and may not provide an adequate remedy in the event of unauthorized use or disclosure of confidential information or other breaches of the agreements. Despite our efforts to protect our trade secrets and our other confidential and proprietary information, we or our collaboration partners, board members, employees, consultants, contractors, or scientific and other advisors may unintentionally or willfully disclose our proprietary information to competitors.

There is a risk that our trade secrets and other confidential and proprietary information could have been, or could, in the future, be shared by any of our former employees with, and be used to the benefit of, any company that competes with us.

If we fail to maintain trade secret protection or fail to protect the confidentiality of our other confidential and proprietary information, our competitive position may be adversely affected. Competitors may also independently discover our trade secrets. Enforcement of claims that a third party has illegally obtained and is using trade secrets is expensive, time consuming and uncertain. If our competitors independently develop equivalent knowledge, methods and know-how, we would not be able to assert our trade secret protections against them, which could have a material adverse effect on our business.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our marks of interest and our business may be adversely affected.

Our trademarks or trade names may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We rely on both registration and common law protection for our trademarks. We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. During the trademark registration process, we may receive Office Actions from the USPTO objecting to the registration of our trademark. Although we would be given an opportunity to respond to those objections, we may be unable to overcome such rejections. In addition, in the USPTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and/or to seek the cancellation of registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be adversely affected.

A NDA submitted under Section 505(b)(2) subjects us to the risk that we may be subject to a patent infringement lawsuit that would delay or prevent the review or approval of our product candidate.

We expect to submit our NDAs for our product candidates, including our Glucagon Rescue Pen, to the FDA for approval under Section 505(b)(2) of the FDCA. Section 505(b)(2) permits the submission of a NDA where at least some of the information required for approval comes from preclinical studies and/or clinical trials that were not conducted by, or for, the applicant and for which the applicant has not obtained a right of reference. A NDA under Section 505(b)(2) would enable us to reference published literature and/or the FDA's previous findings of safety and effectiveness for a previously approved drug.

For NDAs submitted under Section 505(b)(2), the patent certification and related provisions of the Hatch-Waxman Act apply. Accordingly, if we rely for approval on the safety or effectiveness information for a previously approved drug, referred to as a listed drug, we will be required to include patent certifications in our 505(b)(2) application regarding any patents covering the listed drug. If there are patents listed in the FDA publication Approved Drug Products with Therapeutic Equivalence Evaluations, commonly known as the Orange Book, for the listed drug, and we seek to obtain approval prior to the expiration of one or more of those patents, we will be required to submit a Paragraph IV certification indicating our belief that the relevant patents are invalid, unenforceable or will not be infringed by the manufacture, use or sale of the product that is the subject of our 505(b)(2) application. Otherwise, our 505(b)(2) application cannot be approved by the FDA until the expiration of any patents listed in the Orange Book for the listed drug.

If we submit a Paragraph IV certification, we will be required to provide notice of that certification to the NDA holder and patent owner shortly after our 505(b)(2) application is accepted for filing. Under the Hatch-Waxman Act, the patent owner may file a patent infringement lawsuit after receiving such notice. If a patent infringement lawsuit is filed within 45 days of the patent owner's or NDA holder's receipt of notice (whichever is later), a one-time, automatic stay of the FDA's ability to approve the 505(b)(2) NDA is triggered, which typically extends for 30 months unless patent litigation is resolved in favor of the Paragraph IV filer or the patent expires before that time. Accordingly, we may invest a significant amount of time and expense in the development of one or more product candidates only to be subject to significant delay and patent litigation before such product candidates may be commercialized, if at all.

In addition, a 505(b)(2) application will not be approved until any non-patent exclusivity listed in the Orange Book for the listed drug, or for any other drug with the same, protected conditions of approval as our product, has expired. The FDA also may require us to perform one or more additional clinical trials or measurements to support the change from the listed drug, which could be time consuming and could substantially delay our achievement of regulatory approval. The FDA also may reject any future 505(b)(2) submissions and require us to submit traditional NDAs under Section 505(b)(1), which would require extensive data to establish safety and effectiveness of the product for the proposed use and could cause delay and additional costs. Or the FDA could reject any future 505(b)(2) application and require us to submit an ANDA if, before the submission of our 505(b)(2) application, the FDA approves an application for a product that is pharmaceutically equivalent to ours. These factors, among others, may limit our ability to commercialize our product candidates successfully.

Risks Related to Employee Matters, Managing Growth and Ongoing Operations

If product liability lawsuits are brought against us, our business may be harmed, and we may be required to pay damages that exceed our insurance coverage.

We may face liability claims related to the use or misuse of our product candidates and, if approved, our products. These claims may be expensive to defend and may result in large judgments against us. During the course of treatment, patients using our product candidates could suffer adverse medical effects for reasons that may or may not be related to our product candidates. We will face even greater risks upon any commercialization by us of our product candidates. Any of these events could result in a claim of liability. Any such claims against us, regardless of their merit, could result in significant costs to defend or awards against us that could materially harm our business, financial condition or results of operations. In addition, any such claims against us could result in a distraction to management, decreased demand for our products, an adverse effect on our public reputation, and/or difficulties in commercializing our products. To date, we have not received notice of any product liability claims against us. We maintain total products liability insurance coverage of $5.0 million.

Although we maintain product liability insurance for claims arising from the use of our product candidates in clinical trials prior to FDA approval and for claims arising from the use of our products after FDA approval at levels that we believe are appropriate, we may not be able to maintain our existing insurance coverage or obtain additional coverage on commercially reasonable terms for the use of our other product candidates and products in the future. Also, our insurance coverage and resources may not be sufficient to satisfy any liability resulting from product liability claims, which could materially harm our business, financial condition or results of operations.

Product liability claims could result in an FDA or other regulatory authority investigation of the safety or efficacy of our products, our manufacturing processes and facilities, our marketing programs, our internal safety reporting systems or our staff conduct. A regulatory authority investigation could also potentially lead to a recall of our products or more serious enforcement actions, limitations on the indications for which they may be used, or suspension or withdrawal of approval. Product liability claims could also result in investigation, prosecution or enforcement action by the DOJ or other federal or state government agencies.

Our business could suffer if we lose the services of key members of our senior management, or if we are not able to attract and retain other key employees and consultants.

We are dependent upon the continued services of key members of our executive management and a limited number of key advisors and personnel. In particular, we are highly dependent on the skills and leadership of our executive management team, including Paul Edick, our Chief Executive Officer, Nora Brennan, our Chief Financial Officer, Steven Prestrelski, our Chief Scientific Officer and Co-Founder, John Shannon, our Chief Operating Officer, Ken Johnson, our Senior Vice President, Clinical Development, Regulatory, Quality Assurance and Medical Affairs, and Beth Hecht, our General Counsel and Corporate Secretary. We have not historically maintained “key person” insurance on all of our executive officers but plan to obtain such insurance in the future. The loss of any one of these individuals could disrupt our operations or our strategic plans. Our industry has experienced a high rate of turnover of management personnel in recent years. Any of our personnel may terminate their employment at will. If we lose one or more of our executive officers or other key employees, our ability to implement our business strategy successfully could be seriously harmed. Furthermore, replacing executive officers or other key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to develop, gain marketing approval of and commercialize products successfully.

Additionally, our future success will depend on, among other things, our ability to continue to hire and retain the necessary qualified scientific, technical and managerial personnel, for whom we compete with numerous other companies, academic institutions and organizations. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these additional key employees on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions.

We rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by other entities and may have commitments under consulting or advisory contracts with those entities that may limit their availability to us. If we are unable to continue to attract and retain highly qualified personnel, our ability to develop and commercialize our product candidates will be limited.

We will need to increase the size of our organization, and we may encounter difficulties managing our growth.

As of March 1, 2018, we had 46 employees. As our product candidates continue to progress toward potential approval and commercialization, we anticipate the need to hire additional employees as required to add depth and specialized expertise to our team. This growth could place a strain on our administrative and operational infrastructure. If the product candidates that we are developing continue to advance in clinical trials, we will need to expand our development, regulatory, manufacturing, quality, compliance, recordkeeping, information technology, training, marketing and sales capabilities or contract with third parties to provide these capabilities for us. As our operations expand, we expect that we will need to develop additional relationships with various collaborators, CROs, suppliers, manufacturers and other organizations. We may not be able to establish such relationships or may incur significant costs to do so. Our ability to manage our growth will also require us to continue to improve our operational, financial and management controls, reporting systems and procedures, and other compliance programs

and processes, which will further increase our operating costs. Failure to manage our growth effectively could cause us to over-invest or under-invest in infrastructure, and result in losses or weaknesses in our infrastructure, which could adversely affect us. Additionally, our anticipated growth will increase the demands placed on our suppliers, resulting in an increased need for us to monitor our suppliers carefully for quality assurance, and our business could suffer.

We may be required to maintain high levels of inventory, which could consume a significant amount of our resources and reduce our cash flows.

As a result of the need to maintain substantial levels of inventory due to single third-party sourcing and long lead-time to develop alternate third-party sources, we intend to carry a high level of inventory for strategic materials and products and are subject to the risk of inventory obsolescence. 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.

We expect to incur significant additional costs as a result of being a public company, which may adversely affect our operating results and financial condition.

We expect to incur costs associated with corporate governance requirements, including requirements under the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, as well as rules implemented by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, the SEC and The Nasdaq Global Market. These rules and regulations are expected to increase our accounting, legal and financial compliance costs and make some activities more time-consuming and costly. In addition, we will incur additional costs associated with our public company reporting requirements and we expect those costs to increase in the future. For example, we will be required to devote significant resources to complete the assessment and documentation of our internal control system and financial process under Section 404 of the Sarbanes-Oxley Act, including an assessment of the design of our information systems associated with our internal controls.

To date, we have never conducted a review of our internal control for the purpose of providing the reports required by these rules. During the course of our review and testing, we may identify deficiencies and be unable to remediate them before we must provide the required reports. Furthermore, if we have a material weakness in our internal control over financial reporting, we may not detect errors on a timely basis and our financial statements may be materially misstated. We or our independent registered public accounting firm may not be able to conclude on an ongoing basis that we have effective internal control over financial reporting, which could harm our operating results, cause investors to lose confidence in our reported financial information and cause the trading price of our stock to fall. In addition, as a public company we will be required to timely file accurate quarterly and annual reports with the SEC under the Securities Exchange Act of 1934, or the Exchange Act, as amended. Any failure to report our financial results on an accurate and timely basis could result in sanctions, lawsuits, delisting of our shares from The Nasdaq Global Market or other adverse consequences. We will incur significant costs to remediate any material weaknesses we identify through these efforts. We also expect these rules and regulations to make it more expensive for us to maintain directors' and officers' liability insurance and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees, or as executive officers. We cannot predict or estimate the amount of additional costs we may incur or the timing of such costs.

New laws and regulations, as well as changes to existing laws and regulations affecting public companies, including the provisions of the Sarbanes-Oxley Act, the Dodd-Frank Act and rules adopted by the SEC and The Nasdaq Global Market, would likely result in increased costs to us as we respond to their requirements, which may adversely affect our operating results and financial condition.

We have identified a material weakness in our internal control over financial reporting in our audit for the fiscal year ended December 31, 2017. If we fail to remediate this weakness or experience material weaknesses in the future or otherwise fail to maintain an effective system of internal controls in the future, we may not be able to accurately report our financial condition or results of operations which may adversely affect investor confidence in us and, as a result, the value of our common stock.

As a result of becoming a public company, we will be required, under Section 404 of the Sarbanes-Oxley Act, to furnish a report by management on, among other things, the effectiveness of our internal control over financial

reporting beginning with our Annual Report on Form 10-K for the year ended December 31, 2019. This assessment will need to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting. A material weakness is a deficiency or combination of deficiencies in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of a company's annual and interim financial statements will not be detected or prevented on a timely basis.

We may further enhance the computer systems processes and related documentation necessary to perform the evaluation needed to comply with Section 404. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion. During the evaluation and testing process, if we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that our internal controls are effective. The effectiveness of our controls and procedures may be limited by a variety of factors, including:

- faulty human judgment and simple errors, omissions or mistakes;
- fraudulent action of an individual or collusion of two or more people;
- inappropriate management override of procedures; and
- the possibility that any enhancements to controls and procedures may still not be adequate to assure timely and accurate financial control.

For example, for the year ended December 31, 2017, we identified a material weakness in our internal control over financial reporting due to a lack of proper segregation of duties within our finance and accounting function. This weakness was due to our inability to implement the appropriate segregation of duties within our historical enterprise resource planning, or ERP, system. Since August 2017, we have made efforts to design manual controls to mitigate the risk. In addition, in December 2017, we implemented a new ERP system. If we are unable to conclude that our internal control over financial reporting is effective or take effective remedial measures to improve our internal control, we could lose investor confidence in the accuracy and completeness of our financial reports, which would likely cause the price of our common stock to decline.

When we cease to be an "emerging growth company" under the federal securities laws, our auditors will be required to express an opinion on the effectiveness of our internal controls. If we are unable to confirm that our internal control over financial reporting is effective, or if our auditors are unable to express an opinion on the effectiveness of our internal controls, we could lose investor confidence in the accuracy and completeness of our financial reports, which would cause the price of our common stock to decline.

If we experience significant disruptions in our information technology systems, our business may be adversely affected.

We depend on our information technology systems for the efficient functioning of our business, including accounting, data storage, compliance, purchasing and inventory management. Our current systems are not fully redundant. While we will attempt to mitigate interruptions, we may experience difficulties in implementing some upgrades which would impact our business operations, or experience difficulties in operating our business during the upgrade, either of which could disrupt our operations, including our ability to timely ship and track product orders, project inventory requirements, manage our supply chain and otherwise adequately service our customers. In the event we experience significant disruptions as a result of the current implementation of our information technology systems, we may not be able to repair our systems in an efficient and timely manner. Accordingly, such events may disrupt or reduce the efficiency of our entire operation and have a material adverse effect on our results of operations and cash flows.

We are increasingly dependent on sophisticated information technology for our infrastructure. Our information systems require an ongoing commitment of significant resources to maintain, protect and enhance existing systems. Failure to maintain or protect our information systems and data integrity effectively could have a materially adverse effect on our business. For example, third parties may attempt to hack into systems and may obtain our proprietary information.

Fluctuations in insurance cost and availability could adversely affect our profitability or our risk management profile.

We hold a number of insurance policies, including product liability insurance, directors' and officers' liability insurance, general liability insurance, property insurance and workers' compensation insurance. If the costs of

maintaining adequate insurance coverage increase significantly in the future, our operating results could be materially adversely affected. Likewise, if any of our current insurance coverage should become unavailable to us or become economically impractical, we would be required to operate our business without indemnity from commercial insurance providers. If we operate our business without insurance, we could be responsible for paying claims or judgments against us that would have otherwise been covered by insurance, which could adversely affect our results of operations or financial condition.

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 any 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 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 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 and we have never entered into or completed an acquisition. We do not know if we will be able to identify suitable acquisitions, complete any such acquisitions on favorable terms or at all, successfully integrate any acquired business, product or technology into our business or retain any key personnel, suppliers or distributors. Our ability to grow through acquisitions successfully 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 integrate any acquired businesses, products or technologies effectively, our business, results of operations and financial condition will be materially adversely affected.

Laws and regulations governing any international operations we may have in the future may preclude us from developing, manufacturing and selling certain products outside of the United States and require us to develop and implement costly compliance programs.

If we expand our operations outside of the United States, we must dedicate additional resources to comply with numerous laws and regulations in each jurisdiction in which we plan to operate. The Foreign Corrupt Practices Act, or FCPA, prohibits any U.S. individual or business from paying, offering, authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with certain accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

Compliance with the FCPA is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the pharmaceutical industry, because, in many countries, hospitals are operated by the government, and doctors and other hospital employees are considered foreign officials. Certain payments to hospitals in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions.

Various laws, regulations and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-U.S. nationals, of information classified for national security purposes, as well as

certain products and technical data relating to those products. If we expand our presence outside of the United States, it will require us to dedicate additional resources to comply with these laws, and these laws may preclude us from developing, manufacturing, or selling certain products and product candidates outside of the United States, which could limit our growth potential and increase our development costs.

The failure to comply with laws governing international business practices may result in substantial civil and criminal penalties and suspension or debarment from government contracting. The Securities and Exchange Commission, or SEC, also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions.

Our employees, independent contractors, consultants, collaborators and contract research organizations may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements, which could cause significant liability for us and harm to our reputation.

We are exposed to the risk that our employees, independent contractors, consultants, collaborators and contract research organizations may engage in fraud or other misconduct, including intentional failures to comply with FDA regulations or similar regulations of comparable non-U.S. regulatory authorities, to provide accurate information to the FDA or comparable non-U.S. regulatory authorities, to comply with manufacturing standards we have established, to comply with federal and state healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable non-U.S. regulatory authorities, to report financial information or data accurately or to disclose unauthorized activities to us. Such misconduct could also involve the improper use or misrepresentation of information obtained in the course of clinical trials, creating fraudulent data in our preclinical studies or clinical trials or illegal misappropriation of product materials, which could result in regulatory sanctions and serious harm to our reputation. 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, standards or regulations. Additionally, we are subject to the risk that a person or government could allege such fraud or other misconduct, even if none occurred. 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 and results of operations, including the imposition of significant fines or other sanctions.

The recently passed comprehensive tax reform bill could adversely affect our business and financial condition.

On December 22, 2017, President Trump signed into law new legislation that significantly revises the Internal Revenue Code of 1986, as amended. The newly enacted federal income tax law, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, limitation of the tax deduction for net interest expense to 30% of adjusted earnings (except for certain small businesses), limitation of the deduction for net operating losses to 80% of current year taxable income and elimination of net operating loss carrybacks, in each case, for losses arising in taxable years beginning after December 31, 2017 (though any such net operating losses may be carried forward indefinitely), and modifying or repealing many business deductions and credits (including reducing the business tax credit for certain clinical testing expenses incurred in the testing of certain drugs for rare diseases or conditions generally referred to as "orphan drugs"). We continue to examine the impact this tax reform legislation may have on our business. The overall impact of the new federal tax law is uncertain and our business and financial condition could be adversely affected. In addition, it is uncertain how various states will respond to the newly enacted federal tax law. The impact of this tax reform on holders of our common stock is also uncertain and could be adverse. We urge our stockholders to consult with their legal and tax advisors with respect to this legislation and the potential tax consequences of investing in or holding our common stock.

Risks Related to Our Common Stock and this Offering

No public market for our common stock currently exists and an active trading market may not develop or be sustained following this offering.

Prior to this initial public offering, there has been no public market for our common stock. Although we intend to apply to list our common stock on The Nasdaq Global Market, an active trading market may not develop following the completion of this offering or, if developed, may not be sustained. The lack of an active market may impair your

ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the fair market value or the trading price of your shares. An inactive market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration. The public offering price for our common stock has been determined by negotiation among us and the underwriters based upon several factors, and the price at which our common stock trades after this offering may decline below the public offering price. You may experience a significant decrease in the value of the common stock you purchase in this offering regardless of our operating performance or prospects.

If you purchase shares of common stock in this offering, you will suffer immediate dilution in the net tangible book value of your investment.

The initial public offering price of our common stock is substantially higher than the net tangible book value per share of our common stock. Therefore, if you purchase shares of our common stock in this offering, you will pay a price per share that substantially exceeds our net tangible book value per share after this offering. Based on the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, you will experience immediate dilution of $ per share, representing the difference between our pro forma as-adjusted net tangible book value per share after giving effect to this offering and the assumed initial public offering price. Purchasers of common stock in this offering will have contributed approximately % of the aggregate price paid by all purchasers of our stock and will own approximately % of our common stock outstanding after this offering, excluding any shares of our common stock that they may have acquired prior to this offering. Furthermore, if the underwriters exercise their option to purchase additional shares or if our previously issued options or warrants to acquire common stock at prices below the initial public offering price are exercised, you will experience further dilution. For additional information on the dilution that you will experience immediately after this offering, see the section titled “Dilution.”

Our stock price may be volatile, and you may not be able to resell shares of our common stock at or above the price you paid.

The initial public offering price for our common stock has been determined through our negotiations with the underwriters and may not be representative of the price that will prevail in the open market following the offering. The trading price of our common stock following completion of this offering may be highly volatile and could be subject to wide fluctuations in response to the risk factors discussed in this section, and others beyond our control, including:

- the timing and results of applications for FDA approval of our Glucagon Rescue Pen and other regulatory actions with respect to our product candidates;
- regulatory actions with respect to our competitors’ products and product candidates;
- the success of existing or new competitive products or technologies;
- results of clinical trials of product candidates of our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations or capital commitments;
- the timing and results of clinical trials of our pipeline product candidates;
- commencement or termination of collaborations for our development programs;
- the results of our efforts to develop additional product candidates or products;
- the level of expenses related to any of our product candidates or clinical development programs;
- failure or discontinuation of any of our development programs;
- the pricing and reimbursement of our Glucagon Rescue Pen, if approved, and of other product candidates that may be approved;
- regulatory or legal developments in the United States and other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- actual or anticipated changes in estimates as to financial results or development timelines;

- announcement or expectation of additional financing efforts;
- sales of our common stock by us, our insiders or other stockholders;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in estimates or recommendations by securities analysts, if any, that cover our stock;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions; and
- the other factors described in this “Risk Factors” section.

In recent years, the stock markets, and particularly the stock of smaller pharmaceutical and biotechnology companies at times have experienced price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of affected companies. Broad market and industry factors may significantly affect the market price of our common stock unrelated to our actual operating performance. These fluctuations may be even more pronounced in the trading market for our common stock shortly following this offering. If the market price of shares of our common stock after this offering does not ever exceed the initial public offering price, you may not realize any return on your investment in us and may lose some or all of your investment.

In addition, in the past, class action litigation has often been instituted against companies whose securities have experienced periods of volatility in market price. Securities litigation brought against us following volatility in our stock price, regardless of the merit or ultimate results of such litigation, could result in substantial costs, which would hurt our financial condition and operating results and divert management’s attention and resources from our business.

Securities analysts may publish inaccurate or unfavorable research or reports about our business or may publish no information at all, which could cause our stock price or trading volume to decline.

If a trading market for our common stock develops, the trading market will be influenced by the research and reports that industry or financial analysts publish about us and our business. We do not control these analysts. As a newly public company, we may be slow to attract research coverage and the analysts who publish information about our common stock will have had relatively little experience with our company, which could affect their ability to accurately forecast our results and could make it more likely that we fail to meet their estimates. In the event we obtain securities or industry analyst coverage, if any of the analysts who cover us provide inaccurate or unfavorable research or issue an adverse opinion regarding our stock price, our stock price could decline. If one or more of these analysts cease coverage of our company or fail to publish reports covering us regularly, we could lose visibility in the market, which in turn could cause our stock price or trading volume to decline.

The concentration of our capital stock ownership with insiders upon the completion of this offering will likely limit your ability to influence corporate matters.

Based upon shares outstanding as of December 31, 2017, we anticipate that our executive officers, directors, current five percent or greater stockholders and affiliated entities will together beneficially own approximately % of our common stock outstanding after this offering, or % if the underwriters exercise their option to purchase additional shares in full. These stockholders may in some instances exercise their influence in ways that you do not believe are in your best interests as a stockholder. Some of these persons or entities may have interests different than yours. For example, because many of these stockholders purchased their shares at prices substantially below the price at which shares are being sold in this offering and have held their shares for a longer period, they may be more interested in selling our company to an acquirer than other investors or they may want us to pursue strategies that deviate from the interests of other stockholders. In particular, these stockholders, acting together, may be able to control our management and affairs and matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions, such as mergers, consolidations or the sale of substantially all of our assets. Consequently, this concentration of ownership could limit your ability to influence corporate matters and may have the effect of delaying or preventing a change of control, including a merger, consolidation or other business combination involving us, or discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control, even if such a change of control would benefit our other stockholders. This significant concentration of share ownership may adversely affect the trading price for our common stock because some investors perceive disadvantages in owning stock in companies with concentrated equity ownership.

We are an "emerging growth company" and the reduced disclosure requirements applicable to "emerging growth companies" may make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and we may take advantage of certain exemptions and relief from various reporting requirements that are applicable to other public companies that are not "emerging growth companies." In particular, while we are an "emerging growth company" (i) we will not be required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act, (ii) we will be exempt from any rules that may be adopted by the Public Company Accounting Oversight Board requiring mandatory audit firm rotations or a supplement to the auditor's report on financial statements, (iii) we will be subject to reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and (iv) we will not be required to hold nonbinding advisory votes on executive compensation or stockholder approval of any golden parachute payments not previously approved.

As a result, our public filings may not be comparable to companies that are not "emerging growth companies". We may remain an "emerging growth company" until the fiscal year-end following the fifth anniversary of the completion of this initial public offering, though we may cease to be an "emerging growth company" earlier under certain circumstances, including (i) if the market value of our common stock that is held by nonaffiliates exceeds $700 million as of any June 30, in which case we would cease to be an "emerging growth company" as of the following January 1, or (ii) if our gross revenue exceeds $1.07 billion in any fiscal year.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies.

Investors may find our common stock less attractive if we rely on the exemptions and relief granted by the JOBS Act. 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 decline and/or become more volatile.

Our management might apply the proceeds of this offering in ways that do not increase the value of your investment.

Although we currently intend to use the net proceeds from this offering in the manner described in the section titled "Use of Proceeds" in this prospectus, our management will have broad discretion as to the use of the net proceeds of this offering and you will be relying on the judgment of our management regarding the application of these proceeds. We might apply the net proceeds of this offering in ways with which you do not agree, or in ways that do not yield a favorable return. You will not have the opportunity to influence our decisions on how to use our net proceeds from this offering or to assess whether proceeds are being used appropriately. If our management applies these proceeds in a manner that does not improve our operating results and yield a significant return, if any, on our investment of these net proceeds, the market price of our common stock could decline. For more information on our management's planned use of proceeds, please read "Use of Proceeds" elsewhere in this prospectus. Pending their use, we may also invest the net proceeds from this offering in a manner that does not produce income or that loses value.

A significant portion of our total outstanding shares of common stock is restricted from immediate resale but may be sold into the market in the near future. This could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. Upon the completion of this offering, we expect that entities affiliated with holders of 5% or more of our common stock prior to this offering and our management team will beneficially own, collectively, approximately % of our outstanding common stock. If one or more of them were to sell a substantial portion of the shares they hold, it could cause our stock price to decline. Based on shares outstanding as of December 31, 2017, upon completion of this offering, we will have approximately outstanding shares of common stock, assuming no exercise of the underwriters' over-allotment option to purchase additional shares. As of the date of this prospectus, approximately shares of common stock will be subject to a 180-day contractual lock-up with the underwriters. The underwriters may, in their sole discretion and without notice, release all or any portion of the shares from these lock-up arrangements, and the lock-up agreements

are subject to certain exceptions. See “Underwriting” for more information. Of the shares subject to a contractual lock-up with the underwriters, approximately shares of common stock also will be subject to a 180-day contractual lock-up with us.

After this offering, holders of an aggregate of approximately shares of our common stock and shares issuable upon exercise of outstanding warrants will have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders.

In addition, as of December 31, 2017, there were shares subject to outstanding options granted under our 2011 Plan that will become eligible for sale in the public market to the extent permitted by any applicable vesting requirements, the lock-up agreements described above and Rules 144 and 701 under the Securities Act of 1933, as amended. We intend to register the shares of common stock issuable upon exercise of these options. We also intend to register all shares of common stock that we may issue under our 2018 Stock Option and Incentive Plan that we intend to adopt in connection with this offering. Once we register these shares, they can be freely sold in the public market upon issuance and once vested, subject to the 180-day lock-up periods under the lock-up agreements described above and in the “Underwriting” section of this prospectus.

We might not be able to utilize a significant portion of our net operating loss carryforwards and research and development tax credit carryforwards.

As of December 31, 2017, we had federal net operating loss carryforwards of $55.8 million, and federal research and orphan drug credit carryforwards of $2.0 million. If not utilized, these carryforwards will expire at various dates between 2025 and 2036. These net operating loss and tax credit carryforwards could expire unused and be unavailable to offset future income tax liabilities. Under the newly enacted federal income tax law, federal net operating losses incurred in 2018 and in future years may be carried forward indefinitely, but the deductibility of such federal net operating losses is limited. It is uncertain how various states will respond to the newly enacted federal tax law. In addition, under Section 382 of the Internal Revenue Code of 1986, as amended, and corresponding provisions of state law, if a corporation undergoes an “ownership change,” which is generally defined as a greater than 50% change, by value, in its equity ownership over a three-year period, the corporation’s ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income may be limited. Our existing net operating losses or credits may be subject to limitations arising from previous ownership changes, and if we undergo an ownership change in connection with or after this offering, our ability to utilize our net operating losses or credits could be further limited by Sections 382 and 383 of the Code. In addition, future changes in our stock ownership, many of which may be outside of our control, could result in an ownership change under Sections 382 and 383 of the Code. Accordingly, we may not be able to utilize a material portion of our net operating losses or credits.

We do not anticipate paying any cash dividends in the foreseeable future, and accordingly, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

After the completion of this offering, we do not anticipate declaring any cash dividends to holders of our common stock in the foreseeable future. In addition, under our Loan Agreement, we are restricted from paying any dividends or making any distributions on account of our capital stock. Our ability to pay cash dividends also may be prohibited by future loan agreements. Consequently, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment. Investors seeking cash dividends should not invest in our common stock.

Provisions in our corporate charter documents and under Delaware law may prevent or frustrate attempts by our stockholders to change our management or hinder efforts to acquire a controlling interest in us.

Provisions in our corporate charter and our bylaws that will become effective upon the closing of this offering may discourage, delay or prevent a merger, acquisition or other change in control of us that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions:

- establish a classified board of directors such that all members of the board are not elected at one time;
- allow the authorized number of our directors to be changed only by resolution of our board of directors;
- limit the manner in which stockholders can remove directors from the board;
- establish advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted on at stockholder meetings;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit actions by our stockholders by written consent;
- limit who may call a special meeting of stockholders;
- authorize our board of directors to issue preferred stock without stockholder approval, which could be used to institute a "poison pill" that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board of directors;
- require the approval of the holders of at least two-thirds of the votes that all our stockholders would be entitled to cast to amend or repeal certain provisions of our charter or bylaws;
- 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 one or more of our directors, officers or employees, any action asserting a claim against us pursuant to the Delaware General Corporation Law, or any action asserting a claim against us that is governed by the internal affairs doctrine.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the General Corporation Law of the State of Delaware, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. This could discourage, delay or prevent someone from acquiring us or merging with us, whether or not it is desired by, or beneficial to, our stockholders. This could also have the effect of discouraging others from making tender offers for our common stock, including transactions that may be in your best interests. These provisions may also prevent changes in our management or limit the price that investors are willing to pay for our stock.

Our bylaws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our bylaws that will become effective upon the completion of this offering provide that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers and employees to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, our certificate of incorporation or our bylaws, or (iv) any action asserting a claim that is governed by the internal affairs doctrine, in each case subject to the Court of Chancery having personal jurisdiction over the indispensable parties named as defendants therein. Any person purchasing or otherwise acquiring any interest in any shares of our capital stock shall be deemed to have notice of and to have consented to this provision of our bylaws. This choice of forum provision 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 employees, which may discourage such lawsuits against us and our directors, officers and employees even though an action, if successful, might benefit our stockholders. Stockholders who do bring a claim in the Court of Chancery could face additional litigation costs in pursuing any such claim, particularly if they do not reside in or near the State of Delaware. The Court of Chancery may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments or results may be more favorable to us than to our stockholders. Alternatively, if a court were to find this provision of our amended and restated certificate of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs, which could have a material adverse effect on our business, financial condition or results of operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the sections entitled “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business,” contains express or implied forward-looking statements that are based on our management’s belief and assumptions and on information currently available to our management. Although we believe that the expectations reflected in these forward-looking statements are reasonable, these statements relate to future events or our future operational or financial performance, and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Forward-looking statements in this prospectus include, but are not limited to, statements about:

- the timing or likelihood of our NDA submission to the FDA for our Glucagon Rescue Pen and its acceptance for filing by the FDA;
- the timing or likelihood of approval by the FDA of our NDA for our Glucagon Rescue Pen;
- our estimates regarding the market opportunities for our product candidates;
- the commercialization, marketing and manufacturing of our product candidates, if approved;
- the pricing and reimbursement of our Glucagon Rescue Pen or any other of our product candidates, if approved;
- the rate and degree of market acceptance and clinical utility of our Glucagon Rescue Pen or any other of our product candidates for which we receive marketing approval;
- the initiation, timing, progress and results of our research and development programs and future preclinical and clinical studies;
- our ability to advance any other product candidates into, and successfully complete, clinical studies and obtain regulatory approval for them;
- our ability to identify additional product candidates;
- the implementation of our strategic plans for our business, product candidates and technology;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and technology;
- our ability to use the proceeds of this offering in ways that increase the value of your investment;
- our expectations related to the use of proceeds from this offering, and estimates of our expenses, future revenues, capital requirements and our needs for additional financing;
- our ability to manufacture, or the ability of third parties to deliver, sufficient quantities of components and drug product for commercialization of our Glucagon Rescue Pen or any other of our product candidates;
- our ability to maintain and establish collaborations;
- our financial performance;
- our ability to effectively manage our anticipated growth;
- developments relating to our competitors and our industry, including the impact of government regulation;
- our ability to remediate the material weakness identified by our independent registered public accounting firm and avoid any findings of material weakness or significant deficiencies in the future; and
- other risks and uncertainties, including those listed under the caption “Risk Factors.”

In some cases, forward-looking statements can be identified by terminology such as “may,” “should,” “expects,” “intends,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “potential,” “continue” or the negative of these terms or other comparable terminology. These statements are only predictions. You should not place undue reliance on forward-looking statements because they involve known and unknown risks, uncertainties and other factors, which are, in some cases, beyond our control and which could materially affect results. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under the section entitled “Risk Factors” and elsewhere in this prospectus. If one or more of these risks or uncertainties occur, or if our underlying assumptions prove to be incorrect, actual events or results may vary significantly from those

implied or projected by the forward-looking statements. No forward-looking statement is a guarantee of future performance. 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, completely and with the understanding that our actual future results may be materially different from any future results expressed or implied by these forward-looking statements.

The forward-looking statements in this prospectus represent our views as of the date of this prospectus. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should therefore not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

This prospectus also contains estimates, projections and other information concerning our industry, our business and the markets for our product candidates. Information that 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. Unless otherwise expressly stated, we obtained this industry, business, market and other data from our own internal estimates and research as well as from reports, research surveys, studies and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources.

USE OF PROCEEDS

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

A $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) the net proceeds to us from this offering by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. An increase (decrease) of 1.0 million shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) our net proceeds from this offering by $ million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We do not expect that a change in the offering price or the number of shares by these amounts would have a material effect on our intended uses of the net proceeds from this offering, although it may impact the amount of time prior to which we may need to seek additional capital.

As of December 31, 2017, we had cash and cash equivalents of $42.0 million. In February 2018, we issued additional shares of Series C preferred stock for net proceeds of $4.4 million and drew down $20.0 million from our Loan Agreement with Oxford Finance, LLC and Silicon Valley Bank. We currently intend to use the net proceeds from this offering, together with our existing cash and cash equivalents, as follows:

- approximately $ million to support the expected commercial launch of our Glucagon Rescue Pen, including investments in sales and marketing, inventory and our commercial and medical affairs infrastructure;
- approximately $ million to advance our other pipeline product candidates; and
- the remainder for working capital and other general corporate purposes.

Based on our current plans, we believe our existing cash and cash equivalents, together with the net proceeds from this offering, will be sufficient to fund our operations and capital expenditure requirements through .

This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. For example, we may use a portion of the net proceeds for the acquisition of businesses or technologies to continue to build our pipeline, our research and development capabilities and our intellectual property position, although we currently have no agreements, commitments or understandings with respect to any such transaction. We cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the amounts that we will actually spend on the uses set forth above. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our research and development, the status of and results from non-clinical studies or clinical trials we may commence in the future, as well as any collaborations that we may enter into with third parties for our product candidates or strategic opportunities that become available to us, and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Pending our use of proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation instruments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain any future earnings to fund the development and expansion of our business, and therefore we do not anticipate paying cash dividends on our common stock in the foreseeable future. Any future determination to pay dividends will be at the discretion of our board of directors and will depend on our results of operations, financial condition, capital requirements, contractual restrictions and other factors deemed relevant by our board of directors. Under our Loan Agreement with Oxford Finance, LLC and Silicon Valley Bank, we are restricted from paying any dividends or making any distributions on account of our capital stock. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Loan Agreement” for a description of the restrictions on our ability to pay dividends.

CAPITALIZATION

The following table sets forth our capitalization as of December 31, 2017:

- on an actual basis;
- on a pro forma basis to reflect (i) the sale and issuance of 707,680 shares of our Series C preferred stock in February 2018 for aggregate net proceeds of $4.4 million, (ii) the drawdown in February 2018 of $20.0 million from our Loan Agreement with Oxford Finance, LLC and Silicon Valley Bank, (iii) the automatic conversion of all outstanding shares of convertible preferred stock into an aggregate of 21,083,391 shares of common stock upon the completion of this offering and (iv) the filing of our amended and restated certificate of incorporation, which will occur upon the closing of this offering;
- on a pro forma as-adjusted basis to give further effect to reflect the sale and issuance by us of shares of our common stock in this offering at an assumed initial public offering price of $ per share (the midpoint of the range listed on the cover page of this prospectus), after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

You should read the information below in conjunction with the financial statements and the related notes thereto and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included elsewhere in this prospectus.

	AS OF DECEMBER 31, 2017		
(In thousands, except share and per share data)	ACTUAL	PRO FORMA	PRO FORMA AS ADJUSTED
		(Unaudited)	
Cash and cash equivalents	$ 42,045	$ 66,448	$
Deferred rent—long-term	$ 90	$ 90	$
Debt, long term	—	20,000	
Convertible preferred stock, $0.0001 par value; 21,950,994 shares authorized and 20,375,711 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma; no shares authorized, issued or outstanding, pro forma as adjusted	97,878	—	
Stockholders’ equity:			
Common stock, $0.0001 par value; 30,450,994 shares authorized, 3,845,600 shares issued and outstanding, actual; shares authorized, 25,245,871 shares issued and outstanding, pro forma; shares authorized, shares issued and outstanding, pro forma as adjusted	1	3	
Preferred stock, $0.0001 par value; no shares authorized, issued and outstanding, actual; shares authorized and no shares issued and outstanding, pro forma and pro forma as adjusted	—	—	
Additional paid-in capital	2,754	105,033	
Accumulated (deficit)	(60,585)	(60,585)	
Total stockholders’ equity (deficit)	(57,830)	44,451	
Total capitalization	$ 40,138	$ 64,541	$

A $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) the pro forma as adjusted amount of cash and cash equivalents, additional paid-in capital, total stockholders’ equity and total capitalization by approximately $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and

commissions and estimated offering expenses payable by us. Similarly, each increase (decrease) of 1.0 million shares in the number of shares offered by us in this offering would increase (decrease) the pro forma as adjusted amount of cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by approximately $ million, assuming the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The table above excludes each of the following:

- 3,208,588 shares of common stock issuable upon exercise of options issued under our 2011 Stock Option/Stock Issuance Plan at a weighted-average exercise price of $0.93 per share;
- 35,500 shares of common stock issuable upon the exercise of warrants to purchase common stock at an exercise price of $3.319 per share as of December 31, 2017, plus 95,686 shares of common stock issuable upon the exercise of warrants to purchase common stock at an exercise price of $6.2705 per share that we issued in February 2018;
- 801,882 shares of common stock reserved for issuance under our 2011 Stock Option/Stock Issuance Plan as of December 31, 2017, plus an additional 600,000 shares of common stock that we reserved for issuance under such plan in February 2018, which shares will no longer be reserved following this offering; and
- shares of common stock to be reserved for future issuance under our 2018 Stock Option and Incentive Plan upon the effectiveness of the registration statement of which this prospectus forms a part.

DILUTION

If you invest in our common stock in this offering, your interest will be diluted immediately to the extent of the difference between the public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock after this offering. As of December 31, 2017, our historical net tangible book value was $(57.8) million, or $(13.90) per share. Our historical net tangible book value represents total tangible assets less total liabilities and convertible preferred stock, all divided by the number of shares of common stock outstanding on December 31, 2017.

Our pro forma net tangible book value as of December 31, 2017 was $44.4 million, or $1.76 per share, after giving effect to (i) the sale and issuance of 707,680 shares of our Series C preferred stock in February 2018 for aggregate net proceeds of $4.4 million, (ii) the drawdown in February 2018 of $20.0 million from our Loan Agreement with Oxford Finance, LLC and Silicon Valley Bank and (iii) the conversion of all outstanding shares of our convertible preferred stock into 21,083,391 shares of our common stock upon the completion of this offering. After giving effect to the sale of shares of common stock offered in this offering at an assumed initial public offering price of $ per share, the midpoint of the range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of December 31, 2017 would have been $ million, or $ per share. This represents an immediate increase in pro forma net tangible book value of $ per share to existing stockholders and an immediate dilution of $ per share to new investors, or approximately % of the assumed initial public offering price of $ per share. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share		$
Historical net tangible book value per share as of December 31, 2017	$(13.90)	
Increase per share attributable to the pro forma adjustments described above	15.66	
Pro forma net tangible book value per share as of December 31, 2017, before giving effect to this offering	1.76	
Increase in pro forma net tangible book value per share attributable to this offering		
Pro forma as adjusted net tangible book value per share after giving effect to this offering		
Dilution in pro forma as adjusted net tangible book value per share to new investors in this offering		$

A $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) the pro forma as adjusted net tangible book value by $ per share and the dilution to investors participating in this offering by $ per share, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated expenses payable by us. Similarly, each increase (decrease) of 1.0 million shares in the number of shares offered by us in this offering would increase (decrease) the pro forma as adjusted net tangible book value by $ per share and the dilution to investors participating in this offering by $ per share, assuming the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated expenses payable by us.

The following table summarizes, on a pro forma as adjusted basis as of December 31, 2017, the differences between the number of shares of common stock purchased from us on an as converted basis, the total cash consideration and the average price per share paid to us by existing stockholders and by new investors purchasing shares in this offering, at the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover of this prospectus before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us:

	SHARES PURCHASED		TOTAL CONSIDERATION		AVERAGE PRICE PER SHARE
	NUMBER	PERCENT	AMOUNT	PERCENT	
Existing stockholders	25,245,871	%	$105,649,915	%	$ 4.18
New investors participating in this offering					
Total		100.0%		100.0%	

A $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) the total consideration paid by investors in this offering by approximately $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase (decrease) of 1.0 million shares in the number of shares offered by us in this offering would increase (decrease) the total consideration paid by investors in this offering by approximately $ million, assuming the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

If the underwriters exercise their option to purchase additional shares of our common stock in full, our existing stockholders would own % and our new investors would own % of the total number of shares of our common stock outstanding after this offering.

The foregoing tables and calculations exclude:

- 3,208,588 shares of common stock issuable upon exercise of options issued under our 2011 Stock Option/Stock Issuance Plan at a weighted-average exercise price of $0.93 per share;
- 35,500 shares of common stock issuable upon the exercise of warrants to purchase common stock at an exercise price of $3.319 per share as of December 31, 2017, plus 95,686 shares of common stock issuable upon the exercise of warrants to purchase common stock at an exercise price of $6.2705 per share that we issued in February 2018;
- 801,882 shares of common stock reserved for issuance under our 2011 Stock Option/Stock Issuance Plan as of December 31, 2017, plus an additional 600,000 shares of common stock that we reserved for issuance under such plan in February 2018, which shares will no longer be reserved following this offering; and
- shares of common stock to be reserved for future issuance under our 2018 Stock Option and Incentive Plan upon the effectiveness of the registration statement of which this prospectus forms a part.

To the extent that outstanding options are exercised or shares are issued under our equity incentive plans, you will experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities may result in further dilution to our stockholders.

SELECTED FINANCIAL INFORMATION

The statements of operations data for the years ended December 31, 2016 and 2017 and the balance sheet data as of December 31, 2016 and 2017 are derived from our audited financial statements included elsewhere in this prospectus. You should read this data together with our financial statements and related notes included elsewhere in this prospectus and the information under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operations." Our historical results are not necessarily indicative of the results to be expected in the future for a full year or any interim period.

	YEARS ENDED DECEMBER 31,	
	2016	2017
	(in thousands, except share and per share data)	
Statements of Operations Data:		
Grant income	$ 1,022	$ 1,540
Service revenue	53	16
Cost of revenue	8	4
Gross profit	1,067	1,552
Operating expenses:		
Research and development	10,238	20,166
General and administrative	4,060	8,015
Expense from operations	14,298	28,181
Loss from operations	(13,231)	(26,629)
Other income (expense):		
Interest income	5	124
Interest expense	(2)	(2)
Change in fair value of warrants	24	(46)
Other expense	(5)	(1)
Total other income	22	75
Net loss	$ (13,209)	$ (26,554)
Net loss per share—basic and diluted(1)	$ (4.03)	$ (7.35)
Weighted average number of shares outstanding, basic and diluted (1)	3,281,564	3,612,512
Pro forma net loss per share (unaudited) (1):		
Basic and diluted		$ (1.31)
Pro forma weighted average shares outstanding (unaudited) (1):		
Basic and diluted		20,231,131

	DECEMBER 31,	
	2016	2017
	(in thousands)	
Balance Sheet Data:		
Cash and cash equivalents	$ 32,269	$ 42,045
Working capital(2)	30,647	39,193
Total assets	33,533	44,998
Deferred rent—long-term	90	90
Convertible preferred stock	62,898	97,878
Accumulated deficit	(34,031)	(60,585)
Total stockholder's deficit	(31,934)	(57,830)

(1) See Note 2 to our audited financial statements included elsewhere in this prospectus for an explanation of the calculations of our basic and diluted net loss per share, basic and diluted pro forma net loss per share and the shares used in computing basic and diluted net loss per share and basic and diluted pro forma net loss per share.

(2) We define working capital as current assets less current liabilities.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our financial statements and related notes included elsewhere in this prospectus. In addition to financial information, the following discussion contains forward-looking statements that reflect our plans, estimates, and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this prospectus, particularly in "Risk Factors."

Overview

We are a specialty pharmaceutical company leveraging our novel non-aqueous formulation technology platforms, XeriSol and XeriJect, to develop and commercialize ready-to-use injectable and infusible drug formulations. We have developed a ready-to-use, room-temperature stable liquid glucagon formulation that, unlike any currently available products, can be administered without any preparation or reconstitution. Our lead product candidate, Glucagon Rescue Pen, delivers ready-to-use glucagon via a commercially-available auto-injector for the treatment of severe hypoglycemia, a potentially life-threatening condition, in people with diabetes. We have completed two Phase 3 clinical trials for our Glucagon Rescue Pen and expect to submit a New Drug Application, or NDA, to the U.S. Food and Drug Administration, or the FDA, in the second quarter of 2018. If our NDA is submitted and approved in our expected timeframe, we believe we will have the first ready-to-use, room-temperature stable liquid glucagon formulation that can be administered without any preparation or reconstitution. We are also applying our novel room-temperature stable liquid glucagon formulation for the management of other conditions associated with hypoglycemia with significant unmet medical need. In addition, we are applying our technology platforms to convert other commercially-available drugs into ready-to-use, room-temperature stable liquid formulations to address the needs in multiple therapeutic areas and conditions, including epilepsy and diabetes.

We have begun building out our commercial organization, including individuals in operations and marketing, as well as our medical affairs organization. Outside of the United States, we plan to pursue development and commercialization partnerships. We currently contract with third parties for the manufacture, assembly, testing, packaging, storage and distribution of our products.

Since our inception in 2005, we have devoted substantially all our resources to research and development initiatives, undertaking preclinical studies of our product candidates, conducting clinical trials of our most advanced product candidates, organizing and staffing our company and raising capital. We do not have any products approved for sale and have not generated any revenue from product sales. We have funded our operations to date primarily with proceeds from the sale of preferred stock, bank financings and grant awards received from the National Institute of Health, or NIH, and other philanthropic organizations. As of December 31, 2017, we had received cash proceeds of $100.5 million from sales of our preferred stock, and $8.0 million from grant awards from the NIH and other philanthropic organizations. In the first quarter of 2018, we issued additional shares of Series C preferred stock for cash proceeds of $4.4 million and closed on a $45.0 million Loan Agreement of which $20.0 million was drawn in February 2018. An additional $15.0 million will be available beginning upon the submission of a NDA for our Glucagon Rescue Pen until the earlier of September 30, 2018 or the 30th day following NDA submission. The remaining $10.0 million will be available beginning upon approval of our Glucagon Rescue Pen NDA by the FDA until the earlier of September 30, 2019 or the 30th day following NDA approval by the FDA.

For the years ended December 31, 2017 and 2016, our net loss was $26.6 million and $13.2 million, respectively. We have not been profitable since inception, and as of December 31, 2017, our accumulated deficit was $60.6 million. We expect to continue to incur net losses for the foreseeable future as we prepare for a potential commercial launch of our Glucagon Rescue Pen, including hiring our sales force. We also expect to incur significant expenses and increasing operating losses in the near term. We expect our expenses will increase substantially in connection with our ongoing activities, as we:

- continue our research and development efforts;

- seek regulatory approval for new product candidates and product enhancements;
- build commercial infrastructure to support sales and marketing for our product candidates;
- hire and retain additional personnel and add operational, financial and management information systems; and
- operate as a public company.

We do not expect to generate significant product revenue unless or until we obtain marketing approval of, and begin to sell, our product candidates. We expect to continue to seek private or public equity and debt financing to meet our capital requirements. There can be no assurance that such funding may be available to us on acceptable terms, or at all, or that we will be able to commercialize our product candidates. In addition, we may not be profitable even if we commercialize any of our product candidates.

Components of our Results of Operations

Revenue

Grant income is derived from grants that we received from the NIH and other philanthropic organizations to help bring necessary drugs to the market place where there are currently unmet needs. As of December 31, 2017, we are eligible to receive $2.7 million in grants from the NIH and other philanthropic organizations that will help fund our ongoing clinical development for other chronic glucagon programs as well as our auto-injectable diazepam program for treatment of seizures. These awards will be recognized as grant income when we have performed the services as outlined in the grant agreements.

Service revenue is derived from the feasibility studies we perform for third parties to determine whether our XeriSol and XeriJect technologies may enhance such party's drug offerings.

Cost of revenue includes employees' time, materials and overhead applied to the feasibility studies.

Research and Development

Research and development expense consists of expenses incurred in connection with the discovery and development of our XerisSol and XerisJect product candidates. We expense research and development costs as incurred. Research and development costs that are paid in advance of performance are capitalized until services are provided or goods are delivered. Research and development expenses include:

- expenses incurred under agreements with contract research organizations, or CROs, as well as investigative sites and consultants that conduct our preclinical studies and clinical trials;
- manufacturing scale-up expenses and the cost of acquiring and manufacturing preclinical and clinical trial materials and commercial materials, including manufacturing validation batches;
- outsourced professional scientific development services;
- employee-related expenses, which include salaries, benefits and stock-based compensation;
- expenses relating to regulatory activities, including filing fees paid to regulatory agencies;
- laboratory materials and supplies used to support our research activities; and
- allocated expenses for utilities and other facility-related costs.

Research and development activities are central to our business model. We expect research and development expenses to increase in 2018 as we continue to progress our product candidates through clinical trials. In 2018, we expect to complete a Phase 3b clinical trial for our Glucagon Rescue Pen, complete Phase 2a and Phase 2b clinical trials for PBH, continue a Phase 2 clinical trial for CHI, complete a Phase 2a clinical trial for HAAF, initiate a Phase 2b clinical trial for exercise induced hypoglycemia, or EIH, complete a Phase 1 clinical trial for Diazepam and complete a pre-clinical study for Pramlintide-Insulin. Our research and development expenses may vary significantly over time due to uncertainties relating to the terms and timing of regulatory approvals and unexpected results of our clinical trials. We expect our research and development expenses to increase significantly over the next several years as we increase personnel costs, including stock-based compensation, conduct clinical trials and prepare regulatory filings for our product candidates.

General and Administrative

General and administrative expenses consist principally of salaries, stock-based compensation and related costs for personnel in executive, marketing and administrative positions, facility costs not otherwise included in research and development, marketing expenses, professional fees for legal, audit and accounting services, fees paid for market research and trade shows and travel cost.

We anticipate that, following the completion of this offering, we will incur greater expenses as a public reporting company, including increased payroll, legal and compliance, accounting, insurance and investor relations costs. We also expect selling and marketing costs to increase significantly as we prepare for the expected commercial launch of our Glucagon Rescue Pen, if approved, including the build out of a sales force in 2019.

Interest Expense and Other Income

Other income consists primarily of interest income earned on short term deposits and the change in the fair market value of our preferred stock warrants.

In February 2018, we entered into a $45.0 million Loan Agreement, of which we drew down $20.0 million upon closing, and we expect to draw down another $15.0 million in 2018, assuming submission of our NDA for the Glucagon Rescue Pen. As a result of those borrowings, we expect interest expense to increase beginning in the first quarter of 2018.

Income Tax

We have incurred operating losses since inception and therefore do not have any taxable income. We have $55.8 million in net operating loss carryforwards and $2.0 million in federal research credits that begin to expire in 2025. Additionally, we have a California Competes Tax Credit Allocation agreement and Illinois EDGE agreement that will reduce future taxable income in those respective states by up to $1.5 million and $1.4 million, respectively.

Results of Operations

The following table summarizes our results of operations for the years ended December 31, 2016 and 2017:

	YEARS ENDED DECEMBER 31,		INCREASE (DECREASE)
	2016	2017	
	(in thousands)		
Grant income	$ 1,022	$ 1,540	$ 518
Service revenue	53	16	(37)
Cost of revenue	8	4	(4)
Gross profit	1,067	1,552	485
Operating expenses:			
Research and development	10,238	20,166	9,928
General and administrative	4,060	8,015	3,955
Expense from operations	14,298	28,181	13,883
Loss from operations	(13,231)	(26,629)	(13,398)
Other income (expense):			
Interest income	5	124	119
Interest expense	(2)	(2)	—
Change in fair value of warrants	24	(46)	(70)
Other expense	(5)	(1)	4
Total other income	22	75	53
Net loss	$(13,209)	$(26,554)	$ (13,345)

Gross Profit

Gross profit increased by $485,000 for the year ended December 31, 2017 when compared to the year ended December 31, 2016, primarily driven by an increase in grant income by $518,000. This increase was primarily

driven by several clinical trials and pre-clinical studies for our CHI, PBH and auto-injector for auto-injectable diazepam formulation for treatment of seizures that were covered by grants awarded to us.

Research and Development

The following table summarizes our research and development expenses by functional area for the years ended December 31, 2016 and 2017:

	FOR THE YEARS ENDED DECEMBER 31,	
	2016	2017
	(in thousands)	
Clinical and pre-clinical	$ 2,128	$ 9,233
Product development	5,406	6,654
Compensation and related personnel costs	2,626	4,217
Stock-based compensation	78	62
Total research and development expenses	$ 10,238	$ 20,166

The following table summarizes our research and development expenses by program for the years ended December 31, 2016 and 2017:

	FOR THE YEARS ENDED DECEMBER 31,	
	2016	2017
	(in thousands)	
Glucagon Rescue Pen	$ 4,687	$ 10,339
Other ready to use glucagon products	2,088	4,013
Pipeline product candidates	257	60
Overhead (personnel, facilities and other expenses)	3,206	5,754
Total research and development expenses	$ 10,238	$ 20,166

Research and development expense increased $9.9 million for the year ended December 31, 2017 when compared to the year ended December 31, 2016. This increase was primarily driven by expenses associated with clinical trials, product development and an increase in headcount. In 2017, we started and completed two Phase 3 clinical trials for our Glucagon Rescue Pen and started Phase 2 clinical trials for PBH and CHI. We produced two registration batches and one engineering batch for the Glucagon Rescue Pen in 2017 that will be used to support our planned NDA submission in the second quarter of 2018. We also produced clinical supplies for the PBH and CHI programs as well as pre-clinical material for our chronic glucagon and Diazepam programs. We increased headcount in 2017 from 10 to 24 employees to support our current research and development activities.

General and Administrative

General and administrative costs increased $4.0 million for the year ended December 31, 2017 when compared to the year ended December 31, 2016. This increase was primarily driven by increased expenses associated with an increase in headcount and marketing and market research expenses. In 2017, we increased our headcount from three to 17, including the addition of marketing, market research and medical affairs departments, and as a result compensation and related benefit expenses increased $3.4 million. Marketing and market research expenses increased $0.5 million in 2017 as we performed extensive market research for our existing product candidates as well as evaluated several new potential product candidates.

Other Income

Other income increased $53,000 to $75,000 for the year ended December 31, 2017 as a result of the interest income earned on our cash and cash equivalents. This increase was partially offset by the change in the fair market value of our warrants. The change in fair value of warrant liability represents non-cash (expense) income and is driven by the increase in the fair value of the preferred stock that it converts into.

Liquidity and Capital Resources

Our primary uses of cash are to fund product development costs, operating expenses and working capital requirements. Historically, we have funded our operations primarily through private placements of convertible preferred stock, bank financings and grants awarded from the NIH and other philanthropic organizations. As of December 31, 2017, we have $2.7 million in awarded unused grants that can be utilized to offset program costs for our PBH, CHI and chronic glucagon programs as well as our auto-injectable diazepam program for treatment of seizures, in accordance with the grant agreements.

Capital Resources and Funding Requirements

We have incurred operating losses since inception and we have an accumulated deficit of $60.6 million at December 31, 2017. We believe that our cash and cash equivalents as of December 31, 2017, together with the proceeds of the sale of Series C preferred stock in February of 2018, the proceeds from the Loan Agreement that closed in February 2018 and the proceeds from this offering will enable us to fund our operating expenses through . We expect to incur substantial additional expenditures in the near term to support our ongoing activities and the expected commercial launch of our Glucagon Rescue Pen. Additionally, we expect to incur additional costs as a result of operating as a public company. We expect to continue to incur net losses for the next several years and we are highly dependent on our ability to find additional sources of funding in the form of debt or equity financing and grant awards to fund our operations. Our ability to fund our product development, clinical operations, including completion of our planned Phase 2 and Phase 3 clinical trials and commercialization of our product candidates will depend on the amount and timing of cash received from planned financing transactions and grant awards. Our future capital requirements will depend on many factors, including:

- the costs, timing and outcome of regulatory review of our Glucagon Rescue Pen;
- the costs, timing and outcomes of clinical trials and regulatory reviews associated with our product candidates;
- the costs of commercialization activities, including product marketing, sales and distribution;
- the costs of preparing, filing and prosecuting patent applications and maintaining, enforcing and defending intellectual property-related claims;
- the emergence of competing technologies and products and other adverse marketing developments;
- the effect on our product development activities of actions taken by the FDA or other regulatory authorities;
- our degree of success in commercializing Glucagon Rescue Pen, if approved; and
- the number and types of future products we develop and commercialize.

Until we obtain regulatory approval to market our product candidates, if ever, we cannot generate revenues from sales of our products. Even if we are able to sell our products, we may not generate a sufficient amount of product revenues to finance our cash requirements. Accordingly, we may need to obtain additional financing in the future which may include public or private debt and equity financings. There can be no assurance that such funding may be available to us on acceptable terms, or at all, or that we will be able to successfully commercialize our product candidates. The issuance of equity securities may result in dilution to stockholders. If we raise additional funds through the issuance of debt securities, these securities may have rights, preferences and privileges senior to those of our common stock and the terms of the debt securities could impose significant restrictions on our operations. The failure to raise funds as and when needed could have a negative impact on our financial condition and ability to pursue our business strategies. If additional funding is not secured when required, the Company may need to delay or curtail its operations until such funding is received, which would have a material adverse impact on our business prospects and results of operations.

Series C Convertible Preferred Stock

In 2017, we sold 5,657,514 shares of our Series C preferred stock for proceeds of $35.5 million. In February 2018, we sold an additional 707,680 shares of Series C preferred stock for proceeds of $4.4 million.

Loan Agreement

In February 2018, we entered into a Loan and Security Agreement, which we refer to as the Loan Agreement, with Oxford Finance LLC and Silicon Valley Bank, which we collectively refer to as our Lenders, providing a senior secured loan facility of up to an aggregate principal amount of $45.0 million, comprised of a $20.0 million

drawdown in February 2018, and an additional $25.0 million which can be borrowed in two additional tranches. The second tranche is $15.0 million and is available beginning upon our submission of our NDA for our Glucagon Rescue Pen until the earlier of September 30, 2018 or the 30th day following such NDA submission. The third tranche is $10.0 million and is available beginning upon approval of our Glucagon Rescue Pen NDA by the FDA until the earlier of September 30, 2019 or the 30th day following NDA approval by the FDA.

The interest rate under the Loan Agreement is the thirty-day U.S. LIBOR rate plus 6.75%. Payments on the Loan Agreement are interest only for the first 24 months, which can be extended by an additional twelve months if the third tranche is drawn. The total term of the loan is 59 months and the principal payments will begin in either 36 or 24 months, contingent on the third tranche being drawn.

Pursuant to the Loan Agreement, we provided a first priority security interest in all existing and after-acquired assets, excluding intellectual property and certain other assets, owned by us. Our Loan Agreement contains a negative pledge on intellectual property owned by us.

We also issued warrants to the Lenders to purchase our Series C preferred stock at an exercise price of $6.2705. The number of warrants issued to Lenders is equal to the total principal of each funded tranche multiplied by 3.0%, which is then divided by $6.2705. As of March 1, 2018, a total of 95,686 warrants have been issued in connection with the Loan Agreement.

The Loan Agreement allows us to voluntarily prepay the outstanding amounts thereunder, but not less than $2.0 million of the outstanding principal at any time. A prepayment fee of 1.5% would be assessed on the prepaid principal through the interest-only period. A final payment fee of 6.5% multiplied by the original principal amount of each tranche drawn is due upon the earlier to occur of the maturity date of the Loan Agreement, the acceleration of the Loan Agreement or prepayment of such borrowings. The Loan Agreement includes a non-utilization fee of 2.0% multiplied by the principal amount of tranche three payable to Lenders in October 2019, if we elect not to draw the third tranche.

The Loan Agreement also contains customary indemnification obligations and customary events of default, including, among other things, our failure to fulfill certain of our obligations under the Loan Agreement and the occurrence of a material adverse change in our business, operations or condition, a material impairment of the prospect of repayment of any portion of the loan, or a material impairment in the perfection or priority of the Lenders' lien in the collateral or in the value of such collateral. In the event of default by us under the Loan Agreement, the Lenders would be entitled to exercise their remedies thereunder, including the right to accelerate the debt, upon which we may be required to repay all amounts then outstanding under the Loan Agreement, which could harm our financial condition.

The Loan Agreement includes certain restrictions on, among other things, our ability to incur additional indebtedness, change the name or location of our business, merge with or acquire other entities, pay dividends or make other distributions to holders of our capital stock, make certain investments, engage in transactions with affiliates, create liens, open new deposit accounts, sell assets or pay subordinated debt.

Cash Flows

	FOR THE YEARS ENDED DECEMBER 31,	
	2016	2017
	(in thousands)	
Net cash used in operating activities	$(16,087)	$(24,663)
Net cash used in investing activities	(35)	(700)
Net cash provided by financing activities	3,904	35,139
Increase (decrease) in cash and cash equivalents	$(12,218)	$ 9,776

Net cash used in operating activities for the year ended December 31, 2017 was $24.7 million, consisting primarily of a net loss of $26.6 million offset by non-cash charges of $0.8 million and an increase in net operating assets and

liabilities of $1.1 million. Non-cash charges were primarily for stock compensation expense and depreciation of fixed assets. The increase in net operating assets and liabilities was primarily related to an increase in accrued expenses and accounts payable related to employee costs, clinical and research and development expenses partially offset by an increase in accounts receivable. Net cash used in operating activities for the year ended December 31, 2016 was $16.1 million, consisting primarily of a net loss of $13.2 million offset by non-cash charges of $0.7 million and a decrease in net operating assets and liabilities of $3.6 million. Non-cash charges were primarily for stock compensation expense and depreciation of fixed assets. The decrease in net operating assets and liabilities was primarily related to the payment of accrued expenses and accounts payable related to employee costs, clinical and research and development expenses.

Net cash used in investing activities for the year ended December 31, 2017 was $0.7 million, consisting of purchases of additional research laboratory equipment to facilitate our increased research and development activities. In 2016 we purchased $35,000 of computer and related hardware equipment used in our research and development activities and furniture for the Austin office. We will continue to incur capital expenditures in 2018.

Net cash provided by financing activities for the year ended December 31, 2017 was $35.1 million due primarily to the sale of $35.0 million of our Series C Preferred Stock. Net cash provided in financing activities for the year ended December 31, 2016 was $3.9 million due primarily to the sale of $4.0 million of our Series C Preferred Stock.

Contractual Obligations and Commitments

As of December 31, 2017, we were obligated to pay the following amounts for our operating leases:

	TOTAL	LESS THAN 1 YEAR	1-3 YEARS	3-5 YEARS	MORE THAN 5 YEARS
			(in thousands)		
Operating leases	$5,395	$ 730	$ 1,693	$ 2,271	$ 701

We enter into contracts in the normal course of business with clinical trial sites, manufacturing organizations and with vendors for preclinical studies, research supplies and other services and products for operating purposes. These contracts generally provide for termination after a notice period, and, therefore, are cancellable contracts and not included in the table above.

As of December 31, 2017, we have received $0.8 million out of an expected $0.9 million in grant proceeds for the development of a stable liquid glucagon for use in an artificial pancreas. Under the terms of the agreement, we will be required to pay up to four times the award received upon commercialization of glucagon for use in the artificial pancreas. If we undergo a change in control, then we will be required to pay a mid-single digit percentage of the gross proceeds, capped at four times the award amount less any amounts already paid. Additionally, if sales of glucagon for use in the artificial pancreas exceed $750 million in the first five years after the first commercial sale, then we would be required to make an additional payment equal to four times the award amount.

As of December 31, 2017, we received $0.9 million in grant proceeds to help fund our EIH program. Under terms of this agreement, we will be required to pay up to two times the award amount upon the commercialization of an EIH product. These amounts are a low double-digit percentage of annual gross sales of an EIH product, capped at $0.5 million annually. If we undergo a change in control, then we will pay a mid-single digit percentage of the consideration capped at two times the award amount less any amounts already paid. Additionally, if sales exceed $1 billion, we will be required to pay an additional amount equal to two times the award amount.

As of December 31, 2017, we received $1.0 million in grant proceeds to help fund our chronic glucagon programs. Under terms of this agreement we will be required to pay up to two times the award amount upon the commercialization of any chronic glucagon program. These amounts are a low double-digit percentage of annual gross sales of all chronic glucagon programs, capped at $0.5 million annually. If we undergo a change in control, then we will pay a mid-single digit percentage of the consideration capped at two times the award amount less any amounts already paid. Additionally, for each chronic glucagon program where sales exceed $500 million, we will be required to pay an additional amount equal to two times the award amount.

The amount we may have to repay under the grant agreements are contingent upon future events and therefore not included in the table above.

Off-Balance Sheet Arrangements:

As of December 31, 2017, we had an unused letter of credit for $58,000 that is used to secure the San Diego, California lease. In the first quarter of 2018 we entered into another letter of credit for $85,000 to secure a lease in Chicago, Illinois.

Internal Controls

Our internal policies and procedures relating to control over financial reporting are designed to provide reasonable assurance as to the reliability of our financial reporting. In the year ended December 31, 2017, we identified a material weakness in our internal control over financial reporting due to a lack in the proper segregation of duties within our finance and accounting function, as one individual had control over two or more phases of a transaction or operation. This weakness was due to our inability to implement the appropriate segregation of duties within our historical enterprise resource planning system. Since August 2017, we have made efforts to design manual controls to mitigate the risk. In addition, in December 2017, we implemented a new enterprise resource planning system that allowed for greater segregation of duties.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risks related to changes in interest rates.

Interest Rate Risk

Cash and Cash Equivalents—We are exposed to the risk of interest rate fluctuations on the interest income earned on our cash and cash equivalents. A hypothetical 100 basis point movement in interest rates applicable to our cash and cash equivalents outstanding at December 31, 2017 would increase interest income by approximately $0.4 million on an annual basis. No significant decrease in interest income would be expected as our cash balances are earning interest at rates of less than approximately 100 basis points.

Loan Agreement—Our interest rate risk relates primarily to U.S. dollar LIBOR-indexed borrowings. Based on our outstanding borrowings at , 2018, a one-percentage point increase in interest rates would affect interest expense on the debt by $0.2 million on an annualized basis. A one-percentage point decrease in interest rates would affect interest expense on the debt by $0.2 million on an annualized basis.

CRITICAL ACCOUNTING POLICIES AND THE USE OF ESTIMATES

We have based our management's discussion and analysis of our financial condition and results of operations on our financial statements that have been prepared in accordance with generally accepted accounting principles, or GAAP, in the United States. The preparation of these financial statements requires us to make estimates that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements as well as the reported revenues and expenses during the reporting periods. On an ongoing basis, we evaluate our estimates and judgments, including those related to clinical trial expenses and stock-based compensation. We base our estimates on historical experience and on various other factors we believe to be appropriate under the circumstances. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully discussed in Note 2 to our audited financial statements included in this prospectus, we believe that the following accounting policies are critical to the process of making significant judgments and estimates in the preparation of our financial statements. We have reviewed these critical accounting policies and estimates with the audit committee of our board of directors.

Research and development costs

Research and development costs are expensed as incurred. Research and development costs include salaries and personnel-related costs, consulting fees, fees paid for contract research services, laboratory equipment and facilities costs, and other external costs.

Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized. The capitalized amounts are expensed as the related goods are used or the services are performed.

When preparing our financial statements, we are required to estimate our accrued clinical expenses. This process involves reviewing open contracts and communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of actual cost. Payments under some of the contracts we have with parties depend on factors, such as successful enrollment of certain numbers of patients, site initiation and the completion of clinical trial milestones. When accruing clinical expenses, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If possible, we obtain information regarding unbilled services directly from our service providers. However, we may be required to estimate the cost of these services based only on information available to us. If we underestimate or overestimate the cost associated with a trial or service at a given point in time, adjustments to research and development expenses may be necessary in future periods. Historically, our estimated accrued clinical expenses have approximated actual expense incurred.

Stock based compensation

The following table summarizes the reporting of total stock-based compensation expense resulting from employee stock options and restricted stock awards:

	YEARS ENDED DECEMBER 31,	
	2016	2017
	(in thousands)	
Research and development	$ 78	$ 62
General and administrative	462	437
Total stock based compensation	$ 540	$ 499

We account for our stock-based compensation awards in accordance with ASC Topic 718, *Compensation—Stock Compensation*, or ASC 718. ASC 718 requires all stock-based payments to employees, including grants of employee stock options, to be recognized in the statements of operations based on their grant date fair values. We estimate the grant date fair value of each option award using the Black-Scholes option-pricing model. We recognize stock-based compensation expense, net of estimated forfeitures, equal to the grant date fair value of stock options on a straight-line basis over the requisite service period.

Estimating the fair value of options requires the input of subjective assumptions, including the estimated fair value of our common stock, the expected life of the option, stock price volatility, the risk-free interest rate and expected dividends. The assumptions used in our Black-Scholes option-pricing model represent management's best estimates and involve a number of variables, uncertainties and assumptions and the application of management's judgment, as they are inherently subjective. If any assumptions change, our stock-based compensation expense could be materially different in the future.

These assumptions used in our Black-Scholes option-pricing model are estimated as follows:

- *Expected Term.* We do not believe we are able to rely on our historical exercise and post-vesting termination activity to provide accurate data for estimating the expected term for use in determining the fair value-based measurement of our options. Therefore, we have opted to use the "simplified method" for estimating the expected term of options, which is the average of the weighted-average vesting period and contractual term of the option.
- *Expected Volatility.* Since there has been no public market for our common stock and lack of company specific historical volatility, we have determined the share price volatility for options granted based on an

analysis of the volatility of a peer group of publicly traded companies. In evaluating similarity, we consider factors such as stage of development, risk profile, enterprise value and position within the industry.

- *Risk-Free Interest Rate.* The risk-free interest rate is based on the U.S. Treasury yield in effect at the time of the grant for zero-coupon U.S. Treasury notes with remaining terms similar to the expected term of the options.
- *Expected Dividends.* The expected dividend yield is 0% because we have not historically paid, and do not expect for the foreseeable future to pay, a dividend on our common stock.
- *Fair value of common stock.* As there has been no public market for our common stock to date, the estimated fair value of our common stock has been determined by our board of directors as of the date of each option grant, with input from management, considering our most recently available third-party valuations of common stock. These third-party valuations were performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*.

Prior to December 31, 2017 our valuations were performed by a third-party valuation company using a discounted cash flow, or DCF, analysis. This method was chosen based on our sources of historical capital and potential future capital needs. In the fourth quarter of 2017, we went from a DCF valuation technique to a hybrid method, which uses market approaches to estimate our enterprise value. The hybrid method is a probability-weighted expected return method, or PWERM, where the equity value in one or more of the scenarios are calculated using an option-pricing method, or OPM. The OPM treats common stock and preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. The PWERM is a scenario-based methodology that estimates the fair value of common stock based upon an analysis of future values for the company, assuming various outcomes. The common stock value is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as well as the rights of each class of stock. The future value of the common stock under each outcome is discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common stock. The assumptions underlying these valuations represent management's best estimates, which involve inherent uncertainties and the application of management judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our stock-based compensation expense could be materially different.

For stock awards after the completion of this offering, our board of directors intends to determine the fair value of each share of underlying common stock based on the closing price of our common stock as reported on the date of grant.

The intrinsic value of all outstanding options as of the date of this prospectus was $ million based on the estimated fair value of our common stock of $ per share, which is the midpoint of the price range set forth on the cover of this prospectus for this offering.

If factors change and we employ different assumptions, stock-based compensation expense may differ significantly from what we have recorded in the past. If there are any modifications or cancellations of the underlying unvested securities, we may be required to accelerate, increase or cancel any remaining unearned stock-based compensation expense. To the extent that our assumptions are incorrect, the amount of stock-based compensation recorded will change.

Income Taxes

Income taxes are recorded in accordance with ASC 740, *Accounting for Income Taxes* ("ASC 740"), which provides for deferred taxes using an asset and liability approach. We recognize deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. We determine our deferred tax assets and liabilities based on differences between financial reporting and tax bases of assets and liabilities, which are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. Valuation allowances are provided if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

We account for uncertain tax positions in accordance with the provisions of ASC 740. When uncertain tax positions exist, we recognize the tax benefit of tax positions to the extent that the benefit will more likely than not be realized. The determination as to whether the tax benefit will more likely than not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances. As of December 31, 2017, we did not have any significant uncertain tax positions.

In general, under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its NOLs to offset future taxable income. We have not completed a study to assess whether an ownership change has occurred in 2017. Our existing NOLs may be subject to limitations arising from previous ownership changes, and if we undergo an ownership change in connection with or after this offering, our ability to utilize NOLs could be further limited by Section 382 of the Code. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Code. Our NOLs are also subject to international regulations, which could restrict our ability to utilize our NOLs. Furthermore, our ability to utilize NOLs of companies that we may acquire in the future may be subject to limitations. There is also a risk that due to regulatory changes, such as suspensions on the use of NOLs, or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to offset future income tax liabilities.

Recent accounting pronouncements

See Note 2 to our audited financial statements beginning on page F-1 of this prospectus for a description of recent accounting pronouncements applicable to our financial statements.

JOBS ACT ACCOUNTING ELECTION

In April 2012, the Jumpstart Our Business Startups Act of 2012, or JOBS Act, was enacted. Section 107 of the JOBS Act provides that an emerging growth company can take advantage of an extended transition period 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 take advantage of such extended transition period.

BUSINESS

Overview

We are a specialty pharmaceutical company leveraging our novel non-aqueous formulation technology platforms, XeriSol and XeriJect, to develop and commercialize ready-to-use injectable and infusible drug formulations. We have developed a ready-to-use, room-temperature stable liquid glucagon formulation that, unlike any currently available products, can be administered without any preparation or reconstitution. Our lead product candidate, Glucagon Rescue Pen, delivers ready-to-use glucagon via a commercially-available auto-injector for the treatment of severe hypoglycemia, a potentially life-threatening condition, in people with diabetes. We have completed two Phase 3 clinical trials for our Glucagon Rescue Pen and expect to submit a New Drug Application, or NDA, to the U.S. Food and Drug Administration, or the FDA, in the second quarter of 2018. If our NDA is submitted and approved in our expected timeframe, we believe we will have the first ready-to-use, room-temperature stable liquid glucagon formulation that can be administered without any preparation or reconstitution. We are also applying our novel ready-to-use, room-temperature stable liquid glucagon formulation for the management of other conditions associated with hypoglycemia with significant unmet medical need. In addition, we are applying our XeriSol and XeriJect technology platforms to convert other commercially-available drugs into ready-to-use, room-temperature stable liquid formulations to address the needs in multiple therapeutic areas and conditions, including epilepsy and diabetes. We own the worldwide rights to our proprietary formulation technology platforms and our product candidates, with 66 patents issued globally, including a composition of matter patent covering our ready-to-use glucagon formulation that expires in 2036.

Our proprietary XeriSol and XeriJect non-aqueous formulation technologies allow for the subcutaneous, or SC, and intramuscular, or IM, delivery of highly-concentrated, ready-to-use formulations of peptides, proteins, antibodies and small molecules using commercially-available syringes, auto-injectors, multi-dose pens and infusion pumps. Current aqueous formulations of certain drugs present numerous challenges for patients and care providers, including multi-step reconstitution, refrigeration requirements, large injection volumes and intravenous, or IV, administration over several hours. Our broadly-applicable platforms offer the opportunity to eliminate reconstitution and refrigeration, enable long-term room-temperature stability, significantly reduce injection volume and allow for a more convenient SC or IM administration as opposed to IV infusion, all of which we believe are distinct advantages over these existing aqueous formulations. We believe that our technology platforms can lead to products that will improve outcomes and enable easier administration while reducing costs for payors and the healthcare system.

We are developing our lead product candidate, the Glucagon Rescue Pen, for the treatment of severe hypoglycemia in people with diabetes to address limitations of currently marketed emergency glucagon kits. Hypoglycemia, a key concern of people with both Type 1 Diabetes, or T1D, and Type 2 Diabetes, or T2D, occurs when a person has a deficiency of glucose in their bloodstream, often as a result of insulin treatment. Symptoms of hypoglycemia include fatigue, shakiness, anxiety, headache, nausea and vomiting, and in severe cases, hypoglycemia can result in seizure, coma and death. The current standard of care for severe hypoglycemia in the ambulatory setting is the emergency administration of glucagon, a hormone that raises the concentration of glucose in the bloodstream. Currently marketed emergency glucagon kits consist of a glucagon powder that must be reconstituted with a liquid diluent and drawn into a syringe using a multi-step procedure that can be difficult to successfully administer, particularly in an emergency. In published comparative human factors studies with currently marketed kits, only 6% to 31% of users were able to successfully administer the full dose of glucagon. The underuse or unsuccessful use of currently marketed kits leave people at risk of experiencing prolonged severe hypoglycemic events, which if left untreated, can lead to serious health consequences and death.

We believe our Glucagon Rescue Pen addresses the administration challenges of currently marketed products, and, if approved, has the potential to be the preferred emergency glucagon product. Our ready-to-use Glucagon Rescue Pen does not require reconstitution or refrigeration and features two-year room-temperature stable liquid glucagon delivered in an auto-injecting device with no visible needle. In our human factors study, 99% of users were able to successfully administer the full dose with our ready-to-use Glucagon Rescue Pen.

Our goal is to establish our Glucagon Rescue Pen, if approved, as the preferred emergency glucagon product and drive greater adoption and penetration of emergency glucagon therapy by offering a glucagon product that better meets the needs of patients and caregivers. The ADA recommends that glucagon be prescribed for all individuals at

increased risk of clinically significant hypoglycemia for use in the event of an emergency. People with diabetes who are treated with insulin or substances that promote production of insulin are increased risk of clinically significant hypoglycemia. There are an estimated 1.3 million people with T1D who are treated with insulin because their bodies do not naturally produce insulin, all of whom are clinically appropriate for glucagon. Approximately 4.3 million additional people with T2D are treated with insulin because their bodies do not use insulin properly, of which we estimate that approximately 50% are clinically appropriate for glucagon. Therefore, we estimate the potential target population for emergency glucagon therapy totals approximately 3.5 million people in the United States. Our commercial strategy is to penetrate this market efficiently with a concentrated sales force by targeting high prescribers of glucagon and mealtime insulin, and activate demand through targeted direct-to-patient promotion.

Due to the limitations of currently marketed products, only approximately 660,000 total prescriptions for emergency glucagon kits were written in 2017, resulting in the purchase of approximately 960,000 single-dose kits. Based on our market research, we intend to market two Glucagon Rescue Pens per package and to target all 3.5 million people that we believe are clinically appropriate for glucagon. In 2017, U.S. sales for emergency glucagon kits was approximately $240 million, but we believe that increasing penetration, including by new entrants that address unmet patient and caregiver needs, may result in a market totaling up to $2.0 billion. Outside of the United States, we estimate there are an additional 3.5 million people with diabetes in Europe and an additional 12.5 million people with diabetes in Japan and China that are clinically appropriate for emergency glucagon treatment. We plan to pursue development and commercialization collaborations for these markets.

We are also applying our glucagon formulation to five other intermittent and chronic use conditions with significant unmet medical need. These additional applications are:

- Post-Bariatric Hypoglycemia, or PBH, syndrome, a serious complication of bariatric surgery that can arise from excessive insulin, or hyperinsulinism, due to the change in gastric anatomy resulting from bariatric surgery.
- Congenital Hyperinsulinism, or CHI, a condition caused by several genetic defects that result in severe, persistent hypoglycemia in infants and children, which can lead to brain damage and death.
- Hypoglycemia-Associated Autonomic Failure, or HAAF, in which chronic hypoglycemia impairs the body's natural response to restore blood sugar levels and can lead to an individual becoming unaware of the onset of a severe hypoglycemic event and result in seizure, coma and death.
- Exercise-Induced Hypoglycemia, or EIH, in people with diabetes. Exercise, particularly aerobic exercise, often results in a significant drop in blood glucose levels for people on insulin.
- Glucagon in a fully-integrated, bi-hormonal artificial pancreas closed-loop system.

By applying our ready-to-use glucagon to treat multiple conditions, we expect to leverage operating efficiencies across supply chain, research and development and commercial and medical organizations.

We also are applying our technology platforms to develop additional product candidates, such as ready-to-use, liquid-stable diazepam delivered via a commercially-available auto-injector for the emergency treatment of epileptic seizures and a fixed-dose co-formulation of pramlintide and insulin, or Pram-Insulin, for the management of diabetes. We believe that our strong product candidate portfolio, complemented by external expansion opportunities, will support our vision to effectively and efficiently meet the needs of our target markets.

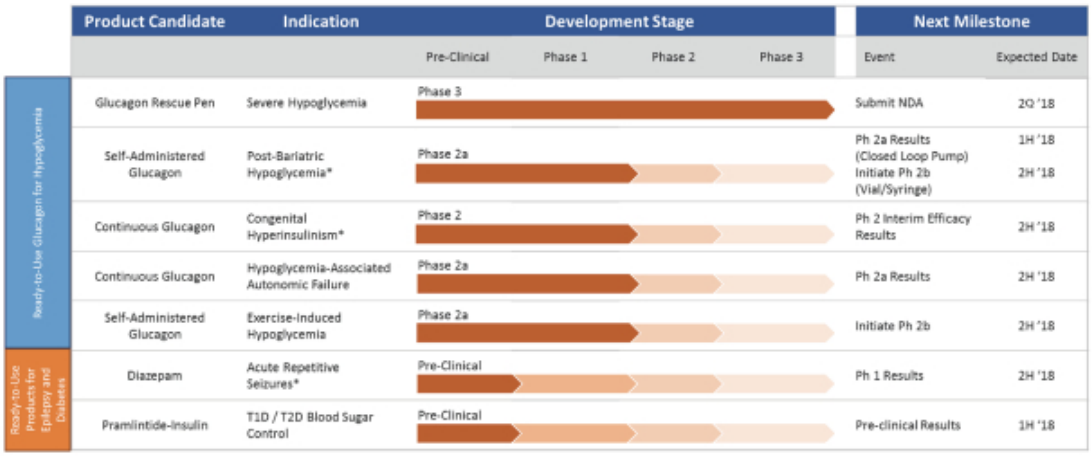
The nature of our product candidates and target conditions provide us with a potentially faster and capital efficient development and regulatory pathway to approval. The FDA has granted orphan drug status to three of our product candidates, which are our ready-to-use glucagon for PBH and CHI, and our ready-to-use, liquid-stable formulation of diazepam for the treatment of acute repetitive seizures, or ARS, in patients with epilepsy. This designation provides us with research and development tax credits and exemption from FDA user fees, as well as seven years of orphan drug exclusivity upon product approval. In addition, because certain conditions that we intend to target are rare conditions, we believe our clinical trials may be of smaller size than studies for conditions that are not rare conditions. Furthermore, because the product candidates developed using our technology platforms are designed to be reformulations of currently approved products, we expect to utilize the FDA's pathway under Section 505(b)(2) of the U.S. Federal Food, Drug and Cosmetic Act, or the FDCA, which permits submissions to rely, in part, on the

safety and effectiveness of a previously approved product, which may potentially result in a more expeditious pathway to FDA approval.

Our management team includes veterans in drug development, discovery and commercialization, with executive experience in leading global pharmaceutical and healthcare companies, including Durata Therapeutics, Baxter Healthcare, Merck, Searle, Takeda, Warner Chilcott, MedPointe Healthcare, Amylin Pharmaceuticals, PowderJect Technologies, Integra LifeSciences and Alpharma. We are supported by investors that include private equity, venture capital and public healthcare investment funds. Our investors include Asahi Kasei, Bay City Capital, Deerfield, Merieux Developpement, Palmetto Partners, Redmile, Sabby and Wild Basin. As of March 1, 2018, we had raised an aggregate of $105.6 million from the sale of our equity securities.

Our Pipeline

The following table summarizes key information about our internal product candidates.



* Received orphan drug designation

Additionally, we expect to commence a proof-of-concept clinical study for our bi-hormonal artificial pancreas program in mid-2018.

Our Strategy

Our strategy is to utilize our proprietary non-aqueous formulation technology platforms to convert marketed and development-stage products that have poor solubility and stability into ready-to-use, user-friendly injectable and infusible drugs for multiple therapeutic areas and conditions, including hypoglycemia, epilepsy and diabetes. We also seek to apply our formulation technology platforms to enhance the formulations of proprietary products and candidates of other pharmaceutical and biotechnology companies. The key elements of our strategy include:

- ***Rapidly secure regulatory approval for our lead product candidate, the Glucagon Rescue Pen, for severe hypoglycemia***. We have completed two Phase 3 clinical trials for our Glucagon Rescue Pen and expect to submit a NDA to the FDA in the second quarter of 2018 utilizing the 505(b)(2) regulatory pathway. Additionally, we are engaged in ongoing interactions with the European Medicines Agency, or EMA, regarding our development path in Europe.
- ***Maximize the commercial potential for our Glucagon Rescue Pen***. If approved, we plan to commercially launch our Glucagon Rescue Pen in the United States in the second half of 2019. We expect to initially target approximately 8,000 healthcare professionals who are high prescribers of current glucagon kits and/or mealtime insulin products, using an initial sales force of 60 individuals, and activate demand through targeted direct-to-patient promotion. We have started to build our commercial organization, including individuals in operations and marketing, as well as our medical affairs organization. Outside of the United States, we plan to pursue development and commercialization partnerships.

- ***Advance our ready-to-use glucagon portfolio to address other conditions associated with hypoglycemia***. We plan to apply our ready-to-use, room-temperature stable liquid glucagon to address multiple other conditions that could benefit from intermittent or chronic administration, such as PBH, CHI, HAAF and EIH in diabetes. We are also evaluating our liquid-stable glucagon as the glucagon component of a fully-integrated, bi-hormonal artificial pancreas. We plan to leverage efficiencies across our portfolio, such as commercial supply chain, research and development and commercial and medical organization. We plan to use commercially available drug delivery devices for our liquid-stable glucagon formulation and associated intermittent and chronic glucagon programs.
- ***Leverage our technology and expertise to develop a portfolio of additional product candidates***. We are exploring the application of our formulation technology platforms to other commercially available drugs for multiple conditions. We are developing an improved formulation of diazepam for the treatment of ARS in patients with epilepsy, to be administered through a ready-to-use auto-injector. We have completed formulation development and preclinical pharmacokinetic studies and plan to commence a Phase 1 clinical trial in the first half of 2018. We are also conducting preclinical studies of a fixed-ratio pramlintide-insulin combination product for the treatment of diabetes.
- ***Collaborate with third party pharmaceutical and biotechnology companies to apply our technology platforms to enhance the formulations of their proprietary products and candidates***. We are pursuing formulation and development partnerships to apply our XeriSol and XeriJect technology platforms to enhance the formulation, delivery and clinical profile of other companies' proprietary drugs and biologics. We currently are working with several companies on feasibility programs to evaluate the formulation of their therapeutics with XeriSol or XeriJect, depending on the type of molecule. We plan to continue to explore the application of our formulation technology platforms to proprietary drugs and biologics from additional pharmaceutical and biotechnology companies.

Our Technology Platforms

Overview

Our proprietary non-aqueous formulation technology platforms are designed to address the challenges presented by current aqueous formulations of certain drugs. Injectable pharmaceuticals have conventionally used aqueous delivery systems to administer drugs and biologics, but in the presence of water, many drugs have poor solubility and low stability. To optimize their stability and enable longer-term storage, many of these products are freeze dried into a powder and, when needed, must be reconstituted with a liquid diluent, which is often a challenging multi-step procedure with the potential for error. Furthermore, the drug product begins to break down once combined with water, which requires the drug to be used immediately or otherwise refrigerated. In addition, these products can require complicated formulations and large injection volumes to make them soluble. For many products, these volumes are too large for SC or IM delivery and instead necessitate IV infusion over several hours. These drugs can be difficult or painful to administer and have limited portability, resulting in an overall poor experience for patients and caregivers.

Our proprietary XeriSol and XeriJect platforms offer the opportunity to eliminate the need for reconstitution and refrigeration, enable long-term room-temperature stability, significantly reduce injection volume and allow for a more convenient SC or IM administration as opposed to IV infusion, all of which we believe are distinct advantages over existing aqueous formulations of marketed and development-stage products. We believe that our technology platforms can lead to products that will improve outcomes and enable easier administration while reducing costs for payors and the healthcare system.

Our XeriJect formulation platform is best suited for drugs and biologics consisting of large molecules, such as proteins, monoclonal antibodies and vaccines. XeriSol is best suited for peptides and small molecules that currently encounter formulation challenges. With XeriJect, we have formulated suspensions with a protein concentration in excess of 400 mg/mL, far exceeding current aqueous formulation systems with maximum achievable protein concentrations of 50-250 mg/mL. These biocompatible non-aqueous, injectable solutions or suspensions formulated with our platforms can then be packaged for administration in a commercially-available auto-injector, pre-filled syringe, vial, multi-dose pen or infusion pump.

Ready-to-Use Glucagon

Our novel, room-temperature stable liquid glucagon formulation represents a significant advancement over the current freeze-dried, or lyophilized, glucagon, enabling a ready-to-use solution that can be quickly and easily injected or infused subcutaneously. This formulation is designed to provide the flexibility to dose different volumes of liquid glucagon using a range of delivery devices to suit the needs of people with hypoglycemic conditions. We believe our ready-to-use glucagon has the potential to change the paradigm for treatment or prevention of hypoglycemic conditions and improve the lives of people who experience hypoglycemia.

Our Product Candidates

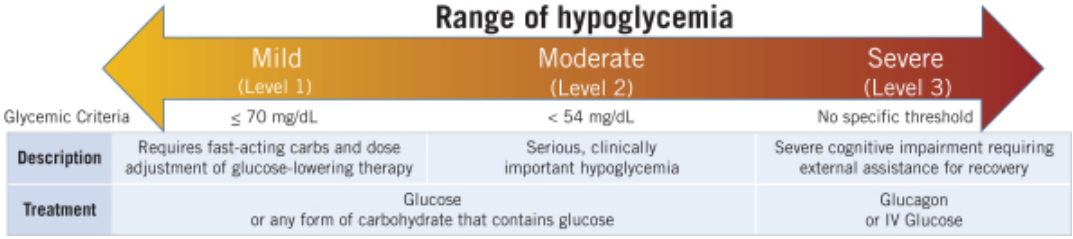
Glucagon Rescue Pen

Our Glucagon Rescue Pen offers a ready-to-use, room-temperature stable glucagon that is designed to be administered subcutaneously in a simple two-step process. In our human factors study, 99% of users were able to successfully administer the full dose with our Glucagon Rescue Pen. Conversely, in published human factors studies of currently marketed glucagon kits, only 6% to 31% of users were able to successfully administer the full dose. If approved, we believe we can establish our Glucagon Rescue Pen as the preferred emergency glucagon product and drive greater adoption and penetration of emergency glucagon therapy for patients and caregivers. We have completed two Phase 3 clinical trials for our Glucagon Rescue Pen and expect to submit a NDA to the FDA in the second quarter of 2018.

Hypoglycemia Background

Diabetes is a widespread condition that affects an estimated 425 million people worldwide. There are an estimated 20.2 million drug-treated people in the United States. Among people with diabetes in the United States, all of the approximately 1.3 million people with T1D and 4.3 million people with T2D require insulin therapy to lower their blood glucose levels to achieve normal blood sugar levels and avoid hyperglycemia. Conversely, insulin treatment in people with diabetes can also lead to hypoglycemia, a deficiency of glucose in the bloodstream, which is more common in people with diabetes who are treated with insulin or substances that promote production of insulin. In 2014, the U.S. Department of Health and Human Services National Action Plan for Adverse Drug Event Prevention highlighted diabetes agent-associated hypoglycemia as one of its three primary concerns because of the severity and increasing prevalence of the problem. In 2017, the American Diabetes Association, or ADA, stated that hypoglycemia remains the major limiting factor in the glycemic management of T1D and T2D.

Hypoglycemia is categorized by level of severity, expressed as mild, moderate or severe hypoglycemic events. Definitions, symptoms and treatment recommendations for hypoglycemia per the ADA and the American Association of Clinical Endocrinologists, or AACE, are summarized in the figure below:



Hypoglycemic events of any severity are a daily concern for people with diabetes. Severe hypoglycemic events are extremely frightening for patients and caregivers and can result in seizure, coma and, if left untreated, death. Fear of hypoglycemia and the morbidity and mortality risks associated with it is a constant reality for people with diabetes. According to scientific literature, fear of hypoglycemia is a critical impediment to psychological well-being and quality of life and represents the greatest barrier to optimal glycemic control. Studies have shown that only 14% of those aged 18–25 years and 29% of those aged 26–50 years achieved optimal glycemic control by taking insulin.

The ADA recommends that glucagon be prescribed for all individuals at increased risk of clinically significant hypoglycemia, defined as blood glucose <54 mg/dL, for use in the event of an emergency. Glucagon works to raise the glucose levels in a person's blood by inducing the liver to convert glycogen, a type of stored sugar in the body, into glucose.

While patients can take preventive measures, hypoglycemic events still occur. On average, people with T1D experience an episode of mild or moderate hypoglycemia twice per week and 30% to 40% of people with T1D experience one to two episodes of severe hypoglycemia per year. On average, half of people with T2D treated with insulin experience an episode of mild or moderate hypoglycemia twice per month. People with T2D treated with insulin are also at risk of severe hypoglycemia, and approximately 21% of these individuals experience an episode of severe hypoglycemia at least once annually.

Limitations of Existing Products

Because of the urgent nature of severe hypoglycemia, the majority of severe hypoglycemic events are treated on an emergency basis, outside of a healthcare facility. Two emergency glucagon products are currently available to treat severe hypoglycemia: Eli Lilly's Glucagon Emergency Kit, or GEK, which represents approximately 78% of U.S. sales, and Novo Nordisk's GlucaGen, which represents approximately 22% of U.S. sales. Each product is sold as a vial of lyophilized, glucagon powder with an exposed needle/syringe that contains a liquid diluent. The glucagon powder must be combined with the liquid diluent at the time of use and drawn into a syringe in accordance with a complex multi-step reconstitution and dose calibration procedure. Long-term storage of the combined solution is impractical because once the lyophilized glucagon is combined with water, the solution becomes unstable and can fibrillate, rendering it inactive and potentially toxic.

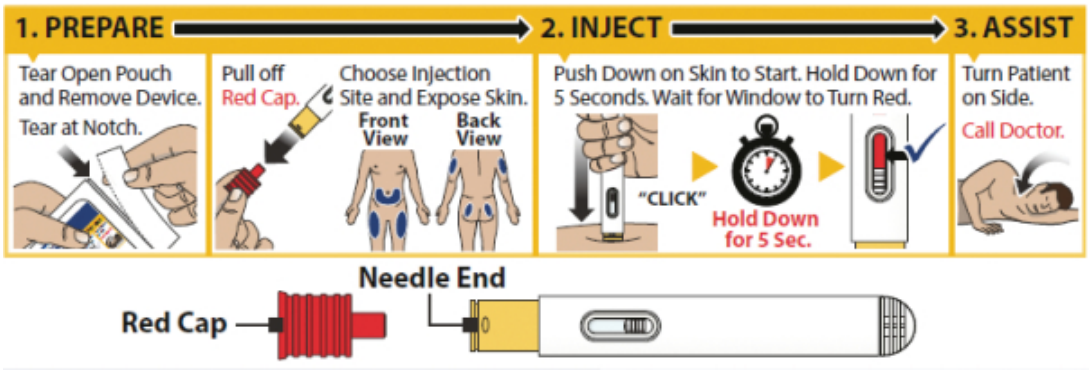
The multi-step reconstitution and dose calibration procedure required for current glucagon kits outlined below can be intimidating, particularly in an emergency situation, for likely glucagon kit users, a group that includes caregivers, co-workers, friends, teachers or other bystanders.

Step-by-Step Instructions for GEK
1. Flip off the seal from the vial of Glucagon powder.
2. Remove the needle cover from the syringe. DO NOT REMOVE THE PLASTIC CLIP FROM THE SYRINGE, as this may allow the push rod to come out of the syringe.
3. Insert the needle into the rubber stopper on the vial, then inject the entire contents of the syringe into the vial of Glucagon powder.
4. Remove the syringe from the vial, then swirl the vial until the liquid becomes clear. Glucagon should not be used unless the solution is clear and of a water-like consistency.
5. Insert the same syringe into the vial and slowly withdraw all the liquid. To use on children weighing less than 44 pounds, withdraw half of the liquid (0.5 mark on the syringe).
6. Cleanse site on buttock, arm or thigh and inject Glucagon immediately after mixing, and then withdraw the needle. Apply light pressure against the injection site.
7. Turn the person on his/her side. When an unconscious person awakens, he/she may vomit. **Call 911 immediately after administering Glucagon. If the person does not awaken within 15 minutes, you may administer a second dose of Glucagon, if previously instructed to do so by a healthcare professional.**
8. As soon as the person is awake and able to swallow, give him/her a fast-acting source of sugar (such as fruit juice), followed by a snack or meal containing both protein and carbohydrates (such as cheese and crackers, or a peanut butter sandwich).
9. Discard any unused reconstituted Glucagon. Remember to notify your healthcare professional that an episode of severe hypoglycemia has occurred. These are not the complete instructions. Go to "Information for the User" for complete instructions on how to administer Glucagon.

In 2018, we conducted a quantitative study with 700 caregivers and people with diabetes evaluating the market perceptions of current glucagon kits, which we refer to as our Caregiver and Patient Perceptions Study. In that study, only one third of respondents had a highly favorable opinion of the current kits and only half were confident that a glucagon kit user would be able to correctly administer the current emergency glucagon products. Furthermore, in three published comparative human factors studies with currently marketed kits, only 6% to 31% of users were able to successfully administer the full dose of glucagon. Accordingly, a diabetes patient experiencing a severe hypoglycemic episode who relies on a bystander to administer glucagon may not receive the full dose of glucagon needed to restore their blood glucose levels. Failure to promptly treat severe hypoglycemia leaves the person at critical risk of irreversible brain damage and heart problems, especially in people who already have coronary artery disease. If emergency medical treatment is not successful, the severe hypoglycemic event can be fatal.

Xeris Glucagon Rescue Pen Key Features and Benefits

Leveraging our patented XeriSol technology, we believe our Glucagon Rescue Pen offers an important advancement in the treatment of severe hypoglycemia. We are developing the Glucagon Rescue Pen as a ready-to-use, room-temperature stable liquid glucagon delivered via auto-injector available in 1 mg and 0.5 mg pre-measured doses for adult and pediatric use, respectively. We have designed the Glucagon Rescue Pen to be easy to administer, as depicted in the figure below.



The key features of our Glucagon Rescue Pen are:

- *Ready-to-use:* With its easy two-step administration process, the user simply pulls off the red cap and pushes the Glucagon Rescue Pen down on the skin for five seconds, until the window turns red. There is no reconstitution required at the time of emergency.
- *Easy-to-use:* In our human factors study, 99% of users were able to successfully administer the full dose with our Glucagon Rescue Pen.
- *No dose calibration required:* The Glucagon Rescue Pen will be offered in two pre-measured doses, 0.5 mg for pediatric administration and 1 mg for adolescents and adults.
- *No visible needle:* The needle in the Glucagon Rescue Pen is not visible to the user.
- *Auto-retraction:* The needle auto-retracts after administration for safety.
- *Auto-locks:* The device auto-locks after use for safety.
- *Two-year room-temperature stability:* No refrigeration is required at any time.

We also intend to offer our Glucagon Rescue Pen in a pre-filled syringe presentation that may be preferred by some healthcare professionals.

In contrast to currently marketed emergency glucagon kits, our Glucagon Rescue Pen features the following benefits:

	GEK 	Xeris Glucagon Rescue Pen 
No Reconstitution in Emergency	X	✓
Auto-Injection	X	✓
Needle Auto-Retraction and Needle Guard	X	✓
Dose Volume Pre-measured for Pediatrics	X	✓
Room-Temperature Stable as a Liquid	X	✓
Rate of Successful Full Dose Delivery in Human Factors Studies	6 – 31%	99%
Route of Administration	SC or IM	SC

In our Caregiver and Patient Perceptions Study, more than 75% responded that they would prefer our Glucagon Rescue Pen over currently available glucagon kits. In 2018, we conducted a quantitative study of over 400 healthcare professionals, which we refer to as our Healthcare Professional Perceptions Study. In that study, results indicated that glucagon would be prescribed to more people across all clinically appropriate patient segments if our Glucagon Rescue Pen were available. Based on this market research, we believe that the glucagon market will become more penetrated and that our Glucagon Rescue Pen will become the preferred emergency glucagon delivery solution.

Xeris Glucagon Rescue Pen Market Potential

Based on current market data as well as our Caregiver and Patient and Healthcare Professional Perceptions Studies, we believe that our Glucagon Rescue Pen, if approved, has the opportunity to increase penetration of the glucagon market in severe hypoglycemia by increasing the number of diabetes patients who have a filled glucagon prescription and by increasing the number of glucagon products they have on hand.

There are approximately 20.2 million drug-treated people with diabetes in the United States and the compounded annual growth rate in incidence of diagnosed and treated people with diabetes is approximately 4% per year. An additional 84 million people in the United States are pre-diabetic and may progress to T2D. The ADA recommends that glucagon be prescribed for all individuals at increased risk of clinically significant hypoglycemia for use in the event of an emergency. Based on our Healthcare Professional Perceptions Study, we believe almost all people with T1D and approximately 50% of people with T2D on insulin are considered clinically appropriate for glucagon. In the United States, there is an estimated 1.3 million people with T1D who are treated with insulin because their bodies do not naturally produce insulin and approximately 4.3 million additional people with T2D who are treated with insulin because their bodies do not use insulin properly. In the aggregate, we estimate that the potential target population for emergency glucagon therapy totals approximately 3.5 million people in the United States. We intend

to sell our Glucagon Rescue Pen in a package of two, based on responses from our market research indicating that potential buyers would purchase, on average, two pens per person. We believe by increasing penetration into the market for emergency glucagon kits, and based on the current price of approximately $280 per unit for currently marketed kits, the U.S. market potential may total up to $2.0 billion.

Despite the risk of experiencing a severe hypoglycemic event, we believe that emergency glucagon therapy is underappreciated, under-evaluated and under-taught, resulting in a market that is under-penetrated. According to a 2015 study published in the journal *Endocrine Practice*, approximately 50% of people with T1D and approximately 3% of people with T2D with a new insulin prescription had a filled glucagon prescription. We believe that the drawbacks of currently marketed products and the lack of conversations regarding glucagon limit their adoption. Two of the top reasons given by people with diabetes for nonrenewal of glucagon prescriptions were that they were not confident that a caregiver or other person would be able to correctly administer the currently available kit, and their healthcare professional did not discuss the need for a new one with them. In the United States, approximately 660,000 total prescriptions for emergency glucagon kits were written in 2017, resulting in the purchase of approximately 960,000 single-dose kits. In 2017, U.S. sales for emergency glucagon kit totaled approximately $240 million.

In our Healthcare Professional Perceptions Study, results indicated that glucagon would be prescribed to more people across all clinically appropriate patient segments if our Glucagon Rescue Pen was available. Similarly, in our Caregiver and Patient Perceptions Study, almost two-thirds of people with T1D and T2D who use insulin said they would proactively ask for a prescription for our Glucagon Rescue Pen if available. Importantly, over half of those same people do not currently have a filled glucagon prescription. During an emergency hypoglycemic event, these individuals would often be required to seek treatment through ambulance calls, hospital admissions or office visits. We believe that these studies show that more people would want to have emergency glucagon on-hand if there was a product that better met their needs. We believe this represents an opportunity for our Glucagon Rescue Pen, if approved, to shift the site of care from the emergency room or hospital to less costly settings such as the home.

We believe that a relevant market analogue for our Glucagon Rescue Pen is the epinephrine auto-injector, including EpiPen, for life-threatening allergic reactions. The table below provides a comparison of the severe allergy and hypoglycemia markets.

	SEVERE ALLERGIC REACTION (EPINEPHRINE)	SEVERE HYPOGLYCEMIA (GLUCAGON)
Clinically Appropriate Patient Population in the United States	5.2 million patients	3.5 million patients
No. of Units Sold in the United States (2017)	~8.2 million auto-injectors	~960,000 kits*
Deaths in the United States each year	<325 deaths	>27,000 deaths

* Single-dose units of Eli Lilly's Glucagon Emergency Kits and Novo Nordisk GlucaGen

Severe hypoglycemia currently has more than an 86-fold likelihood to result in death than severe allergic reactions. Additionally, severe hypoglycemia has been shown to have a nearly 30% cumulative mortality after three years. We believe this comparison of the allergy and hypoglycemia markets supports the potential of our Glucagon Rescue Pen, if approved, to increase both the number of clinically appropriate people who have glucagon, as well as the number of glucagon products they have on hand.

Outside of the United States, we estimate that an additional 3.5 million people with diabetes in Europe and an additional 12.5 million people with diabetes in Japan and China are clinically appropriate for glucagon treatment. However, only approximately 733,000 emergency glucagon products were sold in the United Kingdom, Germany, France, Italy and Spain combined, and only approximately 414,000 were sold in Japan and China combined, which we believe indicates that the market for emergency glucagon products is significantly under-penetrated in those regions.

Commercial Strategy

If approved, we will seek to replace currently marketed emergency glucagon kits with our Glucagon Rescue Pen, increase the number of at-risk people who carry emergency glucagon and promote access to emergency glucagon products. While our sales force and medical teams expect to focus on driving awareness and adoption of our Glucagon Rescue Pen by healthcare professionals, we believe accelerated growth and expanded uptake will come from targeted direct-to-patient messaging that, because the majority of people with diabetes are concentrated in ten states, will allow us to efficiently and effectively reach our target audience.

Our plan to execute on our go-to-market strategy for our Glucagon Rescue Pen includes the following:

- **Create awareness and anticipation prior to launch**. Following submission of our NDA, we plan to use the FDA's NDA review period to both better understand the market and create excitement and anticipation for our company and our technology. We expect to hire ten regional medical affairs directors prior to commercial launch to establish additional relationships with key opinion leaders and gain insight into current practice patterns and burdens. We also plan to begin to raise awareness in the market on the incidence, prevalence and impact of severe hypoglycemic events.
- **Drive awareness and adoption of our Glucagon Rescue Pen**. If approved by the FDA, we plan to drive awareness and adoption of our Glucagon Rescue Pen to replace current emergency glucagon kits in the market.
  - **Healthcare Professionals:** At launch, our targets will consist of high glucagon prescribing healthcare professionals. Approximately 3,000 healthcare professionals issue 50% of current glucagon prescriptions. We plan to hire 60 sales representatives initially to reach these professionals.
  - **Patients and Caregivers:** We intend to activate patient advocacy organizations and leverage channels such as direct-to-consumer tactics, social media, digital presence, traditional offline channels and press coverage to drive awareness and communicate our value proposition to patients and caregivers. Epidemiology and census data indicate that ten states account for almost 60% of people with diabetes, allowing us to be efficient and effective with our promotional activities.
- **Penetrate the market**. We believe that the glucagon rescue market is currently significantly underpenetrated due to the lack of, and limitations in, current treatment options. We are designing our Glucagon Rescue Pen to offer healthcare professionals, patients and caregivers a ready-to-use alternative that facilitates administration of the full dose of glucagon every time it is used. We believe this offering, paired with our commercial focus, has the potential to grow the market in two ways:
  - **Healthcare Professionals:** We will also target approximately 5,000 healthcare professionals who are high meal-time insulin prescribers, but who are under-indexed in prescribing glucagon. We intend to reach these professionals using our initial sales representatives.
  - **Patients and Caregivers:** We believe there is an opportunity to activate patient and caregiver demand for our Glucagon Rescue Pen. Our Glucagon Rescue Pen is designed as an easy-to-use solution for a segment of patients and caregivers who currently lack the confidence in administering current emergency glucagon kits and would rather rely on emergency responders for treatment.
- **Promote access:** Current emergency glucagon kits have favorable market access and current trends indicate a relatively low level of management of these products by payors. For example, Eli Lilly's GEK is covered at or above 94% with unrestricted access across commercial, Medicare, Managed Medicaid and State Medicaid plans. A Diabetes Health Coverage: State Laws and Programs report reviewing state insurance mandated coverage, Medicaid coverage and state-sponsored diabetes program showed that 46 states and the District of Columbia have a diabetes statutory mandate for coverage, whether as medication or supply. Of our target patient population, approximately 50% are commercially-insured, one-third are covered by Medicare and approximately 15% are covered by Medicaid. To promote access to our Glucagon Rescue Pen, we plan to engage with payors to more fully understand their drivers and barriers and convey the health and pharmacoeconomic value of our Glucagon Rescue Pen.

We plan to establish a distribution channel in the United States for the commercialization of our Glucagon Rescue Pen. We expect to sell our Glucagon Rescue Pens to wholesale pharmaceutical distributors, who, in turn, will sell our Glucagon Rescue Pens to pharmacies and other customers. We expect to use a third-party logistics provider for key

services related to logistics, warehousing and inventory management, distribution, contract administration, order management and chargeback processing and accounts receivable management. Outside of the United States, we plan to collaborate with local companies.

Clinical Experience

We have completed two Phase 3 clinical trials for our Glucagon Rescue Pen. In addition, we have evaluated our Glucagon Rescue Pen in six preclinical studies, one Phase 1 pharmacokinetic, or PK, clinical trial and two Phase 2 clinical trials. We are currently conducting one supplementary Phase 3b clinical trial and an additional Phase 1 clinical trial from which we expect to obtain results in the second quarter of 2018. The following table summarizes the completed and ongoing clinical trials for our Glucagon Rescue Pen.

PROTOCOL NO./TITLE	PHASE OF DEVELOPMENT	DESIGN/OBJECTIVES	STUDY POPULATION AND DEMOGRAPHICS	DOSE (NO. EXPOSED EACH TREATMENT) AND DOSAGE FORM/ PRODUCT CONFIGURATION
Completed				
XSGP-302 A Phase 3 Study to Evaluate the Glucose Response of Glucagon Rescue Pen (Glucagon Injection) In Pediatric Patients With Type 1 Diabetes	Phase 3a	Non-randomized, open-label, single dose/efficacy, PD, PK, safety and tolerability	Children (2 <6, 6<12 and 12<18 years) with T1D n=31	2<6 years (n=7), single dose of 0.5mg Glucagon Rescue Pen; ages 6<12 years (n=13), single dose of 0.5mg Glucagon Rescue Pen; ages 12<18 years (n=11), single dose of 1mg Glucagon Rescue Pen followed by single dose of 0.5mg Glucagon Rescue Pen 7 to 28 days later/ Rescue Pen
XSGP-301 Glucagon Rescue Pen (Glucagon Injection) Compared To Eli Lilly Glucagon (Glucagon For Injection [rDNA Origin]) For Induced Hypoglycemia Rescue In Adult Patients With T1D: A Phase 3, Randomized, Blinded, 2-Way Crossover Study To Evaluate Efficacy and Safety	Phase 3a	Double-blind, randomized, two-way crossover/ efficacy (return to plasma glucose >70.0 mg/dL) of Glucagon Rescue Pen 1 mg to be non-inferior to Eli Lilly's glucagon; compare the PD characteristics of Glucagon Rescue Pen versus Eli Lilly's glucagon; safety and tolerability; PK.	Adult patients with T1D n=80	Glucagon Rescue Pen 1mg (n=78), Eli Lilly's glucagon 1mg (n=79)/Rescue Pen

PROTOCOL NO./TITLE	PHASE OF DEVELOPMENT	DESIGN/OBJECTIVES	STUDY POPULATION AND DEMOGRAPHICS	DOSE (NO. EXPOSED EACH TREATMENT) AND DOSAGE FORM/ PRODUCT CONFIGURATION
XSGP-202 Glucagon Rescue Pen (Glucagon Injection) For Induced Hypoglycemia Rescue In Adult Patients With T1D: A Phase 2A Pilot Study To Evaluate Protocol Design Issues For An Upcoming Phase 3 Clinical Study	Phase 2	Open-label 2-way crossover Explore safety efficacy in treatment of insulin-induced hypoglycemia	T1D adult male/female patients 18–65 years of age n=7	Glucagon Rescue Pen 0.5 mg (n=6) and 1 mg (n=7), subcutaneous injections given one week apart/ Pre-Filled Syringe
XSGP-201 A Randomized, Phase 2, Double-Blind, 3-Way Crossover Study With Glucagon Rescue Pen (Glucagon For Injection) To Evaluate Safety, Tolerability and Comparative Pharmacokinetics and Pharmacodynamics To Eli Lilly Glucagon (Glucagon For Injection [rDNA Origin] In Healthy Volunteers	Phase 2	Double-blind, Randomized, 3-way crossover/ Safety, tolerability, PK and efficacy vs. marketed comparator	Healthy male/female volunteers 18–60 years of age n=28	Subcutaneous injection of: Glucagon Rescue Pen 0.5 (n=29) and, 1 mg (n=28); and Eli Lilly's glucagon (rDNA origin) 1 mg/ Pre-Filled Syringe
Ongoing				
XSGP-101 A Two-Way Crossover Comparative PD/PK Study Of Glucagon Rescue Pen (Glucagon Injection) Administered By Auto-Injector And Pre-Filled Syringe	Phase 1	Two-way crossover comparative bioequivalence, safety, tolerability and PD/PK of Glucagon Rescue Pen administered via auto- injector vs. pre-filled syringe	Healthy male/female volunteers 18-64 years of age n=32	Glucagon Rescue Pen 1 mg /Pre-Filled Syringe

PROTOCOL NO./TITLE	PHASE OF DEVELOPMENT	DESIGN/OBJECTIVES	STUDY POPULATION AND DEMOGRAPHICS	DOSE (NO. EXPOSED EACH TREATMENT), ROUTE AND DOSAGE FORM/ PRODUCT CONFIGURATION
XSGP-303 Glucagon Rescue Pen (Glucagon Injection) Compared To Eli Lilly Glucagon (Glucagon For Injection [rDNA Origin]) For Induced Hypoglycemia Rescue In Adults With T1D: A Phase 3B Multi-Centered, Randomized, Controlled, Single-Blind, 2-Way Crossover Study To Evaluate Efficacy And Safety	Phase 3b	Non-inferiority, multi-centered, randomized controlled, single-blind, two-period, two-way crossover efficacy and safety	Adults with T1D	Glucagon Rescue Pen 1 mg, Eli Lilly's glucagon 1 mg/ Rescue Pen

Completed Phase 3 Clinical Trials

XSGP-302: A Phase 3 Study to Evaluate the Glucose Response of Glucagon Rescue Pen (Glucagon Injection) In Pediatric Patients With Type 1 Diabetes

In 2017, we conducted a sequential non-randomized, open-label, single dose efficacy and safety Phase 3 clinical trial in pediatric subjects with T1D. This clinical trial included a total of 31 subjects (seven subjects 2 to <6 years, 13 subjects 6 to <12 years and eleven subjects 12 to <18 years). In this clinical trial, we induced hypoglycemia, defined as plasma glucose <80 mg/dL, with administration of insulin and then treated subjects with our Glucagon Rescue Pen. The primary endpoint of this clinical trial was to assess the increase in plasma glucose of subjects from baseline to 30 minutes after injection of an age-appropriate dose of our Glucagon Rescue Pen, defined as 0.5 mg dose for subjects 2 to <12 years and in separate visits both a 0.5 mg and 1.0 mg dose for subjects 12 to <18 years.

All three age groups met the primary endpoint of non-zero glucose response at 30 minutes post-administration of our Glucagon Rescue Pen. All evaluable subjects achieved a target glucose increase of at least 25 mg/dL. Following administration, plasma glucose levels over time showed similar glucose responses for subjects in each age group and in each dose in the 12 to <18 years age group. Further, in each age group the observed effect was statistically significant with increases from baseline in mean plasma glucose at 30 minutes following administration of an age-appropriate dose of our Glucagon Rescue Pen. Administration of 0.5 mg of our Glucagon Rescue Pen in the 12 to <18 years age resulted in a glucose response that was similar to the age-appropriate dose of 1 mg of our Glucagon Rescue Pen.

Overall, our Glucagon Rescue Pen was observed to be well-tolerated. All auto-injectors, or AIs, delivered a full dose. There were no discontinuations due to adverse events, or AEs, no severe AEs, no device-related AEs and no serious adverse events, or SAEs. The majority of treatment emergent AEs observed were gastrointestinal disorders.

The following table summarizes additional trial design parameters and clinical results that we observed from XSGP-302:

GLUCAGON DOSE	0.5 MG DOSE			1 MG DOSE
SUBJECT AGES	2 TO < 6 YEARS	6 TO < 12 YEARS	12 TO < 18 YEARS	12 TO < 18 YEARS
n	7	13	11	11
% with >25 mg/dL rise in glucose within 30 minutes	100	100	100	100
Glucose C_{max} (mg/dL) Mean (SD)	207.8 (35.9)	206.9 (49.6)	212.1 (40.6)	198.9 (60.0)
Glucose T_{max} (minutes) Mean (SD)	67.7 (11.1)	66.4 (15.7)	78.2 (11.5)	81.8 (15.6)
% with nausea	42.9	53.8	36.4	36.4
% with emesis	14.3	23.1	0	18.2

XSGP-301: Glucagon Rescue Pen (Glucagon Injection) Compared To Eli Lilly Glucagon (Glucagon For Injection [rDNA Origin]) For Induced Hypoglycemia Rescue In Adult Patients With T1D: A Phase 3, Randomized, Blinded, 2-Way Crossover Study To Evaluate Efficacy and Safety

In 2017, we completed a non-inferiority, prospective, randomized, controlled, double-blinded, two-period, two-way crossover, comparative efficacy and safety Phase 3 pivotal clinical trial in male and female patients aged 18 to 75 years with T1D in an inpatient setting. The trial was conducted across seven locations in the United States and enrolled 80 subjects. The objectives of this clinical trial were to compare the safety, tolerability and efficacy of our Glucagon Rescue Pen and Eli Lilly's glucagon, as determined by an increase in plasma glucose concentration from below 50 mg/dL to greater than 70 mg/dL within 30 minutes after receiving glucagon. We also evaluated an additional primary endpoint of plasma glucose [3] 70 mg/dL or increase by >20 mg/dL within 30 minutes. This additional primary endpoint was defined and pre-specified for analysis prior to unblinding the study. Additional endpoints of interest included plasma glucose of >70 mg/dL or resolution of all induced neuroglycopenic symptoms within 30 minutes of glucagon, relief of hypoglycemia symptoms, global feeling of hypoglycemia and glucose elevation 0-90 minutes post-injection.

In this clinical trial, we induced severe hypoglycemia by an IV infusion of regular insulin followed by initial and subsequent bolus doses if plasma glucose after 30 minutes was > 60 mg/dL. Subjects were also administered an IV infusion of regular insulin based on a subject's historical use of basal insulin. The investigator adjusted the IV insulin infusion rate if the rate of glucose change after 30 minutes was < 1 mg/dL/minute. Investigators were instructed to avoid any bolus doses or basal infusion rate increases within 20 minutes of blinded study drug administration. Once the initial plasma glucose measurement < 50 mg/dL was achieved, the IV insulin infusion was stopped. Once the confirmatory plasma glucose reading < 50 mg/dL was achieved, subjects were administered blinded study drug via the subcutaneous route in the upper arm, leg or abdomen.

Subjects were randomized to receive glucagon in one of two sequence groups: our Glucagon Rescue Pen followed by Eli Lilly's glucagon, or Eli Lilly's glucagon followed by our Glucagon Rescue Pen. Following glucagon dosing, plasma glucose was monitored every five minutes until 90 minutes post-dosing. Additional blood samples were collected at regular intervals. Subjects also completed a questionnaire regarding hypoglycemia symptoms at the start of the hypoglycemia induction period and periodically until 45 minutes post-treatment with glucagon. Tolerability was assessed by comparing adverse event reports between the groups. In addition, subjects completed questionnaires concerning injection site discomfort. After a wash-out period of seven to 28 days, subjects returned to the clinic and the study procedures were repeated with each subject crossing over to the other treatment group.

Analyses of the primary endpoints were performed according to pre-specified intent-to-treat, or ITT, modified intent-to-treat, or mITT, and per-protocol methods. The ITT cohort was defined as all subjects randomized to one of the two sequence groups. The mITT cohort was defined as the ITT cohort minus one subject that mistakenly received two doses of Eli Lilly's glucagon. The per-protocol cohort was defined as the mITT cohort minus any subjects adjudicated for at least one major protocol violation. Criteria for major protocol violations were defined and pre-specified prior to unblinding of the trial. Following adjudication of major protocol violations, two subjects, one in each study arm, who

received a clinically significant (20%) increase in basal IV insulin rate during the final 20 minutes of the induction procedure were censored to establish the per-protocol cohort.

For the ITT and mITT analysis, three or fewer response failures were defined as the pre-specified threshold demonstrating non-inferiority of our Glucagon Rescue Pen. For the primary endpoint of glucose increase >70 mg/dL within 30 minutes, the total difference in response failures was four, representing one more than the pre-specified threshold of three response failures. For the additional primary endpoint of plasma glucose >70 mg/dL or increase by >20 mg/dL within 30 minutes, the total difference in response failures was two and, therefore, ITT analysis of this additional primary endpoint demonstrated that our Glucagon Rescue Pen was non-inferior to Eli Lilly's glucagon. The per-protocol analysis of both primary endpoints met the pre-specified threshold. Certain of our analyses may be viewed as post-hoc analyses and although post-hoc analyses can result in the introduction of bias and may be given less weight by the FDA, we believe that this retrospective analysis can provide additional information regarding results from this trial.

We believe the clinical trial results support the potential of our Glucagon Rescue Pen to reverse severe hypoglycemia in a reliable manner. In accordance with FDA and International Council for Harmonisation guidance for evaluation of non-inferiority studies, we presented a series of analyses implementing ITT, mITT and per-protocol cohorts for this clinical trial to the FDA at a pre-NDA meeting held in December 2017. In that meeting, the FDA agreed overall that the totality of data for our Glucagon Rescue Pen is sufficient to support NDA review.

Additionally, a single dose of our Glucagon Rescue Pen increased plasma glucose and improved clinical symptoms such as cognitive impairment and other neuroglycopenic/neurogenic symptoms that are associated with severe hypoglycemia in 100% of subjects. We also observed comparable increases in plasma glucose concentration from below 50 mg/dL to greater than 70 mg/dL within 30 minutes after receiving our Glucagon Rescue Pen and comparable resolution of clinical symptoms to Eli Lilly's glucagon, such as cognitive impairment and other neuroglycopenic/neurogenic symptoms that are associated with severe hypoglycemia, as well as comparable pharmacodynamics.

The following table summarizes the efficacy outcomes for XSGP-301.

	mITT RESPONSE RATE	
CLINICAL COMPARISON	**GLUCAGON RESCUE PEN**	**ELI LILLY GLUCAGON**
Subjects successfully rescued from induced hypoglycemia without other rescue therapy (e.g., D50)	100% (78/78)	100% (79/79)
Plasma glucose >70 mg/dL within 30 minutes of glucagon (primary endpoint)	Intent-to-treat† 94.9% (74/78) Per-protocol 96.1% (74/77)	Intent-to-treat 100% (79/79) Per-protocol 100% (78/78)
Plasma glucose of >70 mg/dL or > 20 mg/dL increase within 30 minutes of glucagon (additional primary endpoint)	Intent-to-treat 97.4% (76/78) Per-protocol 97.4% (75/77)	Intent-to-treat 100% (79/79) Per-protocol 100% (78/78)
Plasma glucose of >70 mg/dL or resolution of all induced neuroglycopenic symptoms within 30 minutes of glucagon	100% (78/78)	100% (79/79)
Resolution of hypoglycemia symptoms	100% (78/78)	100% (79/79)
Global feeling of hypoglycemia improvement pre/post injection	100% (78/78)	100% (79/79)
Sustained glucose elevation from [0-90] minutes post-injection	100% (78/78)	100% (79/79)

† one (1) additional endpoint failure exceeded the non-inferiority threshold of N=3; all other comparisons demonstrate non-inferiority vs. Eli Lilly's glucagon.

Overall, all treatment regimens were well-tolerated. None of the participants in the active treatment arms experienced an SAE that was related to the study drug. The incidence of AEs was low in both groups and the most commonly reported AE was nausea: 20.5% for our Glucagon Rescue Pen and 12.7% for Eli Lilly's glucagon (p=not

significant), followed by vomiting and headache. AEs were generally mild or moderate in severity, transient and resolved with no treatment.

Ongoing Clinical Trials

XSGP-303: Glucagon Rescue Pen (Glucagon Injection) Compared To Eli Lilly Glucagon (Glucagon For Injection [rDNA Origin]) For Induced Hypoglycemia Rescue In Adults With T1D: A Phase 3b Multi-Centered, Randomized, Controlled, Single-Blind, 2-Way Crossover Study To Evaluate Efficacy And Safety

In order to generate additional information regarding the entire treatment episode, including preparation and administration time of our Glucagon Rescue Pen compared to Eli Lilly's glucagon emergency kit, we are conducting a Phase 3b clinical trial of our Glucagon Rescue Pen that we expect to complete in the second quarter of 2018. This clinical trial is a non-inferiority, multi-centered, randomized controlled, single-blind, two-period, two-way crossover efficacy and safety inpatient study in adult subjects with T1D. The inpatient study involves two daytime clinical research center visits seven to 28 days apart, where subjects are randomized to receive 1 mg of either our Glucagon Rescue Pen during one period and Eli Lilly's glucagon emergency kit during the other. The primary endpoint of this study is to demonstrate that the efficacy of plasma glucose recovery for our Glucagon Rescue Pen is non-inferior to Eli Lilly's glucagon emergency kit, in T1D subjects who are within a state of insulin-induced severe hypoglycemia. Efficacy is defined as a measured plasma glucose value > 70 mg/dL within 30 minutes of administration of a study glucagon. This efficacy endpoint will be evaluated by the comparison of failure rates between the study treatment arms.

Secondary endpoints include demonstrating that our Glucagon Rescue Pen is non-inferior to Eli Lilly's glucagon emergency kit by either return to plasma glucose >70 mg/dL or an increase in plasma glucose > 20 mg/dL within 30 minutes post study drug injection and a return to plasma glucose >70 mg/dL or alleviation of all neuroglycopenic symptoms at 30 minutes post study drug injection. Additionally, a comparison of our Glucagon Rescue Pen to Eli Lilly's glucagon emergency kit will be performed to evaluate the PD characteristics, hypoglycemia symptom relief, safety and tolerability and the study drug preparation time. Study drug preparation time is defined as the time span beginning from the decision to treat the condition of severe hypoglycemia, de novo preparation of the study drug, until the injection of the study drug to the abdomen. This measurement is intended to evaluate the utility of ready-to-use glucagon within a real-world setting.

XSGP-101: A Two-Way Crossover Comparative PD/PK Study Of Glucagon Rescue Pen (Glucagon Injection) Administered By Auto-Injector And Pre-Filled Syringe

With respect to the pre-filled syringe presentation of our Glucagon Rescue Pen, based on FDA considerations from our pre-NDA meeting in December 2017, we are conducting our XSGP-101 clinical trial as well as human factors studies and device reliability testing, the results of which we intend to include in our Glucagon Rescue Pen NDA submission to the FDA.

XSGP-101 is a Phase 1 clinical trial two-way crossover comparative PD/PK study of our Glucagon Rescue Pen administered by auto-injector and pre-filled syringe, which we expect to complete in the second quarter of 2018. We expect to enroll approximately 32 healthy male and female volunteers between 18 and 64 years of age. The primary objective of this study is to demonstrate bioequivalence of our Glucagon Rescue Pen 1 mg when injected subcutaneously in the abdomen via auto-injector, versus a pre-filled syringe, in fasted healthy volunteers with low to normal blood glucose. Secondary objectives include safety and tolerability.

Other Completed Supporting Trials

Phase 2 Clinical Trials

XSGP-201: A Randomized, Phase 2, Double-Blind, 3-Way Crossover Study with Glucagon Rescue Pen (Glucagon For Injection) To Evaluate Safety, Tolerability and Comparative Pharmacokinetics and Pharmacodynamics To Eli Lilly Glucagon (Glucagon For Injection [rDNA Origin]) In Healthy Volunteers

In 2014, we completed a double-blind, randomized, three-way crossover Phase 2 clinical trial of our Glucagon Rescue Pen in 28 healthy male and female subjects 18 to 60 years of age to evaluate the safety, tolerability, PK and efficacy versus Eli Lilly's glucagon. Subjects were subcutaneously injected with our Glucagon Rescue Pen via a pre-filled syringe in doses of 0.5 and 1 mg, and Eli Lilly's glucagon for injection in a dose of 1 mg.

Plasma glucose concentration-time curves showed little separation between treatment groups and there were no substantial differences between our Glucagon Rescue Pen 1 mg and Eli Lilly's glucagon for injection 1 mg in terms of glucose area under the curve, maximum concentration, or C_{max}, and time to reach maximum concentration, or T_{max}.

Results showed that all treatments were well-tolerated and demonstrated a comparable safety profile. No SAEs were observed and all AEs were transient and consistent with rescue injections of glucagon.

XSGP-202: Glucagon Rescue Pen (Glucagon Injection) For Induced Hypoglycemia Rescue In Adult Patients With T1D: A Phase 2a Pilot Study To Evaluate Protocol Design Issues For An Upcoming Phase 3 Clinical Study

In 2015, we completed an open-label two-way crossover Phase 2 clinical trial to explore the safety and efficacy of our Glucagon Rescue Pen for the treatment of insulin-induced hypoglycemia in seven adult males and females with T1D 18 to 65 years of age. Subjects were given our Glucagon Rescue Pen injection via the pre-filled syringe 0.5 mg (n=6) and 1 mg (n=7), subcutaneous injections given one week apart.

All subjects in a state of insulin-induced hypoglycemia experienced objective and subjective response to rescue doses of our Glucagon Rescue Pen with return of glucose to > 70 mg/dL and resolution of all hypoglycemia symptoms within 30 minutes of injection.

Results showed AEs were generally mild and corresponded to known effects of rescue doses of glucagon. A single episode of vasovagal syncope was observed, which met the definition of an SAE as an important medical event, but was attributed by the investigator to study procedures.

Preclinical Studies

Six preclinical studies, consisting of five studies in rats and one study in rabbits, demonstrated that our concentrated, non-aqueous solution of glucagon was safe in animal models. Studies included PK and PD studies, toxicity and potential impurities studies, toxicokinetic evaluations and local tolerance.

Human Factors Summative Validation Study

In 2017, we conducted a human factors summative validation study in users, which confirmed that our Glucagon Rescue Pen can be correctly, safely and effectively used. Of the 75 injections, 74 (99%) were successful. There was a single failure that occurred when an untrained subject prematurely lifted the pen from the injection site within approximately 1.5 seconds of activation, resulting in a partial dose. The subject admitted to not reading the label guide. No mitigation response was needed as the failure was attributed to the participant's noncompliance with reading the label guide while performing the procedure. After reviewing the label guide, the subject successfully administered the injection during an unaided second attempt. The study concluded that the Glucagon Rescue Pen dose label, packaging, device and injection procedure, label guide and instructions for use had been successfully validated.

Ready-to-Use Glucagon for Hypoglycemia Associated with Other Intermittent and Chronic Conditions

We are applying our ready-to-use liquid-stable glucagon formulation to treat other intermittent and chronic conditions with significant unmet medical need. In particular, our formulation may be applied to conditions requiring continuous doses or smaller or mini-doses of glucagon over a longer administration period. We intend to leverage work across our programs to substantially reduce development costs for each indication and enable expanded uses for intermittent and chronic applications of ready-to-use glucagon to follow our Glucagon Rescue Pen. Aspects include:

- Chemistry, manufacturing and controls, or CMC
- Non-clinical toxicology program
- Clinical supplies manufacturing

For intermittent and chronic conditions, we intend to leverage our preclinical studies across our glucagon portfolio, which consist of two toxicology studies in rats, one toxicology study in pigs, one tolerability study in rabbits, two PK studies in rats and one toxicology and PK study in rats. These preclinical studies supported further development of our ready-to-use glucagon in our target conditions and did not raise safety concerns in animal models. A number of additional toxicology studies are ongoing or planned, to support long-term chronic use of ready-to-use glucagon in these additional hypoglycemic conditions.

For commercialization in our intermittent and chronic conditions, we expect to target endocrinologists, diabetologists and primary care providers that are currently prescribing glucagon and rapid acting insulin. Many of these physicians, particularly endocrinologists, are also currently treating PBH patients and we believe there is significant overlap between these physicians and those who would prescribe ready-to-use glucagon for HAAF and EIH. Furthermore, because there are few CHI patients and they are primarily treated at a handful of centers of excellence in the United States, we believe we can engage these clinicians with a small group of regional medical affairs directors.

Ready-to-Use Glucagon for Post-Bariatric Hypoglycemia Syndrome

We are developing a ready-to-use glucagon formulation for chronic administration for PBH, a challenging complication of bariatric surgery that may significantly impair quality of life, but for which there are currently no approved treatments. In January 2018, we received orphan drug designation from the FDA for our ready-to-use glucagon for the treatment of patients with hyperinsulinemic hypoglycemia, of which PBH is a category. We plan to meet with the FDA in the first half of 2018 and complete a Phase 2b clinical trial for our ready-to-use glucagon for PBH by the end of 2018. We expect to initiate a pivotal clinical program in the first half of 2019.

Post-Bariatric Hypoglycemia Syndrome Market

Obesity and related comorbidities such as T2D and cardiovascular disease are increasingly recognized as a major threat to individual and public health, with sustained weight loss difficult to achieve. Clinicians and patients alike have embraced the results of recent controlled clinical trials demonstrating the efficacy of surgical procedures performed on the stomach or intestines, known as bariatric surgery, to not only induce sustained weight loss but also to improve or normalize obesity-related comorbidities, including T2D. The number of bariatric surgeries performed in the United States has increased from an estimated 158,000 procedures per year in 2011 to 216,000 in 2016, growing nearly 40% in just five years. While benefits of bariatric surgery are now achieved with a lower risk of surgical complications, longer-term intestinal and nutritional complications can still occur.

One challenging and sometimes severe complication of bariatric surgery is hyperinsulinemic hypoglycemia. Hyperinsulinemic hypoglycemia, and more specifically PBH, is most commonly associated with Roux-en-Y gastric bypass, or RYGB, a procedure in which the small intestine is re-routed to a small resected stomach pouch. However, PBH has also been observed following sleeve gastrectomy, a procedure that reduces the size of the stomach. PBH is defined as documented plasma glucose levels below 70 mg/dL in conjunction with hypoglycemic symptoms and the relief of such symptoms with the normalization of glucose levels. Symptoms include palpitations, lightheadedness and sweating. A subset of post-bariatric patients develops very severe hypoglycemia involving a shortage of glucose in the brain, known as neuroglycopenic symptoms, typically occurring one to three years following bariatric surgery, associated with confusion, decreased attentiveness, seizure and loss of consciousness. For these patients, quality of life can be severely affected as many cannot care for themselves or even be left alone and may ultimately lose their employment due to this disability.

Hypoglycemia typically occurs after meals, particularly those rich in simple carbohydrates. Due to the change in gastric anatomy resulting from bariatric surgery, plasma insulin concentrations are inappropriately high at the time of hypoglycemia in these patients. Treatment of hypoglycemia requires rapid-acting carbohydrates such as glucose tablets, which in PBH patients can contribute to rebound hyperglycemia that trigger further insulin secretion and recurrent hypoglycemia.

There are currently no approved treatments for PBH. Current strategies to manage PBH include dietary modification aimed at reducing intake of high glycemic index carbohydrates. Both diet and off-label administration of pre-meal acarbose, an anti-diabetic drug used to treat T2D, aim to minimize rapid post-meal surges in glucose that trigger insulin secretion. Additional off-label therapies include those aimed at reducing insulin secretion. In severe cases, gastric restriction or banding has been required to slow gastric emptying and gastrostomy tubes have been used to provide the sole source of nutrition. Despite strict adherence to medical nutrition therapy and clinical use of multiple medical options, patients continue to have frequent hypoglycemia. While hypoglycemia most commonly occurs following meals, it can also occur in response to increased activity and emotional stress. Importantly, patient safety is additionally compromised when hypoglycemia unawareness develops with recurrent hypoglycemia. We believe there is an urgent need for therapeutic options to allow optimal nutrition, to maintain health and quality of life and improve safety in patients with PBH.

Because episodes of hypoglycemia normally occur in the ambulatory setting, the reported prevalence of PBH varies, but we estimate that roughly 1% to 2% of bariatric surgery patients experience PBH. As bariatric procedures have been performed for over ten years, market research has estimated a standing population of approximately 30,000 patients with severe PBH in the United States that require additional treatment options. A similar size patient population is estimated to exist in Europe. These patients may require chronic administration of glucagon multiple times a day.

Xeris Offering–Ready-to-Use Glucagon for PBH

We have developed a ready-to-use glucagon formulation that can be easily and quickly injected or infused subcutaneously from a syringe or pump. Injection of small doses of our liquid-stable glucagon after meals may offer a novel mechanism for PBH patients to treat or prevent hypoglycemia. Importantly, these smaller and more physiologic doses are designed to prevent rebound hyperglycemia associated with glucose tablets, carbohydrate intake and rescue doses of glucagon. Further, small doses of glucagon may offer a direct treatment mechanism for PBH, as opposed to indirect methods aimed at preventing hypoglycemia that are currently employed using various off-label therapeutic options.

Primary market research has shown endocrinologists are comfortable with glucagon's mechanism of action and current safety profile and view ready-to-use glucagon as a welcome treatment option for PBH patients. Physicians surveyed reported ready-to-use glucagon utilization of 68% to 97% if the product can prevent half of severe hypoglycemic events in PBH patients.

As there are currently no therapeutic options indicated for treatment of PBH and the condition has been designated a rare disease, we believe that payors will include our ready-to-use glucagon on their formularies, if approved. We intend to conduct additional payor research as product development progresses.

From 2015 to 2017, the NIH National Institute of Diabetes and Digestive and Kidney Diseases awarded us $1.78 million in Fast-Track Small Business Innovation Research, or SBIR, grants to demonstrate the potential benefits of ready-to-use glucagon in these patients. Collaborators on this grant include endocrinologists at the Joslin Diabetes Center and device engineers at the Harvard University John R. Paulson School of Engineering and Applied Science.

Clinical Experience

We have completed seven preclinical studies in multiple species and a proof-of-concept clinical trial. We are conducting an ongoing randomized controlled Phase 2a clinical trial for our ready-to-use glucagon for PBH and we expect to conduct a Phase 2b clinical trial in the second half of 2018.

Phase 2 Clinical Trials

XSGO-PB01: A Phase 2 Proof-Of-Concept Study of Sensor Guided, Clinician-Administered Delivery of Glucagon Infusion from a Patch Pump to Prevent Post-Prandial Hypoglycemia in Post-Bariatric Surgery Patients

In 2017, we conducted an iterative design-and-evaluation Phase 2 clinical trial to assess the performance of a novel event-based hypoglycemia prediction algorithm that triggered delivery of mini-doses of ready-to-use glucagon from a patch-pump. For the trial, we recruited patients 18 to 65 years of age with a history of RYGB surgery and PBH with neuroglycopenia who were uncontrolled on medical nutrition therapy and medications. In the inpatient setting, subjects received a mixed-meal tolerance test, which is known to cause hypoglycemia in these patients. Upon receipt of an alarm based on continuous glucose monitor data, subjects were given small, subcutaneous infusions of ready-to-use glucagon from a pump, with the aim of preventing hypoglycemia.

Ready-to-use glucagon bolus through the infusion pump was observed to rapidly raise serum glucagon levels and the doses employed were not associated with increased insulin or C-peptide concentrations. Nadir glucose and time spent under 75 mg/dL in the period after the glucagon bolus was reduced progressively with each new stage of protocol development, which involved either earlier hypoglycemia alarms or larger glucagon doses. All seven patients successfully completed nine treatment visits in this trial. Results showed the treatment to be well-tolerated, with discomfort at the infusion site and erythema the most frequent adverse events.

Since this was the first implementation of the ready-to-use glucagon formulation in mini-doses in PBH, the dosage was chosen with caution to prevent rebound hyperglycemia that has been observed with use of rescue doses of

glucagon. Using these results, we determined the dosage required to effectively prevent hypoglycemic events in the postprandial setting. The results of this trial were published in the peer-reviewed journal *Diabetes Technology & Therapeutics*.

XSGO-PB02: Closed-Loop Glucagon Pump for Treatment of Post-Bariatric Hypoglycemia

Following the positive proof-of-concept outcome, in the fourth quarter of 2017, we initiated a randomized, placebo-controlled, double-blind Phase 2 clinical trial to assess the efficacy of ready-to-use glucagon to prevent and treat hypoglycemia occurring in patients with PBH in response to meals or exercise. Following a mixed-meal tolerance test, subjects were randomized to either vehicle or glucagon infusion on the first study visit and crossed-over to the other treatment during the second treatment visit. Investigators were masked to subject assignment.

The clinical trial is currently ongoing, with results from ten subjects expected in the first half of 2018. We expect this randomized controlled trial data will help enable the evaluation of ready-to-use glucagon in the outpatient setting in a planned Phase 2b clinical trial using a vial/syringe, which we intend to complete in the second half of 2018.

Ready-to-Use Glucagon for Congenital Hyperinsulinism

We are evaluating our ready-to-use glucagon formulation for chronic management of congenital hyperinsulinism, for which there are currently no approved therapies. In the United States, 80 to 160 infants are born with CHI on an annual basis. We estimate that there are approximately 6,200 patients with CHI in the United States. In September 2014, we received orphan drug designation from the FDA for ready-to-use glucagon for the prevention of chronic, severe hypoglycemia in patients with CHI. In October 2014, we also received orphan drug designation from the EMA for ready-to-use glucagon for the treatment of congenital hyperinsulinism. We are currently conducting a Phase 2 clinical trial, from which we expect interim efficacy data in the second half of 2018. Based on these interim results, we plan to meet with the FDA and discuss plans for a pivotal program.

Congenital Hyperinsulinism Market

CHI is the result of several genetic defects that present as dysregulated increased insulin secretion, causing severe, persistent hypoglycemia in infants and children. CHI often responds poorly or not at all to current medical approaches and can sometimes lead to surgical removal of the pancreas, or near-total pancreatectomy. In CHI, microscopic abnormalities in the pancreas can result in prolonged severe hypoglycemia which, if untreated, can cause death. Repeated episodes of severe and prolonged hypoglycemia, even if not fatal, can result in permanent neurologic damage, including developmental delay, mental retardation and focal central nervous system deficits.

Management of CHI is aimed at preventing morbidity associated with repeated hypoglycemic episodes, including permanent brain damage, as well as mortality. Currently, there are no approved drugs for CHI. While limited treatment options are available, they have marginal efficacy, are poorly tolerated by patients and negatively impact quality of life. Often, severe cases of CHI are resistant to diazoxide due to the type of genetic mutation. Other drugs, such as octreotide, have been used to reduce insulin secretion but may be ineffective in maintaining normal blood sugar and may cause substantial side effects.

Pancreatectomy is an option if a solitary focal lesion in the pancreas can be identified and surgically removed, typically resulting in a cure without the need for medication or continuous feedings. However, if the disease is not localized, near-total pancreatectomy would be required. Patients who undergo near-total pancreatectomy are at high risk for developing insulin-dependent diabetes later in life. This risk increases with the extent of pancreatic removal, but the risk is significant even with conservative surgical procedures. The use of pancreatectomy oftentimes addresses CHI but creates another chronic condition, insulin-dependent diabetes.

Xeris Offering—Continuous Subcutaneous Infusion of Ready-to-Use Glucagon

If approved, we believe our ready-to-use glucagon would enable safe, continuous administration of glucagon from a pump to manage CHI. IV glucagon is routinely used in the hospital and in conjunction with IV glucose to stabilize blood glucose levels in affected infants, but the IV must be changed every 24 hours or less due to the instability of glucagon in aqueous solution. The use of glucagon has historically been limited due to the lack of a stable formulation and convenient delivery system for long-term administration, especially in the home setting where a central catheter is impractical and a gastronomy-tube is cumbersome.

We believe that the continuous subcutaneous infusion of ready-to-use glucagon, if approved, is superior to the use of off-label drugs because ready-to-use glucagon:

- Offers a direct effect of increasing glucose levels compared to indirect mechanisms of glucose control.
- Enables release of patient's excess glycogen stores.
- Avoids the side effects related to octreotide, nifedipine and diazoxide.

In addition, we believe that the continuous subcutaneous infusion of ready-to-use glucagon, if approved, is superior to the use of infused glucose because ready-to-use glucagon:

- Provides an approach to wean the patient off a central glucose line, such as an IV, to enable discharge from the hospital.
- Eliminates bloating observed with the high volume glucose infusions often required to maintain normal blood glucose levels.

Finally, we believe that the continuous subcutaneous infusion of ready-to-use glucagon, if approved, is superior to pancreatectomy, because patients may be able to avoid the development of insulin-resistant diabetes as a lifetime condition. CHI patients who progress to adolescence typically normalize or at least no longer require intensive medical management. We believe that avoiding pancreatectomy is likely the most impactful result of management of CHI with ready-to-use glucagon.

In the short-term inpatient setting, we believe our ready-to-use formulation may enable administration of glucagon from a small, wearable, infusion pump. In the long term, we believe the glucagon pump system may enable outpatient administration of glucagon for prevention of hypoglycemia. We expect most patients that are candidates for ready-to-use glucagon would use the product until mid-adolescence and transition out of the standing patient pool.

There are currently no therapeutic options indicated for treatment of CHI and current standard of care involves near-total pancreatectomy or use of multiple off-label therapeutics. We believe payors will include our ready-to-use glucagon on their formularies because CHI is a rare pediatric disease and ready-to-use glucagon has the potential to reduce time spent in the NICU, avoid expensive pancreatectomies, as well as avoid the long-term costs associated with diabetes treatment resulting from pancreatectomy. We intend to conduct additional payor research as product development progresses.

From 2015 to 2017, we were awarded $2.1 million in SBIR grants from the NIH National Institute of Diabetes and Digestive and Kidney Diseases to initiate clinical studies in infant patients with CHI.

Clinical Experience

We are currently conducting a Phase 2 proof-of-concept randomized controlled clinical trial and previously completed a number of preclinical studies in multiple species that we are leveraging for all of our chronic glucagon programs.

Ongoing Phase 2 Clinical Trial

XSGO-CH01: A Phase 2 Proof-of-Concept Study of CSI Glucagon (Continuous Subcutaneous Glucagon Infusion) to Prevent Hypoglycemia with Lower Intravenous Glucose Infusion Rates in Children up to One Year of Age with Congenital Hyperinsulinism

We are currently conducting a randomized controlled Phase 2 clinical trial at four CHI centers of excellence in the United States, with interim efficacy results from twelve subjects expected in the second half of 2018. While the study is blinded, the protocol allows physicians to use continuous subcutaneous infusion glucagon in an open-label extension phase as appropriate. During one observation, the open-label data showed use of continuous subcutaneous infusion of glucagon enabled the reduction of the IV glucose infusion rate by a clinically significant 65%. To date, continuous subcutaneous glucagon has been observed to be well-tolerated and in this clinical trial there have been no unanticipated adverse events. We expect the randomized controlled data from this clinical trial will help us to initiate the pivotal program for continuous subcutaneous infusion of glucagon, which we plan to initiate in the first half of 2019.

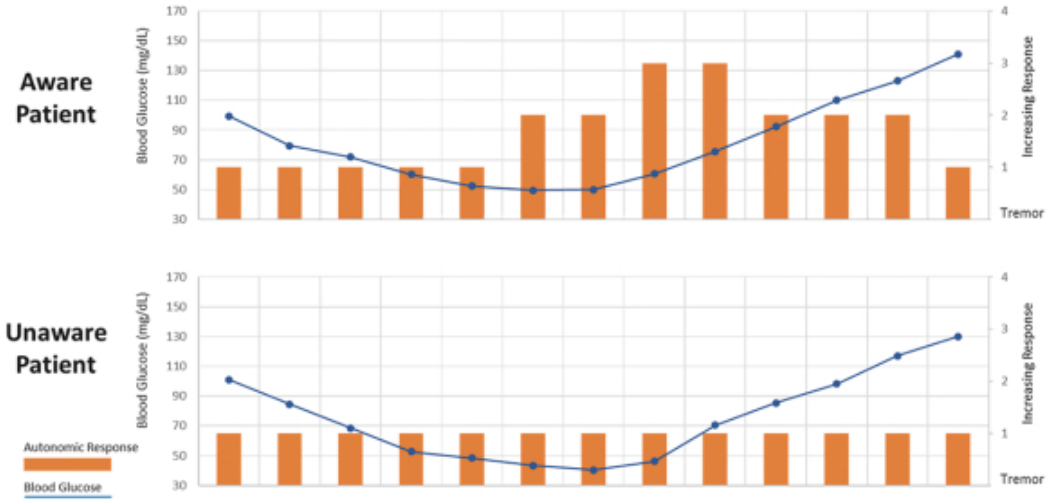
Ready-to-Use Glucagon for Hypoglycemia Associated Autonomic Failure

We are evaluating our ready-to-use glucagon for HAAF, a condition for which there are currently no therapeutic options. We expect to conduct a Phase 2a clinical trial from which we expect to obtain topline results in the second half of 2018. If clinical development is successful, we expect to submit a NDA under the 505(b)(2) pathway for FDA review. We intend to discuss the registration pathway with the FDA in the second half of 2018.

Hypoglycemia Associated Autonomic Failure Market

Typically, a decrease in plasma glucose below the normal range triggers defensive counter-regulatory responses that restore blood sugars. However, individuals with HAAF have defects in that counter-regulatory response. These individuals do not experience the physiological symptoms of worsening hypoglycemia and are at risk of being unaware of an impending severe hypoglycemic event. Chronic hypoglycemia is thought to lead to this defective glucose counter-regulation and hypoglycemia unawareness. The lack of awareness of an oncoming hypoglycemic event may result in the inability to treat or prevent it, creating a vicious cycle of recurrent hypoglycemia and possibly leading to the sudden onset of severe hypoglycemia, putting patients at risk for severe hypoglycemia, neuroglycopenia, seizure, coma and death. As such, hypoglycemia unawareness is a major concern for this subset of people with T1D and T2D and their caregivers.

The figures below depict the effect of hypoglycemic unawareness where symptoms do not signal corresponding blood glucose.



It has been shown that the autonomic response and awareness of hypoglycemia can be restored with scrupulous avoidance of hypoglycemia for two to three weeks. However, this restoration can currently only be achieved with intensive diet and behavior modification, which we believe results in low participation and success rates.

Based on our research, we estimate that approximately 20% of people with T1D and 14% of people with T2D (primarily those on insulin) have HAAF. In primary market research, physicians indicated approximately half of patients with some form of HAAF are moderately to severely affected. However due to the need for better diagnosis procedures and guidelines for HAAF, the physicians surveyed also reported that they currently expect approximately 40% and 50% under-diagnosis rates of HAAF in people with T1D and T2D, respectively. We believe there is a critical unmet need for a therapeutic treatment for insulin deficient diabetes patients with HAAF.

Xeris Offering—Continuous Subcutaneous Infusion of Ready-to-Use Glucagon

We are developing a novel continuous subcutaneous glucagon infusion system incorporating our ready-to-use, liquid-stable glucagon formulation with an infusion pump. Continuous subcutaneous infusion of ready-to-use glucagon could be used to avoid hypoglycemia during a three- to four-week period to restore autonomic response and hypoglycemia awareness. Combined with patient training, the treatment may result in a significant long-term

reduction in hypoglycemia rates post-intervention, particularly of severe hypoglycemia. If approved, we believe our ready-to-use glucagon has the potential to be the first product designed to prevent hypoglycemia for extended periods of time to enable re-establishment of hypoglycemia awareness and treat HAAF. We believe our ready-to-use glucagon, if approved, could provide substantial therapeutic benefit to patients who suffer from severe hypoglycemic events and are taken to the emergency room multiple times per year.

The use of glucagon to treat this condition has been hampered due to the lack of a room-temperature stable liquid glucagon formulation and a convenient delivery system for continuous administration. Attempts at off-label treatment with current emergency glucagon products require reconstitution of freeze-dried glucagon powder and the drug chamber and infusion set would likely require replacement at least every 24 hours due to the instability of glucagon in aqueous solution.

There are currently no therapeutic treatment options for HAAF. However, since at least some payors currently cover diabetes coaching and training services conducted by certified diabetes educators, which are often used to help treat or manage HAAF, we believe payors will cover ready-to-use glucagon if we can demonstrate reversal of hypoglycemia unawareness. We intend to conduct additional payor research as product development progresses.

Clinical Experience

We expect to conduct a Phase 2a proof-of-concept randomized controlled clinical trial and have successfully completed a number of preclinical studies in multiple species that we are leveraging in our other chronic glucagon programs.

Ongoing Phase 2 Clinical Trial

XSGO-AF01: Fixed Rate Continuous Subcutaneous Glucagon Infusion (CSGI) vs Placebo in Type 1 Diabetes Mellitus Patients with Recurrent Severe Hypoglycemia: Effects On Counter Regulatory Responses to Insulin Induced Hypoglycemia

We expect to conduct a randomized, controlled, Phase 2a clinical trial at four sites in the United States, with topline results from 40 subjects expected in the second half of 2018. We believe that our ready-to-use glucagon has the potential to be the first treatment option to prevent the occurrence of hypoglycemia for an entire month in people with T1D. In addition, we seek to evaluate whether epinephrine response and hypoglycemic awareness are restored following the course of treatment and, if so, the duration of the restored response. We expect data from this Phase 2a clinical trial to help outline pivotal study endpoints and enable an FDA discussion in the second half of 2018.

Ready-to-Use Glucagon for Exercise-Induced Hypoglycemia in Diabetes

We are evaluating our ready-to-use glucagon and plan to initiate additional Phase 2 clinical development in the second half of 2018 for EIH, for which there are currently no approved therapies. We intend to discuss the registration pathway with FDA in 2018.

Exercise-Induced Hypoglycemia in Diabetes Market

Exercise-associated hypoglycemia and the complexity of management aimed at its prevention represent major barriers to the adoption of regular physical activity for many individuals with diabetes treated with insulin. Although carbohydrate ingestion, including oral glucose tablets, can help ameliorate hypoglycemia, patients' carbohydrate requirements can be as high as 1 gram per minute of exercise, which can be counterproductive to weight management. Aerobic exercise, in particular, often results in a significant drop in blood glucose concentrations. Qualitative feedback has shown that the challenges in current exercise management strategies and the need to consume carbohydrates is frustrating and may lead to minimized or complete omission of exercise for many patients. People with diabetes who use insulin are at risk of EIH. We believe there is a subset of these individuals that exercises at least three times per week per current guidelines, and who could potentially use a mini-dose of ready-to-use glucagon each time they exercised. If approved, our ready-to-use glucagon would represent a significant market opportunity in the treatment for EIH.

Xeris Offering—Mini-doses of Ready-to-Use Glucagon for Treatment of EIH

We are developing a mini-dose of our ready-to-use, liquid-stable glucagon and have observed appropriate dose-dependent PK and PD responses when administered subcutaneously at doses of 75, 150 and 300 µg in adults with T1D. Our previous proof-of-concept study demonstrated that 150 µg of this mini-dose glucagon corrected non-severe hypoglycemia to a substantially similar degree as oral glucose tablets that are commonly used during exercise in correcting non-severe hypoglycemia in adults with T1D, while enabling avoidance of unnecessary caloric intake.

Modestly increasing glucagon levels at the start of exercise has previously not been possible, since current commercially available glucagon preparations are unstable in aqueous solution. They exist as a lyophilized powder that must be reconstituted in diluent immediately prior to injection and are only indicated at an emergency dose of 1 mg for rescue from severe hypoglycemia. Despite the challenging reconstitution process, there has been significant documented off-label use of the current glucagon kits.

We have been awarded over $3.0 million in grants from organizations such as the Leona M. and Harry B. Helmsley Charitable Trust and the NIH National Institute of Diabetes and Digestive and Kidney Diseases, and we have worked with institutions including the Joslin Diabetes Center and the University of Pennsylvania for clinical development of our mini-dose glucagon product candidate.

Clinical Experience

We have successfully completed a number of preclinical studies in multiple species to support the safety of mini-dose glucagon, as well as three Phase 2 safety and efficacy clinical trials in subjects with T1D.

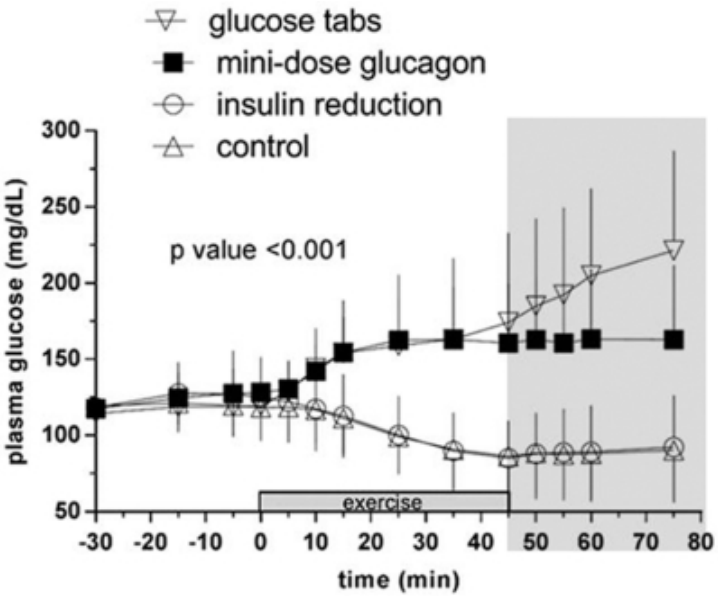
Phase 2 Clinical Trials

XSMP-203: The Use of Mini-Dose Glucagon to Prevent Exercise-Induced Hypoglycemia in Type 1 Diabetes

Based on our previous dose-finding trials (XSMP-201 and XSMP-202), we initiated a third Phase 2 clinical trial of mini-dose glucagon for EIH. The glycemic response of 150 µg mini-dose glucagon was compared against current standards of care, including basal insulin reduction and glucose tablet consumption, to mitigate exercise-associated hypoglycemia. In particular, this was a four-session, randomized crossover trial involving 15 adults with T1D who exercised at 50-55% VO2max for 45 minutes under conditions of no intervention (control), 50% basal insulin reduction, 40 g oral glucose tablets, or 150 µg subcutaneous mini-dose glucagon, all administered five minutes before exercise.

During the exercise sessions conducted in this study, plasma glucose increased slightly with mini-dose glucagon compared to a decrease with control and insulin reduction, as depicted in the figure below. Plasma glucose increased more greatly with glucose tablets. Hypoglycemia (<70 mg/dL) was experienced by six subjects during control, five during insulin reduction and none with glucose tablets or mini-dose glucagon; however, five subjects experienced hyperglycemia (³250 mg/dL) with glucose tablets and one with mini-dose glucagon. The study was well-controlled, as insulin levels were not different among sessions, while glucagon levels increased only in the mini-dose glucagon arm, as expected.

In a Phase 2a randomized, controlled clinical study, T1D subjects (n=16) administered mini-dose glucagon completed a 45-minute exercise session without adjusting basal insulin or ingesting glucose tabs (calories).



The Phase 2a study concluded that mini-dose glucagon (150 µg) may have the potential to prevent EIH in adults with T1D. In addition, mini-dose glucagon may be more effective at preventing EIH than insulin reduction that was associated with a similar rate and magnitude of hypoglycemia as no intervention. Moreover, while mini-dose glucagon was as effective as glucose tablets for preventing exercise-induced hypoglycemia, mini-dose glucagon may result in less post-intervention hyperglycemia than ingestion of carbohydrates and avoids the consumption of unnecessary calories. The results of this study were presented in 2017 at the American Diabetes Association' Scientific Sessions, the European Association for the Study of Diabetes Annual Meeting and have been accepted for publication.

Ready-to-Use Glucagon for Bi-Hormonal Artificial Pancreas Closed-Loop Systems

We are evaluating our ready-to-use glucagon for use in a bi-hormonal artificial pancreas closed-loop system. We intend to initiate a Phase 2a proof-of-concept randomized three-way crossover clinical trial in mid-2018 to evaluate the utility of such a system.

Insulin-Dependent Diabetes Market

Continuous subcutaneous insulin infusion from a pump, or CSII, has been shown to improve glycemic control for people with diabetes. However, data from clinical trials indicate that even when used in closed-loop, insulin analogs, pumps and continuous glucose monitoring, or CGM, have generally modest effects in reducing hypoglycemic events because they are capable of only delivering or stopping delivery of insulin. As such, CSII users are still forced to ingest carbohydrate containing foods, over-the-counter glucose products, or utilize emergency glucagon products to counteract hypoglycemia.

We believe the quality of life for patients could be significantly improved by offering a bi-hormonal artificial pancreas that delivers both insulin and glucagon. While significant work has been done developing extensive algorithms and control systems needed for the bi-hormonal pump a key limitation has been the lack of a glucagon formulation that does not require reconstitution and is stable for at least three days in a pump chamber. We believe the utilization of our ready-to-use glucagon in a bi-hormonal system has the potential to minimize the incidence of hypoglycemia, improve patient quality of life, and drive higher rates of adoption of CSII systems.

All patients utilizing an intensive insulin regimen are candidates for a bi-hormonal pump system. In the United States, this includes all 1.3 million people with T1D as well as approximately 500,000 people with T2D. Of this combined population, approximately one-third is currently utilizing CSII therapy.

Xeris Offering—Liquid-Stable Ready-To-Use Glucagon for a Bi-Hormonal Artificial Pancreas

A liquid-stable glucagon formulation is a critical component to facilitate a bi-hormonal artificial pancreas. Our ready-to-use glucagon has demonstrated stability at body temperature in a patch pump chamber. Collaborators in our bi-hormonal artificial pancreas program include endocrinologists at Oregon Health & Science University (OHSU). In addition, numerous researchers have expressed interest in using our ready-to-use glucagon in research studies with novel bi-hormonal pump systems.

To support development of our ready-to-use glucagon for this application, we have been awarded approximately $1.9 million in funding from organizations such as the NIH National Institute of Diabetes and Digestive and Kidney Diseases and the JDRF.

Clinical Experience

We have successfully completed a number of preclinical studies in multiple species a Phase 2a dose-ranging glucagon PK/PD study, and are currently conducting a Phase 2a proof-of-concept randomized clinical trial.

Ongoing Phase 2 Clinical Trial

G18002: A Randomized, Three-Way, Cross-Over Outpatient Study to Assess the Efficacy of a Dual-Hormone Closed-Loop System with XeriSol Glucagon vs Closed-Loop System with Insulin Only vs a Predictive Low Glucose Suspend System

We intend to initiate a single center, randomized, three-way, crossover trial in mid-2018 to compare the glucose control resulting from the use of a bi- and single-hormone closed-loop system as compared to a predictive low glucose suspend system. The bi-hormonal closed-loop system is designed to reduce the time spent in the hypoglycemic range and increase the time spent in the target range, even after exercise, as compared to an insulin

only closed-loop system and a predictive low glucose suspend system. We intend to enroll 19 subjects in this clinical trial, with results expected in the first half of 2019.

Preclinical Programs

Ready-to-Use Diazepam

Leveraging our XeriSol formulation technology, we are developing a ready-to-use diazepam formulation for the treatment of ARS in patients with epilepsy. Approximately 160,000 people in the United States experience ARS. Immediate treatment of epileptic seizures is critical to avoid increased risks of morbidity and mortality, including permanent neuronal damage, behavioral abnormalities and an increased probability in the need for life-long care.

Injectable and rectal gel formulations of diazepam are the current standard of care for the emergency treatment of epileptic seizures. In 2017, these diazepam formulations generated total sales of approximately $127 million, of which DiaStat Rectal Gel and its generic formulations comprised $83 million. DiaStat requires a multi-step procedure which makes it more difficult to administer while a patient is experiencing seizures. Additionally, the use of rectal gel in both middle school children and young adults with ARS is reduced because of social stigma. These characteristics are limitations that may diminish the specific demand for rectal diazepam products. Due to this limitation, we believe the market for diazepam in ARS is underpenetrated. We believe that a ready-to-use diazepam rescue pen would improve patient quality of life and drive adoption of diazepam to treat ARS.

Our ready-to-use diazepam rescue pen has demonstrated rapid onset and high bioavailability in preclinical models. We received orphan drug designation for our product candidate from the FDA and were awarded grants totaling $1.5 million from the Epilepsy Foundation and the NIH for this program. If approved, we believe that our ready-to-use diazepam rescue pen would become the standard of care for the treatment of ARS. We plan to conduct a Phase 1 clinical trial of our ready-to-use diazepam rescue pen in the second half of 2018. If results are positive, we plan to initiate a Phase 2 clinical trial in the first half of 2019.

Pram-Insulin

Leveraging our XeriSol platform, we are developing a ready-to-use fixed dose combination of insulin and pramlintide to be delivered via a vial and syringe. Despite advances in the delivery and pharmacology of insulin, most people with T1D are still unable to achieve glycemic targets with insulin therapy alone, particularly after mealtime. Pramlintide acetate (Symlin), a synthetic analog of the hormone amylin, has been approved by the FDA, for use by people with T1D and T2D who use mealtime insulin. Pramlintide is indicated as an adjunct treatment for people who use mealtime insulin therapy and who have failed to achieve glucose control despite optimal insulin therapy. At present, pramlintide must be administered as a separate injection, doubling the number of daily injections for the patient, which we believe has limited the market.

Our fixed dose combination is designed to reduce the number of injections as the pramlintide would not require a separate mealtime injection. If approved, we believe the potential target population for our fixed dose combination may total 350,000 to 390,000 patients. We plan to open an Investigational New Drug, or IND, application for our fixed dose combination of insulin and pramlintide in the second half of 2018.

Manufacturing and Supply

We currently contract with third parties for the manufacture, assembly, testing, packaging, storage and distribution of our products. In our experience, third party contract manufacturing organizations, or CMOs, are generally cost-efficient, high quality and reliable and we currently have no plans to build our own manufacturing or distribution infrastructure. Our technical team has extensive pharmaceutical development, manufacturing, analytical, quality and distribution experience; and they are qualified and capable of managing supply chain operations across multiple CMOs. Our Quality System, SOP’s and CMO interfaces are designed to promote cGMP compliance and effective regulatory communications. We selected our CMOs for specific competencies and they have met our development, manufacturing, quality and regulatory requirements and were all involved in manufacturing our clinical supplies and commercial registration batches.

Glucagon is the active pharmaceutical ingredient, or API, used in our Glucagon Rescue Pen and our other chronic hypoglycemia products in development that utilize ready-to-use glucagon. We intend to use Bachem Americas, Inc.,

or Bachem, as our primary commercial source for API. Bachem holds a U.S. drug master file for glucagon produced at its facility in Switzerland and its manufacturing process is fully validated. We have entered into a non-exclusive supply agreement with Bachem. While we believe that Bachem has sufficient capacity to satisfy our long-term requirements for our Glucagon Rescue Pen and other pipeline products utilizing ready-to-use glucagon, we are actively engaged in developing a second API source. An alternate supplier has successfully produced one full scale commercial batch and we intend to complete development work and register this supplier as a qualified source shortly after NDA approval.

Manufacturing drug product for our Glucagon Rescue Pen requires an aseptic fill/finish facility capable of handling solvents and a cyclic olefinic polymer syringe. Pyramid Laboratories, Inc., or Pyramid, has been actively involved in the development of our product candidates and we intend to use its facility in California to be our primary source for drug product. We intend to enter into a non-exclusive supply agreement with Pyramid. While we believe that Pyramid has sufficient capacity to satisfy our demand requirements for at least three to five years, we are evaluating alternate sourcing options.

The auto-injector used to deliver drug product in our Glucagon Rescue Pen is a proprietary multi-product device platform developed by SHL Pharma, LLC, or SHL Pharma. We entered into a joint development agreement in January 2016 to develop an auto-injector suitable for our Glucagon Rescue Pen and we are in the final stages of assembly equipment process validation. SHL Pharma produces device sub-assemblies in company-owned facilities in Taiwan and performs final drug product/device assembly operations at its facility in Florida. We intend to enter into a non-exclusive supply agreement with SHL Pharma. We intend to source the device from a single supplier over the life of the product.

We believe that a number of CMOs can provide suitable secondary packaging services for our Glucagon Rescue Pen and we intend to enter into one or more commercial supply agreements. A number of third party logistic providers can provide commercial order processing and finished good distribution services to U.S. wholesale customers and we expect to enter into one or more commercial distribution agreements in 2018.

Competition

Our industry is characterized by intense competition and a strong emphasis on proprietary products. We believe the key competitive factors that will affect the development and commercial success of our product candidates include likelihood of successful dose delivery, ease of administration, therapeutic efficacy, safety and tolerability profiles and cost. While we believe that our product and product candidate platform, development expertise and scientific knowledge provide us with competitive advantages, we face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies. Many of our potential competitors have substantially greater financial, technical and human resources than we do, as well as more experience in the development of product candidates, obtaining FDA and other regulatory approvals of products, and the commercialization of those products.

Two emergency glucagon products are currently available to treat severe hypoglycemia: Eli Lilly's GEK and Novo Nordisk's GlucaGen. Each kit is sold as a vial of lyophilized, glucagon powder with an exposed syringe/needle that contains a liquid diluent. The glucagon powder must be combined with the liquid diluent at the time of use and drawn into a syringe in accordance with complex multi-step reconstitution and dose calibration procedure. Additionally, once reconstituted, the glucagon must be used immediately because once the lyophilized glucagon is combined with water, the solution becomes unstable and can fibrillate, rendering it inactive and potentially toxic. We believe that the drawbacks of currently marketed products and the lack of conversations regarding glucagon limit their adoption. In addition to the currently marketed GEK and Novo Nordisk's GlucaGen, we are currently aware of several product candidates that are expected to compete with our Glucagon Rescue Pen, if approved. Eli Lilly is developing an intranasal glucagon dry powder. While healthcare professionals as well as patients and caregivers believe both our Glucagon Rescue Pen and the intranasal dry powder are easy to use, they have expressed concern that the full dose of glucagon may not be delivered via intranasal absorption. Of note, in a Phase 1 clinical trial, a pediatric subject failed to achieve a $\geq$25 mg/dL rise in glucose because he blew his nose immediately after a 2 mg intranasal dose administration.

In our market research, respondents ranked the importance of successful full-dose delivery and ability to tell if the full dose was administered significantly higher than the needleless attribute. In our market research, caregivers and

people with diabetes associated our Glucagon Rescue Pen with efficacious and successful dose delivery, as well as ease of ability to tell the full dose was administered. Similarly, healthcare professionals indicated that one of the most appealing attributes of our Glucagon Rescue Pen is the greater likelihood of successful dose delivery.

In addition, Zealand Pharma is developing an SC dasiglucagon, a stable analog of human glucagon, in an auto-injector. Zealand's dasiglucagon is currently in Phase 3 development and is being studied in adults only. Data released to-date indicate that Zealand's dasiglucagon will have a room-temperature stable shelf-life up to 12 months.

Additional Phase 1 candidates for severe hypoglycemia include Adocia's BioChaperone Glucagon and Novo Nordisk's NNC9204-1513.

While there are currently no FDA approved products indicated for treatment of PBH, we are aware of a number of product candidates in development. For example, Eiger Biopharma is developing its product candidate exendin 9-39, a glucagon-like peptide-1 receptor antagonist, to be administered subcutaneously, which is currently in Phase 2 development.

Currently, there are no approved drugs for CHI and limited treatment options are available, but we are aware of several product candidates in development. For example, Rezolute is developing RZ358, an IV administered fully human antibody that inhibits the effects of elevated insulin via allosteric modulation of the insulin receptor, which is currently in Phase 2 development. In addition, Zealand Pharma is developing an SC infusion of dasiglucagon, which is currently in Phase 3 clinical development.

There are currently no approved products for the treatment of HAAF. Many other therapeutic compounds have been investigated in academic clinical research for the indirect prevention of hypoglycemia. While none of these interventions have been successful to date, this research shows there is considerable interest in restoring hypoglycemia awareness and HAAF.

Currently, the first-line emergency treatment of epileptic seizures in the outpatient setting is the administration of diazepam in a non-sterile rectal gel marketed by Valeant Pharmaceuticals as DiaStat. We are also aware of several product candidates in development for the treatment of ARS in patients with epilepsy. For example, Neurelis is developing NRL-1, an intranasal formulation of diazepam, for which Neurelis has announced an intention to file a NDA in 2018. In addition, Aquestive is developing AQST-203, a buccal soluble formulation of diazepam, which is currently in Phase 3 development.

Intellectual Property

Proprietary protection

Our commercial success depends in part on our ability to obtain and maintain proprietary protection for our drug candidates, manufacturing and process discoveries and other know-how, to operate without infringing the proprietary rights of others, and to prevent others from infringing on our proprietary rights. We have been building and continue to build our intellectual property portfolio relating to our product candidates and technology. Our policy is to seek to protect our proprietary position by, among other methods, filing U.S. and certain foreign patent applications related to our proprietary technology, inventions and improvements that are important to the development and implementation of our business. We also intend to rely on trade secrets, know-how, continuing technological innovation and potential in-licensing opportunities to develop and maintain our proprietary position. We cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us or our partners in the future will be commercially useful in protecting our technology.

Patent rights

As of March 15, 2018, we owned 66 issued patents globally, of which 12 are issued U.S. patents. As of March 15, 2018, we owned over 60 patent applications pending globally, of which 12 are patent applications pending in the United States. As of March 15, 2018, three of our U.S. issued patents have pending continuations or divisionals in process which may provide additional intellectual property protection if issued as U.S. patents. Our issued patents expire between December 22, 2023 and April 22, 2036, subject to payment of required maintenance fees,

annuities and other charges. The subset of our patent estate directed specifically to our ready-to-use glucagon consists of one U.S. composition of matter patent that is scheduled to expire in year 2036, one pending U.S. patent application and an international patent application. Patents that issue based on the foregoing international application would expire in year 2036.

Trade secret and other protection

In addition to patented intellectual property, we also rely on trade secrets and proprietary know-how to protect our technology and maintain our competitive position, especially when we do not believe that patent protection is appropriate or can be obtained. Our policy is to require each of our employees, consultants and advisors to execute a confidentiality and inventions assignment agreement before beginning their employment, consulting or advisory relationship with us. The agreements generally provide that the individual must keep confidential and not disclose to other parties any confidential information developed or learned by the individual during the course of the individual's relationship with us except in limited circumstances. These agreements generally also provide that we shall own all inventions conceived by the individual in the course of rendering services to us.

Other intellectual property rights

We file trademark applications and pursue registrations in the United States and abroad when appropriate. We own a registered trademark for the mark Xeris Pharmaceuticals. We also own pending trademark applications for XERISOL, XERIJECT and HYPOPEN in the United States; and XERISOL AND XERIJECT in the EU for use in connection with our pharmaceutical research and development as well as products, as well as trade names that could be used with our potential products. The USPTO has allowed the following trademark applications which are awaiting Statements of Use: XERISOL, XERIJECT, HYPOPEN and GLUCAPEN.

From time to time, we may find it necessary or prudent to obtain licenses from third-party intellectual property holders.

Government Regulation

United States Drug Development

In the United States, the FDA regulates drugs, medical devices and combinations of drugs and devices, or combination products, under the federal Food, Drug, and Cosmetic Act, or FDCA, and its implementing regulations. Drugs are also subject to other federal, state and local statutes and regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject an applicant to administrative or judicial sanctions. These sanctions could include, among other actions, the FDA's refusal to approve pending applications, withdrawal of an approval, a clinical hold, untitled or warning letters, requests for voluntary product recalls or withdrawals from the market, product seizures, total or partial suspension of production or distribution injunctions, fines, refusals of government contracts, restitution, disgorgement, or civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us.

Our product candidates are subject to regulation as combination products, which means that they are composed of both a drug product and device product. If marketed individually, each component would be subject to different regulatory pathways and reviewed by different Centers within the FDA. A combination product, however, is assigned to a Center that will have primary jurisdiction over its regulation based on a determination of the combination product's primary mode of action, which is the single mode of action that provides the most important therapeutic action. In the case of our product candidates, the primary mode of action is attributable to the drug component of the product, which means that the FDA's Center for Drug Evaluation and Research has primary jurisdiction over the premarket development, review and approval of our product candidates. Accordingly, we plan to investigate our products through the IND framework and seek approval through the NDA pathway. Based on our discussions with the FDA to date, we do not anticipate that the FDA will require a separate medical device authorization for the device, but this could change during the course of its review of any marketing application that we may submit. The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- completion of extensive pre-clinical laboratory tests, animal studies and formulation studies in accordance with applicable regulations, including the FDA's Good Laboratory Practice, or GLP, regulations;

- submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, representing each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with an applicable IND and other clinical study related regulations, sometimes referred to as good clinical practices, or GCPs, to establish the safety and efficacy of the proposed drug for its proposed indication;
- submission to the FDA of a NDA;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities at which the product, or components thereof, are produced to assess compliance with the FDA's current good manufacturing practice requirements, or cGMP;
- potential FDA audit of the clinical trial sites that generated the data in support of the NDA and payment of associated user fees;
- review by an FDA advisory committee, where appropriate or if applicable;
- FDA review and approval of the NDA prior to any commercial marketing or sale; and
- compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, and the potential requirement to conduct post-approval studies.

Once a pharmaceutical product candidate is identified for development, it enters the pre-clinical testing stage. Pre-clinical tests include laboratory evaluations of product chemistry, toxicity, formulation and stability, as well as animal studies. An IND sponsor must submit the results of the pre-clinical tests, together with manufacturing information, analytical data and any available clinical data or literature, to the FDA as part of the IND. An IND is an exemption from the FDCA that allows an unapproved product to be shipped in interstate commerce for use in an investigational clinical trial and a request for FDA authorization to administer such investigational product to humans. The sponsor must also include a protocol detailing, among other things, the objectives of the initial clinical trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated if the initial clinical trial lends itself to an efficacy evaluation. Some pre-clinical testing may continue even after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA raises concerns or questions related to a proposed clinical trial and places the trial on a clinical hold within that 30-day period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. Clinical holds also may be imposed by the FDA at any time before or during clinical trials due to safety concerns or non-compliance, and may be imposed on all drug products within a certain class of drugs. The FDA also can impose partial clinical holds, for example, prohibiting the initiation of clinical trials of a certain duration or for a certain dose.

All clinical trials must be conducted under the supervision of one or more qualified investigators in accordance with GCP regulations. These regulations include the requirement that all research subjects provide informed consent in writing before their participation in any clinical trial. Further, an institutional review board, or IRB, must review and approve the plan for any clinical trial before it commences at any institution, and the IRB must conduct continuing review and reapprove the study at least annually. An IRB considers, among other things, whether the risks to individuals participating in the clinical trial are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the information regarding the clinical trial and the consent form that must be provided to each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed.

Each new clinical protocol and any amendments to the protocol must be submitted for FDA review, and to the IRBs for approval. Protocols detail, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety.

Human clinical trials are typically conducted in three sequential phases that may overlap or be combined:

- Phase 1. The product is initially introduced into a small number of healthy human subjects or patients and tested for safety, dosage tolerance, absorption, metabolism, distribution and excretion and, if possible, to gain early evidence on effectiveness. In the case of some products for severe or life-threatening diseases,

especially when the product is suspected or known to be unavoidably toxic, the initial human testing may be conducted in patients.

- Phase 2. Involves clinical trials in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage and schedule.
- Phase 3. Clinical trials are undertaken to further evaluate dosage, clinical efficacy and safety in an expanded patient population at geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk/benefit relationship of the product and provide an adequate basis for product labeling.

Post-approval trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication. In certain instances, the FDA may mandate the performance of Phase 4 trials. Companies that conduct certain clinical trials also are required to register them and post the results of completed clinical trials on a government-sponsored database, such as ClinicalTrials.gov in the United States, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

Progress reports detailing the results of the clinical trials, among other information, must be submitted at least annually to the FDA, and written IND safety reports must be submitted to the FDA and the investigators for serious and unexpected adverse events, findings from other studies that suggest a significant risk to humans exposed to the product, findings from animal or in vitro testing that suggest a significant risk to human subjects, and any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, if at all. The FDA or the clinical trial sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the product has been associated with unexpected serious harm to patients. Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board or committee. This group provides authorization for whether a trial may move forward at designated check points based on access to certain data from the study. The clinical trial sponsor may also suspend or terminate a clinical trial based on evolving business objectives and/or competitive climate.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the product and finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the manufacturer must develop methods for testing the identity, strength, quality and purity of the final product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

NDA and FDA Review Process

The results of product development, pre-clinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests conducted on the drug, proposed labeling and other relevant information, are submitted to the FDA as part of a NDA for a new drug, requesting approval to market the product. Under federal law, the submission of most NDAs is subject to an application user fee, which for federal fiscal year 2018 is $2,421,495 for a NDA requiring clinical data. The sponsor of an approved NDA is also subject to an annual program fee, which for fiscal year 2018 is $304,162. Certain exceptions and waivers are available for some of these fees, such as an exception from the application fee for products with orphan designation and a waiver for certain small businesses.

The FDA reviews all NDAs submitted before it accepts them for filing and may request additional information rather than accepting a NDA for filing. The FDA typically makes a decision on accepting a NDA for filing within 60 days of receipt. The decision to accept the NDA for filing means that the FDA has made a threshold determination that the application is sufficiently complete to permit a substantive review. Under the goals and policies agreed to by the FDA under the Prescription Drug User Fee Act, or PDUFA, the FDA's goal to complete its substantive review of a

standard NDA and respond to the applicant is ten months from the receipt of the NDA. The FDA does not always meet its PDUFA goal dates, and the review process is often significantly extended by FDA requests for additional information or clarification and may go through multiple review cycles.

After the NDA submission is accepted for filing, the FDA reviews the NDA to determine, among other things, whether the proposed product is safe and effective for its intended use, and whether the product is being manufactured in accordance with cGMPs to assure and preserve the product's identity, strength, quality and purity. The FDA may refer applications for novel drug products or drug products which present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. The FDA will likely re-analyze the clinical trial data, which could result in extensive discussions between the FDA and us during the review process. The review and evaluation of a NDA by the FDA is extensive and time consuming and may take longer than originally planned to complete, and we may not receive a timely approval, if at all.

Before approving a NDA, the FDA will conduct a pre-approval inspection of the manufacturing facilities for the new product to determine whether they comply with cGMPs. The FDA will not approve the product unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. In addition, before approving a NDA, the FDA may also audit data from clinical trials to ensure compliance with GCP requirements. After the FDA evaluates the application, manufacturing process and manufacturing facilities, it may issue an approval letter or a Complete Response Letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. A Complete Response Letter indicates that the review cycle of the application is complete and the application will not be approved in its present form. A Complete Response Letter usually describes all the specific deficiencies in the NDA identified by the FDA. The Complete Response Letter may require additional clinical data and/or an additional pivotal Phase 3 clinical trial(s), and/or other significant and time-consuming requirements related to clinical trials, nonclinical studies or manufacturing. If a Complete Response Letter is issued, the applicant may either resubmit the NDA, addressing all the deficiencies identified in the letter, or withdraw the application. Even if such data and information are submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. Data obtained from clinical trials are not always conclusive, and the FDA may interpret data differently than we interpret the same data.

There is no assurance that the FDA will ultimately approve a product for marketing in the United States, and we may encounter significant difficulties or costs during the review process. If a product receives marketing approval, the approval may be significantly limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling or may condition the approval of the NDA on other changes to the proposed labeling, development of adequate controls and specifications, or a commitment to conduct post-market testing or clinical trials and surveillance to monitor the effects of approved products. For example, the FDA may require Phase 4 clinical trials to further assess drug safety and effectiveness and may require testing and surveillance programs to monitor the safety of approved products that have been commercialized. The FDA may also place other conditions on approvals including the requirement for a risk evaluation and mitigation strategy, or REMS, to assure the safe use of the drug. If the FDA concludes a REMS is needed, the sponsor of the NDA must submit a proposed REMS; the FDA will not approve the NDA without an approved REMS, if required. A REMS could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. Any of these limitations on approval or marketing could restrict the commercial promotion, distribution, prescription or dispensing of products. Product approvals may be withdrawn for non-compliance with regulatory requirements or if problems occur following initial marketing.

Section 505(b)(2) NDAs

NDAs for most new drug products are based on two full clinical studies which must contain substantial evidence of the safety and effectiveness of the proposed new product for the proposed use. These applications are submitted under Section 505(b)(1) of the FDCA. The FDA is, however, authorized to approve an alternative type of NDA under

Section 505(b)(2) of the FDCA. This type of application allows the applicant to rely, in part, on the FDA's previous findings of safety and effectiveness for a similar product, or published literature. Specifically, Section 505(b)(2) applies to NDAs for a drug for which the investigations relied upon by the applicant for approval of the application "were not conducted by or for the applicant and for which the applicant has not obtained a right of reference or use from the person by or for whom the investigations were conducted."

Thus, Section 505(b)(2) authorizes the FDA to a NDA based on safety and effectiveness data that were not developed by the applicant. NDAs filed under Section 505(b)(2) may provide an alternate and potentially more expeditious pathway to FDA approval for new or improved formulations or new uses of previously approved products. If the 505(b)(2) applicant can establish that reliance on the FDA's previous approval is scientifically appropriate, the applicant may eliminate the need to conduct certain pre-clinical or clinical studies of the new product. The FDA may also require companies to perform additional studies or measurements to support the change from the approved product. The FDA may then approve the new drug candidate for all or some of the labeled indications for which the referenced product has been approved, as well as for any new indication sought by the Section 505(b)(2) applicant.

Abbreviated New Drug Applications for Generic Drugs

In 1984, with passage of the Hatch-Waxman Amendments to the FDCA, Congress established an abbreviated regulatory scheme authorizing the FDA to approve generic drugs that are shown to contain the same active ingredients as, and to be bioequivalent to, drugs previously approved by the FDA pursuant to NDAs. To obtain approval of a generic drug, an applicant must submit an abbreviated new drug application, or ANDA, to the agency. An ANDA is a comprehensive submission that contains, among other things, data and information pertaining to the active pharmaceutical ingredient, bioequivalence, drug product formulation, specifications and stability of the generic drug, as well as analytical methods, manufacturing process validation data and quality control procedures. ANDAs are "abbreviated" because they generally do not include preclinical and clinical data to demonstrate safety and effectiveness. Instead, in support of such applications, a generic manufacturer may rely on the pre-clinical and clinical testing previously conducted for a drug product previously approved under a NDA, known as the reference-listed drug, or RLD.

Specifically, in order for an ANDA to be approved, the FDA must find that the generic version is the same as the RLD with respect to the active ingredients, the route of administration, the dosage form, the strength of the drug and the conditions of use of the drug. At the same time, the FDA must also determine that the generic drug is "bioequivalent" to the innovator drug. Under the statute, a generic drug is bioequivalent to a RLD if the rate and extent of absorption of the drug do not show a significant difference from the rate and extent of absorption of the listed drug. Upon approval of an ANDA, the FDA indicates whether the generic product is "therapeutically equivalent" to the RLD in its publication "Approved Drug Products with Therapeutic Equivalence Evaluations," also referred to as the "Orange Book." Physicians and pharmacists consider a therapeutic equivalent generic drug to be fully substitutable for the RLD. In addition, by operation of certain state laws and numerous health insurance programs, the FDA's designation of therapeutic equivalence often results in substitution of the generic drug without the knowledge or consent of either the prescribing physician or patient.

Under the Hatch-Waxman Amendments, the FDA may not approve an ANDA until any applicable period of non-patent exclusivity for the RLD has expired. The FDCA provides a period of five years of non-patent data exclusivity for a new drug containing a new chemical entity. For the purposes of this provision, a new chemical entity, or NCE, is a drug that contains no active moiety, which is the molecule or ion responsible for the physiological or pharmacological action of the drug substance, that has previously been approved by the FDA in any other NDA. In cases where such NCE exclusivity has been granted, an ANDA may not be filed with the FDA until the expiration of five years unless the submission is accompanied by a Paragraph IV certification, which states that the proposed drug will not infringe the already approved product's listed patents or that such patents are invalid or unenforceable, in which case the applicant may submit its application four years following the original product approval.

The FDCA also provides for a period of three years of exclusivity if the NDA includes reports of one or more new clinical investigations, other than bioavailability or bioequivalence studies, that were conducted by or for the applicant and are essential to the approval of the application. This three-year exclusivity period often protects changes to a previously approved drug product, such as a new dosage form, route of administration, combination or

indication. Three-year exclusivity would be available for a drug product that contains a previously approved active moiety, provided the statutory requirement for a new clinical investigation is satisfied. Unlike five-year NCE exclusivity, an award of three-year exclusivity does not block the FDA from accepting ANDAs seeking approval for generic versions of the drug as of the date of approval of the original drug product. The FDA typically makes decisions about awards of data exclusivity shortly before a product is approved.

Pursuant to the Food and Drug Administration Reauthorization Act of 2017, the FDA must establish a priority review track for certain generic drugs, requiring the FDA to review a drug application within eight (8) months for a drug that has three (3) or fewer approved drugs listed in the Orange Book and is no longer protected by any patent or regulatory exclusivities, or is on the FDA's drug shortage list. The new legislation also authorizes FDA to expedite review of ''competitive generic therapies'' or drugs with inadequate generic competition, including holding meetings with or providing advice to the drug sponsor prior to submission of the application.

Hatch-Waxman Patent Certification and the 30-Month Stay

Upon approval of a NDA, including a 505(b)(2) NDA, or a supplement thereto, NDA sponsors are required to list with the FDA each patent with claims that cover the applicant's product or an approved method of using the product. Each of the patents listed by the NDA sponsor is published in the Orange Book. When an ANDA applicant files its application with the FDA, the applicant is required to certify to the FDA concerning any patents listed for the reference product in the Orange Book, except for patents covering methods of use for which the ANDA applicant is not seeking approval. To the extent that the Section 505(b)(2) applicant relies on studies conducted for an already approved product, the applicant is required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would.

Specifically, the applicant must certify with respect to each patent that:

- the required patent information has not been filed;
- the listed patent has expired;
- the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or
- the listed patent is invalid, unenforceable or will not be infringed by the new product.

A certification that the new product will not infringe the already approved product's listed patents or that such patents are invalid or unenforceable is called a Paragraph IV certification. If the applicant does not challenge the listed patents or indicates that it is not seeking approval of a patented method of use, the application will not be approved until all the listed patents claiming the referenced product have expired (other than method of use patents involving indications for which the applicant is not seeking approval).

If the ANDA or 505(b)(2) applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA or the 505(b)(2) application has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days after the receipt of a Paragraph IV certification automatically prevents the FDA from approving the ANDA or 505(b)(2) application until the earlier of 30 months after the receipt of the Paragraph IV notice, expiration of the patent, or a decision in the infringement case that is favorable to the applicant. The ANDA or 505(b)(2) application also will not be approved until any applicable non-patent exclusivity listed in the Orange Book for the branded reference drug has expired.

Regulation of Combination Products in the United States

Certain products may be comprised of components, such as drug components and device components, that would normally be regulated under different types of regulatory authorities, and frequently by different centers at the FDA. These products are known as combination products. Specifically, under regulations issued by the FDA, a combination product may be:

- a product comprised of two or more regulated components that are physically, chemically, or otherwise combined or mixed and produced as a single entity;

- two or more separate products packaged together in a single package or as a unit and comprised of drug and device products, device and biological products, or biological and drug products;
- a drug, or device, or biological product packaged separately that according to its investigational plan or proposed labeling is intended for use only with an approved individually specified drug, or device, or biological product where both are required to achieve the intended use, indication, or effect and where upon approval of the proposed product the labeling of the approved product would need to be changed, e.g., to reflect a change in intended use, dosage form, strength, route of administration, or significant change in dose; or
- any investigational drug, or device, or biological product packaged separately that according to its proposed labeling is for use only with another individually specified investigational drug, device, or biological product where both are required to achieve the intended use, indication, or effect.

Under the FDCA and its implementing regulations, the FDA is charged with assigning a center with primary jurisdiction, or a lead center, for review of a combination product. The designation of a lead center generally eliminates the need to receive approvals from more than one FDA component for combination products, although it does not preclude consultations by the lead center with other components of FDA. The determination of which center will be the lead center is based on the "primary mode of action" of the combination product. Thus, if the primary mode of action of a drug-device combination product is attributable to the drug product, the FDA center responsible for premarket review of the drug product would have primary jurisdiction for the combination product. The FDA has also established an Office of Combination Products to address issues surrounding combination products and provide more certainty to the regulatory review process. That office serves as a focal point for combination product issues for agency reviewers and industry. It is also responsible for developing guidance and regulations to clarify the regulation of combination products, and for assignment of the FDA center that has primary jurisdiction for review of combination products where the jurisdiction is unclear or in dispute.

A combination product with a drug primary mode of action generally would be reviewed and approved pursuant to the drug approval processes under the FDCA. In reviewing the NDA or 505(b)(2) application for such a product, however, FDA reviewers in the drug center could consult with their counterparts in the device center to ensure that the device component of the combination product met applicable requirements regarding safety, effectiveness, durability and performance. In addition, under FDA regulations, combination products are subject to cGMP requirements applicable to both drugs and devices, including the Quality System, or QS, regulations applicable to medical devices.

Drug-device combination products present unique challenges for competitors seeking approval of Abbreviated New Drug Applications, or ANDA, for generic versions of combination products. Generally, FDA reviews both the drug and device constituents of a proposed generic product to determine whether it is the same as the innovator product, including whether the basic design and operating principles of the device component are the same and whether minor differences require significant differences in labeling for safe and effective use. If FDA determines that the device component of the proposed generic product is not the same in terms of performance and critical design, or that the labeling is not the same, it generally will not approve the ANDA. Likewise, if FDA determines that certain clinical studies, such as clinical usability or human factors studies, are necessary to demonstrate the safety and/or effectiveness of the device component, FDA generally will not accept or approve an ANDA for a combination product and will instead require the submission of a full NDA or 505(b)(2) application.

Post-Marketing Requirements

Any products for which we receive FDA approval are subject to continuing regulation by the FDA, including, among other things, monitoring and recordkeeping activities, reporting to the applicable regulatory authorities of adverse events with the product, providing the applicable regulatory authorities with updated safety and efficacy information, and product sampling and distribution requirements in accordance with the Prescription Drug Marketing Act, or PMDA, a part of the FDCA, as well as the Drug Supply Chain Security Act, or DSCSA. The PDMA, its implementing regulations and state laws limit the distribution of prescription pharmaceutical product samples, and the DSCSA imposes requirements to ensure accountability in distribution and to identify and remove counterfeit and other illegitimate products from the market. Moreover, each component of a combination product retains their regulatory status (as a drug or device, for example) and is subject to the requirements established by the FDA for that type of

component. The FDA strictly regulates labeling, advertising, promotion and other types of information on products that are placed on the market.

Prescription drug advertising is subject to federal, state and foreign regulations. In the United States, the FDA regulates prescription drug promotion and advertising, including direct-to-consumer advertising. Prescription drug promotional materials must be submitted to the FDA in conjunction with their first use. In addition, a pharmaceutical company must comply with restrictions on promoting drugs for uses or in patient populations that are not described in the drug's approved labeling (known as "off-label use"), limitations on industry-sponsored scientific and educational activities, and requirements for promotional activities involving the internet. Although physicians may prescribe legally available drugs for off-label uses, manufacturers typically may not market or promote such off-label uses.

In the United States, once a product is approved, its manufacture is subject to comprehensive and continuing regulation by the FDA. The FDA regulations require that combination products be manufactured in specific approved facilities and in accordance with cGMPs applicable to drugs and devices, including certain QS requirements. We rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of our products in accordance with cGMP regulations. cGMP regulations require among other things, quality control and quality assurance as well as the corresponding maintenance of records and documentation and the obligation to investigate and correct any deviations from cGMP. Drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMPs and other laws. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance. These regulations also impose certain organizational, procedural and documentation requirements with respect to manufacturing and quality assurance activities. NDA holders using contract manufacturers, laboratories or packagers are responsible for the selection and monitoring of qualified firms, and, in certain circumstances, qualified suppliers to these firms. These firms and, where applicable, their suppliers are subject to inspections by the FDA at any time, and the discovery of violative conditions, including failure to conform to cGMPs, could result in enforcement actions that interrupt the operation of any such facilities or the ability to distribute products manufactured, processed or tested by them. Discovery of problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved NDA, including, among other things, recall or withdrawal of the product from the market.

The FDA also may require post-marketing testing, known as Phase 4 testing, REMS and surveillance to monitor the effects of an approved product or place conditions on an approval that could restrict the distribution or use of the product. Discovery of previously unknown problems with a product or the failure to comply with applicable FDA requirements can have negative consequences, including adverse publicity, judicial or administrative enforcement, untitled or warning letters from the FDA, mandated corrective advertising or communications with doctors, and civil or criminal penalties, among others. Newly discovered or developed safety or effectiveness data may require changes to a product's approved labeling, including the addition of new warnings and contraindications, and may require the implementation of other risk management measures. Also, new government requirements, including those resulting from new legislation, may be established, or the FDA's policies may change, which could delay or prevent regulatory approval of our products under development and impact approved products already on the market.

Other Regulatory Matters

The distribution of pharmaceutical products is subject to additional requirements and regulations, including extensive record-keeping, licensing, storage and security requirements intended to prevent the unauthorized sale of pharmaceutical products.

The failure to comply with regulatory requirements subjects firms to possible legal or regulatory action. Depending on the circumstances, failure to meet applicable regulatory requirements can result in criminal prosecution, fines or other penalties, injunctions, voluntary recall, seizure of products, total or partial suspension of production, denial or withdrawal of product approvals, exclusion from federal healthcare programs, or refusal to allow a firm to enter into supply contracts, including government contracts. In addition, even if a firm complies with FDA and other requirements, new information regarding the safety or effectiveness of a product could lead the FDA to modify or

withdraw product approval. Prohibitions or restrictions on sales or withdrawal of future products marketed by us could materially affect our business in an adverse way.

Changes in regulations, statutes or the interpretation of existing regulations could impact our business in the future by requiring, for example: (i) changes to our manufacturing arrangements; (ii) additions or modifications to product labeling; (iii) the voluntary recall or discontinuation of our products; or (iv) additional record-keeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business.

Orphan Designation and Exclusivity

The FDA may grant orphan drug designation to drugs intended to treat a rare disease or condition that affects fewer than 200,000 individuals in the United States. Alternatively, orphan drug designation may be available if the disease of the condition affects more than 200,000 individuals in the United States and there is no reasonable expectation that the cost of developing and making the drug for this type of disease or condition will be recovered from sales in the United States.

Orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages, and user-fee waivers. If a product with orphan designation receives the first FDA approval for the disease or condition for which it has such designation or for a select indication or use within the rare disease or condition for which it was designated, the product generally will receive orphan drug exclusivity. Orphan drug exclusivity means that the FDA may not approve another sponsor's marketing application for the same drug for the same condition for seven years, except in certain limited circumstances. Orphan exclusivity does not block the approval of a different drug for the same rare disease or condition, nor does it block the approval of the same drug for different conditions. If a drug designated as an orphan drug ultimately receives marketing approval for an indication broader than what was designated in its orphan drug application, it may not be entitled to exclusivity.

Orphan drug exclusivity will not bar approval of another product with the same drug for the same condition under certain circumstances, including if a subsequent product with the same drug for the same condition is shown to be clinically superior to the approved product on the basis of greater efficacy or safety, or providing a major contribution to patient care, or if the company with orphan drug exclusivity cannot assure the availability of sufficient quantities of the drug to meet the needs of persons with the disease or condition for which the drug was designated.

Pediatric Studies and Exclusivity

Under the Pediatric Research Equity Act of 2003, as amended, a NDA or supplement thereto must contain data to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. A sponsor who is planning to submit a marketing application for a drug product that includes a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration must submit an initial Pediatric Study Plan, or PSP, within sixty days of an end-of-phase 2 meeting or as may be agreed between the sponsor and the FDA. The initial PSP must include an outline of the pediatric study or studies that the sponsor plans to conduct, including study objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults or full or partial waivers if certain criteria are met. The FDA and the sponsor must reach agreement on the PSP. A sponsor can submit amendments to an agreed-upon initial PSP at any time if changes to the pediatric plan need to be considered based on data collected from pre-clinical studies, early phase clinical trials, and/or other clinical development programs. The requirements for pediatric data generally do not apply to drugs for an indication for which orphan designation has been granted.

Pediatric exclusivity is another type of non-patent exclusivity in the United States and, if granted, provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity, including the non-patent five-year and three-year and orphan exclusivity. This six-month exclusivity may be granted if a NDA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The data do not need to show the product to be effective in the pediatric population studied; rather, if the clinical trial is

deemed to fairly respond to the FDA's request, the additional protection is granted. If reports of FDA-requested pediatric studies are submitted to and accepted by the FDA within the statutory time limits, whatever statutory or regulatory periods of exclusivity or patent protection cover the product are extended by six months. This is not a patent term extension, but it effectively extends the regulatory period during which the FDA cannot approve another application.

Regulations and Procedures Governing Approval of Medicinal Products in the European Union

In order to market any product outside of the United States, a company must also comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of products. Whether or not it obtains FDA approval for a product, an applicant will need to obtain the necessary approvals by the comparable non-U.S. regulatory authorities before it can commence clinical trials or marketing of the product in those countries or jurisdictions. Specifically, the process governing approval of medicinal products in the European Union ("EU") generally follows the same lines as in the United States. It entails satisfactory completion of pharmaceutical development, pre-clinical studies and adequate and well-controlled clinical trials to establish the safety and efficacy of the medicinal product for each proposed indication. It also requires the submission to the relevant competent authorities for clinical trials authorization and to the European Medicines Authority, or EMA, for a marketing authorization application, or MAA, and granting of a marketing authorization by these authorities before the product can be marketed and sold in the EU.

European Orphan Designation and Exclusivity

In the European Union, the EMA's Committee for Orphan Medicinal Products, or COMP, grants orphan drug designation to promote the development of products that are intended for the diagnosis, prevention or treatment of life-threatening or chronically debilitating conditions that affect not more than five in 10,000 persons in the European Union Community, or when, without incentives, it is unlikely that sales of such products in the European Union would be sufficient to justify the necessary investment in developing the products. Additionally, orphan drug designation is only available where no satisfactory method of diagnosis, prevention, or treatment of the condition has been authorized (or the product would be a significant benefit to those affected).

In the European Union, orphan drug designation entitles a party to financial incentives such as reduction of fees or fee waivers and 10 years of market exclusivity is granted following medicinal product approval. This period may be reduced to six years if the orphan drug designation criteria are no longer met, including where it is shown that the product is sufficiently profitable not to justify maintenance of market exclusivity. Market exclusivity would not prevent the approval of a similar drug that is shown to be safer, more effective or otherwise clinically superior.

Other Healthcare Laws and Compliance Requirements

In addition to FDA restrictions on the marketing of pharmaceutical products and medical devices, we may be subject to various federal and state laws targeting fraud and abuse in the healthcare industry. Our activities are also subject to regulation by numerous regulatory authorities include the Centers for Medicare & Medicaid Services, or CMS, other divisions of the Department of Health and Human Services, or DHHS, the Department of Justice, or DOJ, the Drug Enforcement Administration, or DEA, the Consumer Product Safety Commission, or CPSC, the Federal Trade Commission, or FTC, the Occupational Safety & Health Administration, or OSHA, the Environmental Protection Agency, or EPA, and state and local governments. These laws may impact, among other things, our proposed sales, marketing and education programs. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, or AKS, which makes it illegal for any person, including a prescription drug manufacturer (or a party acting on its behalf) to knowingly and willfully solicit, receive, offer, receive or pay any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, in exchange for, or intended to induce or reward, including arranging for or recommending, either the referral of an individual, or the purchase, lease, order, prescription or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs; a person or entity does not need to have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it to have committed a violation. In addition, the government may assert that 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

federal False Claims Act (see below) or federal civil money penalties statute. Violations of the AKS carry potentially significant civil and criminal penalties, including imprisonment, fines, administrative civil monetary penalties, and exclusion from participation in federal healthcare programs;

- federal civil and criminal false claims laws and civil monetary penalties laws, such as the federal False Claims Act, which imposes criminal and civil penalties and authorizes civil whistleblower or qui tam actions, against individuals or entities (including manufacturers) for, among other things: knowingly presenting, or causing to be presented, to a federal government healthcare program, claims for payment that are false or fraudulent; making, using or causing to be made or used, a false statement or record material to payment of a false or fraudulent claim or obligation to pay or transmit money or property to the federal government; or knowingly concealing or knowingly and improperly avoiding or decreasing an obligation to pay money to the federal government. The government may deem manufacturers to have "caused" the submission of false or fraudulent claims by, for example, providing inaccurate billing or coding information to customers or promoting a product off-label. Our marketing and activities relating to the reporting of wholesaler or estimated retail prices for our products, the reporting of prices used to calculate Medicaid rebate information and other information affecting federal, state and third-party reimbursement for our products, and the sale and marketing of our products and any future product candidates, are subject to scrutiny under this law;
- the anti-inducement law, which prohibits, among other things, the offering or giving of remuneration, which includes, without limitation, any transfer of items or services for free or for less than fair market value (with limited exceptions), to a Medicare or Medicaid beneficiary that the person knows or should know is likely to influence the beneficiary's selection of a particular supplier of items or services reimbursable by a federal or state governmental program;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which imposes criminal and civil liability for knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program (including private payors) or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by HITECH, and their respective implementing regulations, which impose specified requirements on certain covered healthcare providers, health plans, and healthcare clearinghouse ("covered entities") as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information, including mandatory contractual terms and required implementation of technical safeguards of such information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associate with pursing federal civil actions;
- the federal false statements statute, which prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services;
- the federal transparency requirements under the Affordable Care Act, including the Physician Payments 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 U.S. Department of Health and Human Services information related to payments or other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and

chiropractors) and teaching hospitals, as well as ownership and investment interests held by the physicians described above and their immediate family members;

- federal government price reporting laws, which require us to calculate and report complex pricing metrics in an accurate and timely manner to government programs; and
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers.
- The Foreign Corrupt Practices Act, or FCPA, prohibits companies and their intermediaries from making, or offering or promising to make improper payments to non-U.S. officials for the purpose of obtaining or retaining business or otherwise seeking favorable treatment.

Additionally, we are subject to state and non-U.S. equivalents of each of the healthcare laws described above, among others, some of which may be broader in scope and may apply regardless of the payor. Many U.S. states have adopted laws similar to the federal Anti-Kickback Statute, some of which apply to the referral of patients for healthcare services reimbursed by any source, not just governmental payors, including private insurers. In addition, some states have passed laws that require pharmaceutical companies to comply with the April 2003 Office of Inspector General Compliance Program Guidance for Pharmaceutical Manufacturers and/or the Pharmaceutical Research and Manufacturers of America's Code on Interactions with Healthcare Professionals. Several states also impose other marketing restrictions or require pharmaceutical companies to make marketing or price disclosures to the state. There are ambiguities as to what is required to comply with these state requirements and if we fail to comply with an applicable state law requirement we could be subject to penalties. Finally, there are state and non-U.S. laws governing the privacy and security of health information, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws.

Violations of fraud and abuse laws may be punishable by criminal and/or civil sanctions, including penalties, fines, disgorgement, imprisonment and/or exclusion or suspension from federal and state healthcare programs such as Medicare and Medicaid and debarment from contracting with the U.S. government. In addition, private individuals have the ability to bring actions on behalf of the U.S. government under the federal False Claims Act as well as under the false claims laws of several states.

Neither the U.S. government nor the U.S. courts have provided definitive guidance on the application of fraud and abuse laws to our business. Law enforcement authorities are increasingly focused on enforcing these laws, and it is possible that some of our practices may be challenged under these laws. Efforts to ensure that our current and future business arrangements with third parties, and our business generally, will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices, including our arrangements with physicians and other healthcare providers, some of whom receive stock options as compensation for services provided, may not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and 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 civil, criminal and administrative penalties, damages, disgorgement, monetary fines, imprisonment, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations. In addition, the approval and commercialization of any of our drug candidates outside the United States will also likely subject us to non-U.S. equivalents of the healthcare laws mentioned above, among other non-U.S. laws.

If any of the physicians or other healthcare providers or entities with whom we expect to do business with are found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs, which may also adversely affect our business.

We may be subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes.

From time to time and in the future, our operations may involve the use of hazardous and flammable materials, including chemicals and biological materials, and may also produce hazardous waste products. Even if we contract with third parties for the disposal of these materials and waste products, we cannot completely eliminate the risk of contamination or injury resulting from these materials. In the event of contamination or injury resulting from the use or disposal of our hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

We maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees, but this insurance may not provide adequate coverage against potential liabilities. However, we do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. Current or future environmental laws and regulations may impair our research, development or production efforts. In addition, failure to comply with these laws and regulations may result in substantial fines, penalties or other sanctions.

Healthcare Reform

A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and other third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medical products. For example, in March 2010, the Affordable Care Act, or the ACA, was enacted, which, among other things, increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program; introduced a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected; extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care plans; imposed mandatory discounts for certain Medicare Part D beneficiaries as a condition for manufacturers' outpatient drugs coverage under Medicare Part D; subjected drug manufacturers to new annual fees based on pharmaceutical companies' share of sales to federal healthcare programs; imposed a new federal excise tax on the sale of certain medical devices; created a new Patient Centered Outcomes Research Institute to oversee, identify priorities in and conduct comparative clinical effectiveness research, along with funding for such research; created the Independent Payment Advisory Board, which, if impaneled, would have authority to recommend certain changes to the Medicare program that could result in reduced payments for prescription drugs; and established the a Center for Medicare Innovation at the CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending.

Since its enactment, some of the provisions of the ACA have yet to be fully implemented, while certain provisions have been subject to judicial, Congressional, and Executive challenges. The U.S. Supreme Court has upheld certain key aspects of the legislation, including a tax-based shared responsibility payment imposed on certain individuals who fail to maintain qualifying health coverage for all or part of a year, which is commonly the requirement that all individuals maintain health insurance coverage or pay a penalty, referred to as the "individual mandate. However, the new presidential administration has indicated that enacting changes to the ACA is a legislative priority, and has discussed repealing and replacing or amending the ACA. While Congress has not passed repeal legislation to date, the 2017 Tax Reform Act includes a provision repealing the individual mandate, effective January 1, 2019.

Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. One Executive Order directs federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. The second Executive Order terminates the cost-sharing subsidies that reimburse insurers under the ACA. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017. In addition, CMS has recently proposed regulations that would give states greater flexibility in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces. Litigation and legislation over the ACA are likely

to continue, with unpredictable and uncertain results. We continue to evaluate the effect that the Affordable Care Act and its possible repeal and replacement could have on our business.

In addition, the Budget Control Act of 2011 and the Bipartisan Budget Act of 2015 led to aggregate reductions of Medicare payments to providers of up to 2% per fiscal year that will remain in effect through 2027 unless additional Congressional action is taken. Further, on January 2, 2013, the American Taxpayer Relief Act was signed into law, which, among other things, reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. More recently, there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which have resulted in several recent Congressional inquiries and proposed bills designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for pharmaceutical products. Individual states in the United States have also become increasingly active in passing legislation and implementing regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

We expect that additional foreign, federal and state healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in limited coverage and reimbursement and reduced demand for our products, once approved, or additional pricing pressures.

Coverage and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidate for which we obtain regulatory approval. In the United States and markets in other countries, sales of any product candidates for which we receive regulatory approval for commercial sale will depend, in part, on the availability of coverage and reimbursement from third-party payors. Third-party payors include government authorities, managed care providers, private health insurers and other organizations. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the reimbursement rate that the payor will pay for the product. Third-party payors may limit coverage to specific products on an approved list, or formulary, which might not include all of the FDA-approved products for a particular indication. A decision by a third-party payor not to cover our product candidates could reduce physician utilization of our products once approved and have a material adverse effect on our sales, results of operations and financial condition. Moreover, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

In addition, coverage and reimbursement for products can differ significantly from payor to payor. One third-party payor's decision to cover a particular medical product or service does not ensure that other payors will also provide coverage for the medical product or service, or will provide coverage at an adequate reimbursement rate. As a result, the coverage determination process will require us to provide scientific and clinical support for the use of our products to each payor separately and will be a time-consuming process.

Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety and efficacy. In order to obtain and maintain coverage and reimbursement for any product, we may need to conduct expensive clinical trials in order to demonstrate the medical necessity and cost-effectiveness of such product, in addition to the costs required to obtain regulatory approvals. Our products may not be considered medically necessary or cost-effective. If third-party payors do not consider a product to be cost-effective compared to other available therapies, they may not cover the product as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow a company to sell its products at a profit.

The United States government, state legislatures and foreign governments have shown significant interest in implementing cost containment programs to limit the growth of government-paid health care costs, including price-

controls, restrictions on reimbursement and requirements for substitution of generic products for branded prescription drugs. For example, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively the ACA, contains provisions that may reduce the profitability of drug products through increased rebates for drugs reimbursed by Medicaid programs, extension of Medicaid rebates to Medicaid managed care plans, and mandatory discounts for certain Medicare Part D beneficiaries and annual fees based on pharmaceutical companies' share of sales to federal health care programs. Adoption of general controls and measures, coupled with the tightening of restrictive policies in jurisdictions with existing controls and measures, could limit payments for pharmaceutical drugs.

The Medicaid Drug Rebate Program requires pharmaceutical manufacturers to enter into and have in effect a national rebate agreement with the Secretary of the Department of Health and Human Services as a condition for states to receive federal matching funds for the manufacturer's outpatient drugs furnished to Medicaid patients. Effective in 2010, the ACA made several changes to the Medicaid Drug Rebate Program, including increasing pharmaceutical manufacturers' rebate liability by raising the minimum basic Medicaid rebate on most branded prescription drugs from 15.1% of average manufacturer price, or AMP, to 23.1% of AMP, and adding a new rebate calculation for "line extensions" (i.e., new formulations, such as extended release formulations) of solid oral dosage forms of branded products, creating a new methodology by which rebates owed by are calculated for drugs that are inhaled, infused, instilled, implanted or injected, as well as potentially impacting their rebate liability by modifying the statutory definition of AMP. The ACA also expanded the universe of Medicaid utilization subject to drug rebates by requiring pharmaceutical manufacturers to pay rebates on Medicaid managed care utilization as of 2010 and by expanding the population potentially eligible for Medicaid drug benefits (phased-in by 2014). Pricing and rebate programs must also comply with the Medicaid rebate requirements of the U.S. Omnibus Budget Reconciliation Act of 1990.

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, established the Medicare Part D program to provide a voluntary prescription drug benefit to Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities that provide coverage of outpatient prescription drugs. Unlike Medicare Parts A and B, Part D coverage is not standardized. Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. While all Medicare drug plans must give at least a standard level of coverage set by Medicare, Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for drugs for which we obtain marketing approval. Any negotiated prices for any of our products covered by a Part D prescription drug plan will likely be lower than the prices we might otherwise obtain. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from the MMA may result in a similar reduction in payments from non-governmental payors.

For a drug product to receive federal reimbursement under the Medicaid or Medicare Part B programs or to be sold directly to U.S. government agencies, the manufacturer must extend discounts to entities eligible to participate in the 340B drug pricing program. The required 340B discount on a given product is calculated based on the AMP and Medicaid rebate amounts reported by the manufacturer. As of 2010, the ACA expanded the types of entities eligible to receive discounted 340B pricing, although under the current state of the law these newly eligible entities (with the exception of children's hospitals) will not be eligible to receive discounted 340B pricing on orphan drugs. As 340B drug pricing is determined based on AMP and Medicaid rebate data, the revisions to the Medicaid rebate formula and AMP definition described above could cause the required 340B discount to increase. The American Recovery and Reinvestment Act of 2009 provides funding for the federal government to compare the effectiveness of different treatments for the same illness. The plan for the research was published in 2012 by the Department of Health and Human Services, the Agency for Healthcare Research and Quality and the National Institutes for Health, and periodic reports on the status of the research and related expenditures are made to Congress. Although the

results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private payors, it is not clear what effect, if any, the research will have on the sales of our drug candidates, if any such drug or the condition that they are intended to treat are the subject of a trial. It is also possible that comparative effectiveness research demonstrating benefits in a competitor's drug could adversely affect the sales of our drug candidate. If third-party payors do not consider our drugs to be cost-effective compared to other available therapies, they may not cover our drugs after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our drugs on a profitable basis.

In recent years, additional laws have resulted in direct or indirect reimbursement reductions for certain Medicare providers, including:

- The Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. These changes included aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went into effect in April 2013 and will remain in effect through 2027 unless additional Congressional action is taken.
- The American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several providers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.
- The Middle Class Tax Relief and Job Creation Act of 2012 required that the Centers for Medicare & Medicaid Services reduce the Medicare clinical laboratory fee schedule by 2% in 2013, which served as a base for 2014 and subsequent years. In addition, effective January 1, 2014, CMS also began bundling the Medicare payments for certain laboratory tests ordered while a patient received services in a hospital outpatient setting.

These laws, and future state and federal healthcare reform measures may be adopted in the future, any of which may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices we may obtain for any product candidates for which we may obtain regulatory approval or the frequency with which any such product candidate is prescribed or used.

As noted above, the marketability of any products for which we receive regulatory approval for commercial sale may suffer if the government and third-party payors fail to provide adequate coverage and reimbursement. We expect that an increasing emphasis on cost containment measures in the United States will continue to increase the pressure on pharmaceutical pricing. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Further, there have been several recent U.S. congressional inquiries and proposed federal and proposed and enacted state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare and reform government program reimbursement methodologies for drug products. At the federal level, Congress and the Trump administration have each indicated that it will continue to pursue new legislative and/or administrative measures to control drug costs. Individual state legislatures have become increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing. Some of these measures include price or patient reimbursement constraints, discounts, restrictions on certain product access, marketing cost disclosure and transparency measures, and, in some cases, measures designed to encourage importation from other countries and bulk purchasing. In addition, regional health care authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other health care programs. These measures could reduce the ultimate demand for our products, once approved, or put pressure on our product pricing.

Outside of the United States, the pricing of pharmaceutical products and medical devices is subject to governmental control in many countries. For example, in the European Union, pricing and reimbursement schemes vary widely

from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular therapy to currently available therapies or so-called health technology assessments, in order to obtain reimbursement or pricing approval. Other countries may allow companies to fix their own prices for products, but monitor and control product volumes and issue guidance to physicians to limit prescriptions. Efforts to control prices and utilization of pharmaceutical products and medical devices will likely continue as countries attempt to manage healthcare expenditures.

Employees

As of March 1, 2018, we had 46 employees, one of whom was primarily engaged in sales and marketing, 23 of whom were primarily engaged in product development and research and 22 of whom were primarily engaged in administration and finance. None of our employees are represented by a labor union or covered by a collective bargaining agreement. We consider our relationship with our employees to be good.

Facilities

Our principal office is located in Chicago, Illinois. Our Chicago office occupies approximately 16,045 square feet of leased space. The lease term expires on November 30, 2024. We also maintain a product development site in San Diego, California. We currently occupy temporary space in San Diego as our permanent space is under construction. We expect that work to be completed by mid-year 2018. Our permanent San Diego office will occupy approximately 17,105 square feet of leased space under a 60-month lease. We believe that the Chicago office coupled with our permanent San Diego office will be suitable and adequate to meet our current needs.

Legal Proceedings

We are not aware of any pending or threatened legal proceeding against us that could have a material adverse effect on our business, operating results or financial condition. The medical device industry is characterized by frequent claims and litigation, including claims regarding patent and other intellectual property rights as well as improper hiring practices. As a result, we may be involved in various additional legal proceedings from time to time.

MANAGEMENT

The following table sets forth information about our directors and executive officers as of March 1, 2018.

NAME	AGE	POSITION(S)
Executive Officers		
Paul Edick	62	President, Chief Executive Officer and Director
Nora Brennan	49	Chief Financial Officer
John Shannon	56	Executive Vice President, Chief Operating Officer
Steven Prestrelski	54	Chief Scientific Officer
Ken Johnson	56	Senior Vice President, Clinical Development, Regulatory, Quality Assurance and Medical Affairs
Non-Employee Directors		
Robert C. Faulkner	55	Director
Cary McNair	58	Director
Jonathan Rigby	51	Director
John Schmid	55	Director

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

Executive Officers

Paul Edick. Mr. Edick joined our company in January 2017 as President and Chief Executive Officer. Previously, Mr. Edick was a founding partner of 3G Advisors, a consultancy firm to the pharmaceutical, healthcare and healthcare investor communities. From 2010 to 2014, Mr. Edick was the chief executive officer of Durata Therapeutics, Inc. prior to its acquisition in November 2014. Prior to that, Mr. Edick was chief executive officer of Ganic Pharmaceuticals, Inc., a Warburg Pincus investment search vehicle, from 2008 to 2010. Before that, from 2006 to 2008, Mr. Edick was chief executive officer of MedPointe Healthcare, Inc., and served as its president of pharmaceutical operations from 2002 to 2006.

Mr. Edick currently serves on the board of directors for Neos Therapeutics, Inc., PDL BioPharma, Inc., NewLink Genetics and Iterum Therapeutics Limited. Mr. Edick has also previously served on a number of pharmaceutical and healthcare company boards including Circassia Pharmaceuticals Plc, Sucampo Pharmaceuticals, Inc., Durata Therapeutics, Amerita, Inc. and Informed Medical Communications, Inc. Mr. Edick received a B.A. degree in psychology from Hamilton College. We believe Mr. Edick is qualified to serve on our board of directors because of his management and industry experience.

Nora Brennan. Ms. Brennan joined our company in July 2017 as Chief Financial Officer. Previously, from 2006 to 2017, Ms. Brennan served on the executive leadership team at Integra LifeSciences, including as the senior vice president and treasurer.

Ms. Brennan received a B.A. degree in economics from the University of Illinois and an M.B.A. from the University of Chicago Graduate School of Business.

John Shannon. Mr. Shannon joined our company in February 2017 as Chief Operating Officer. Previously, from 2015 until its acquisition in 2016, Mr. Shannon served as chief executive officer and director for Catheter Connections, Inc. Prior to that, from 2011 to until its acquisition in 2014, Mr. Shannon served as chief commercial officer for Durata Therapeutics. From 2002 to 2014, he served as vice president and general manager of Baxter BioScience.

Mr. Shannon received a B.S. degree in biology with an emphasis in microbiology, from Western Illinois University.

Steve Prestrelski, Ph.D. Dr. Prestrelski is one of our co-founders. He has served as our Chief Scientific Officer since 2005 and as our Interim Chief Executive Officer from 2013 to 2014. He also served on our board of directors from

2005 to 2015. Dr. Prestrelski is the inventor of our platform technologies. Prior to joining our company, from 2003 to 2011, Dr. Prestrelski was vice president of pharmaceutical R&D at Amylin Pharmaceuticals. Previously, from 2003 to 2005, he was the executive director of the Bydureon program at Amylin. From 1998 to 2002, Dr. Prestrelski was vice president, biopharmaceuticals at PowderJect Technologies, Inc. Dr. Prestrelski serves on the board of directors of BaroFold, Inc. and on the scientific advisory board of iMEDD, Inc. Dr. Prestrelski served on the scientific advisory board of GIRx Metabolics from 2012 to 2014.

Dr. Prestrelski has a B.S. in nutrition science from Drexel University, a Ph.D. in molecular biophysics from the City University of New York and an M.B.A from Rady School of Management at the University of California, San Diego.

Ken Johnson, Pharm. D. Dr. Johnson joined our company in March 2017. Prior to that, from 2016 to 2017, Dr. Johnson served as executive director, U.S. medical affairs for hospital specialty products at Merck. Previously, Dr. Johnson served as vice president of global medical affairs at Circassia Pharmaceuticals from 2015 to 2016 and as vice president of corporate medical affairs at Durata Therapeutics from 2012 to 2015. Prior to his time at Durata, Mr. Johnson also held senior management positions in medical affairs at Horizon Pharma, Inc., Takeda Pharmaceuticals North America, NeoPharm, Inc., Searle/Pharmacia Pharmaceuticals and Bristol-Myers Squibb.

Dr. Johnson received a B.S. in pharmacy and Pharm. D. from the University of Minnesota and completed a post-doctoral fellowship at the University of Tennessee Health Sciences Center.

Non-Employee Directors

Robert C. Faulkner. Mr. Faulkner has served on our board of directors since December 2015. Mr. Faulkner also serves on the board of directors of Science 37 and Call9, and as a board observer of Vapotherm. Mr. Faulkner serves as a partner at Redmile Group, a healthcare sector asset management firm, which he joined in 2008. Mr. Faulkner is a Managing Director of the Redmile Private Investments Funds.

Mr. Faulkner has a A.B. degree from Harvard College and an M.B.A. from the Tuck School of Business at Dartmouth College. We believe Mr. Faulkner is qualified to serve on our board of directors because of his experience investing in the healthcare industry.

Cary McNair. Mr. McNair has served on our board of directors since January 2015. Since 2011, Mr. McNair has served as president of the McNair Medical Institute, which focuses primarily on therapies for Type 1 diabetes, pancreatic cancer, breast cancer and neuroscience.

In addition, since 2009, Mr. McNair has served as chairman, or vice chairman, of The McNair Group, a private equity investment company active in real estate, life science, and energy development projects, as well as public and private equities. Formerly, Mr. McNair served on the board of directors of The Fay School (Houston), and Goodwill Industries of Houston. He is also a past member of the UT Houston Health Science Center Development Board. Currently, Mr. McNair serves on the board of directors of Glysens, Inc., XCath Inc. and ColubrisMX, Inc.

Mr. McNair earned a B.B.A. degree in business administration from The University of Texas at Austin and an M.B.A. from the Cox School of Business at Southern Methodist University. We believe Mr. McNair is qualified to serve on our board of directors because of his experience in the industry in which we operate.

Jonathan Rigby. Mr. Rigby has served as on our board of directors since March 2016. In 2011, Mr. Rigby founded SteadyMed Therapeutics Inc. and has since served as its president, chief executive officer and director. Prior to founding SteadyMed, Mr. Rigby cofounded Zogenix Inc., a specialty pharmaceutical company focused on the development and commercialization of central nervous system and pain products, where he served as its vice president of business development from 2006 until December 2011.

Mr. Rigby has a B.S. degree in biological sciences from Sheffield University (UK) and an M.B.A. from Portsmouth University (UK). We believe Mr. Rigby is qualified to serve on our board of directors because of his experience in the industry in which we operate.

John Schmid. Mr. Schmid has served on our board of directors since September 2017. Mr. Schmid currently serves as a member of the board of directors of Neos Therapeutics, Inc., AnaptysBio Inc., Forge Therapeutics, Inc., Patara

Pharma, Inc. and Speak, Inc. Previously, he was the chief financial officer of Auspex Pharmaceuticals, Inc. from 2013 until its acquisition in 2015. Prior to joining Auspex Pharmaceuticals, Mr. Schmid co-founded Trius Therapeutics, Inc. in 2004, where he served as chief financial officer until its sale in 2013.

Mr. Schmid received a B.A. in economics from Wesleyan University and an M.B.A. from the University of San Diego. We believe Mr. Schmid is qualified to serve on our board of directors because of his experience, including financial experience, in the industry in which we operate.

Board Composition

Our board of directors currently consists of five members, each of whom is a member pursuant to the board composition provisions of our current certificate of incorporation and agreements with our stockholders. These board composition provisions will terminate upon the completion of this offering. Upon the termination of these provisions, there will be no further contractual obligations regarding the election of our directors. Our nominating and corporate governance committee and our board of directors may therefore consider a broad range of factors relating to the qualifications and background of nominees. Our nominating and corporate governance committee's and our board of directors' priority in selecting board members is identification of persons who will further the interests of our stockholders through their established record of professional accomplishment, the ability to contribute positively to the collaborative culture among board members, knowledge of our business, understanding of the competitive landscape, professional and personal experiences and expertise relevant to our growth strategy. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal. Our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering also provide that our directors may be removed only for cause by the affirmative vote of the holders of at least two-thirds of the votes that all our stockholders would be entitled to cast in an annual election of directors, and that any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office.

Staggered Board

In accordance with the terms of our amended and restated certificate of incorporation and our amended and restated bylaws that will become effective upon the closing of this offering, our board of directors will be divided into three staggered classes of directors and each will be assigned to one of the three classes. At each annual meeting of the stockholders, a class of directors will be elected for a three-year term to succeed the directors of the same class whose terms are then expiring. The terms of the directors will expire upon the election and qualification of successor directors at the annual meeting of stockholders to be held during the years 2019 for Class I directors, 2020 for Class II directors and 2021 for Class III directors.

- Our Class I directors will be ;
- Our Class II directors will be ; and
- Our Class III directors will be .

Our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering will provide that the number of our directors shall be fixed from time to time by a resolution of the majority of our board of directors.

The division of our board of directors into three classes with staggered three-year terms may delay or prevent stockholder efforts to effect a change of our management or a change in control.

Board Independence

We intend to apply to list our common stock on The Nasdaq Global Market. Under the rules of The Nasdaq Global Market, independent directors must comprise a majority of a listed company's board of directors within twelve months from the date of listing. In addition, The Nasdaq Global Market rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and governance committees be independent within twelve months from the date of listing. Audit committee members must also satisfy additional independence criteria, including those set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and compensation committee members must also satisfy the independence criteria

set forth in Rule 10C-1 under the Exchange Act. Under The Nasdaq Global Market rules, a director will only qualify as an "independent director" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3 under the Exchange Act, a member of an audit committee of a listed 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: (1) accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries, other than compensation for board service; or (2) be an affiliated person of the listed company or any of its subsidiaries. In order to be considered independent for purposes of Rule 10C-1, the board of directors must consider, for each member of a compensation committee of a listed company, all factors specifically relevant to determining whether a director has a relationship to such company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including, but not limited to: the source of compensation of the director, including any consulting advisory or other compensatory fee paid by such company to the director, and whether the director is affiliated with the company or any of its subsidiaries or affiliates.

In , 2018, our board of directors undertook a review of the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our Board of Directors has determined that none of our non-employee directors has a material relationship with us 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" in accordance with the rules of The Nasdaq Global Market. In making that determination, our board of directors considered the relationships that each of those non-employee directors has with us and all other facts and circumstances the board of directors deemed relevant in determining independence, including the potential deemed beneficial ownership of our capital stock by each non-employee director, including non-employee directors that are affiliated with certain of our major stockholders. Mr. Edick is not an independent director under these rules because he is an executive officer of our company.

Our board of directors does not currently have a process for security holders to send communications to the Board. The Board intends to implement such a process as soon as practicable.

Board Committees

Our board of directors has established an audit committee, a compensation committee, and a nominating and corporate governance committee.

Audit Committee

Upon the effectiveness of the registration statement of which this prospectus forms a part, our audit committee will consist of and will be chaired by . The functions of the audit committee will include:

- appointing, approving the compensation of, and assessing the independence of our independent registered public accounting firm;
- pre-approving auditing and permissible non-audit services, and the terms of such services, to be provided by our independent registered public accounting firm;
- reviewing the overall audit plan with our independent registered public accounting firm and members of management responsible for preparing our financial statements;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures as well as critical accounting policies and practices used by us;
- coordinating the oversight and reviewing the adequacy of our internal control over financial reporting;
- establishing policies and procedures for the receipt and retention of accounting-related complaints and concerns;
- recommending based upon the audit committee's review and discussions with management and our independent registered public accounting firm whether our audited financial statements shall be included in our Annual Report on Form 10-K;
- monitoring the integrity of our financial statements and our compliance with legal and regulatory requirements as they relate to our financial statements and accounting matters;

- preparing the audit committee report required by SEC rules to be included in our annual proxy statement;
- reviewing all related person transactions for potential conflict of interest situations and approving all such transactions; and
- reviewing quarterly earnings releases.

All members of our audit committee will meet the requirements for financial literacy under the applicable rules and regulations of the SEC and The Nasdaq Global Market. Our Board of Directors has determined that qualifies as an audit committee financial expert within the meaning of applicable SEC regulations. In making this determination, our Board of Directors considered the nature and scope of experience that has previously had with public reporting companies, including service as . Our Board of Directors has determined that all of the current members of our audit committee satisfy the relevant independence requirements for service on the audit committee set forth in the rules of the SEC and the listing requirements of The Nasdaq Global Market. Both our independent registered public accounting firm and management will periodically meet privately with our audit committee.

In connection with this offering, our board of directors will adopt a written audit committee charter. We believe that the composition of our audit committee, and our audit committee's charter and functioning, will comply with the applicable requirements of The Nasdaq Global Market and SEC rules and regulations. We intend to comply with future requirements to the extent they become applicable to us.

Following the consummation of this offering, the full text of our audit committee charter will be posted on the investor relations portion of our website at https://www.xerispharma.com/. We do not incorporate the information contained on, or accessible through, our corporate website into this prospectus, and you should not consider it a part of this prospectus.

Compensation Committee

Upon the effectiveness of the registration statement of which this prospectus forms a part, our compensation committee will consist of , and will be chaired by . The functions of the compensation committee will include:

- annually reviewing and recommending to the board of directors the corporate goals and objectives relevant to the compensation of our Chief Executive Officer;
- evaluating the performance of our Chief Executive Officer in light of such corporate goals and objectives and based on such evaluation (i) reviewing and determining the cash compensation of our Chief Executive Officer and (ii) reviewing and approving grants and awards to our Chief Executive Officer under equity-based plans;
- reviewing and approving the cash compensation of our other executive officers;
- reviewing and establishing our overall management compensation, philosophy and policy;
- overseeing and administering our compensation and similar plans;
- evaluating and assessing potential and current compensation advisors in accordance with the independence standards identified in the applicable Nasdaq rules;
- reviewing and approving our policies and procedures for the grant of equity-based awards;
- reviewing and recommending to the board of directors the compensation of our directors;
- preparing our compensation committee report if and when required by SEC rules;
- reviewing and discussing annually with management our "Compensation Discussion and Analysis," if and when required, to be included in our annual proxy statement; and
- reviewing and approving the retention or termination of any consulting firm or outside advisor to assist in the evaluation of compensation matters.

Each member of our compensation committee will be a non-employee director, as defined in Rule 16b-3 promulgated under the Exchange Act, and an outside director, as defined pursuant to Section 162(m) of the Internal Revenue Code of 1986. Furthermore, we believe that, upon the consummation of this offering, the composition of our compensation committee, and our compensation committee's charter and functioning, will comply with the listing requirements of The Nasdaq Global Market and SEC rules and regulations.

In connection with this offering, our board of directors will adopt a written compensation committee charter. We believe that the composition of our compensation committee, and our compensation committee's charter and functioning, will comply with the applicable requirements of The Nasdaq Global Market and SEC rules and regulations. We intend to comply with future requirements to the extent they become applicable to us.

Following the consummation of this offering, the full text of our compensation committee charter will be posted on the investor relations portion of our website at https://www.xerispharma.com/. We do not incorporate the information contained on, or accessible through, our corporate website into this prospectus, and you should not consider it a part of this prospectus.

Nominating and Corporate Governance Committee

Upon the effectiveness of the registration statement of which this prospectus forms a part, our nominating and corporate governance committee will consist of and will be chaired by . The functions of the nominating and corporate governance committee will include:

- developing and recommending to the board of directors criteria for board and committee membership;
- establishing procedures for identifying and evaluating board of director candidates, including nominees recommended by stockholders;
- reviewing the composition of the board of directors to ensure that it is composed of members containing the appropriate skills and expertise to advise us;
- identifying individuals qualified to become members of the board of directors;
- recommending to the board of directors the persons to be nominated for election as directors and to each of the board's committees;
- developing and recommending to the board of directors a code of business conduct and ethics and a set of corporate governance guidelines; and
- overseeing the evaluation of our board of directors and management.

In connection with this offering, our board of directors will adopt a written nominating and corporate governance committee charter. We believe that the composition of our nominating and corporate governance committee, and our nominating and corporate governance committee's charter and functioning, will comply with the requirements of The Nasdaq Global Market and SEC rules and regulations that will be applicable to us. We intend to comply with future requirements to the extent they become applicable to us.

Following the consummation of this offering, the full text of our nominating and corporate governance committee charter will be posted on the investor relations portion of our website at https://www.xerispharma.com/. We do not incorporate the information contained on, or accessible through, our corporate website into this prospectus, and you should not consider it a part of this prospectus.

Compensation Committee Interlocks and Insider Participation

None of the members of our compensation committee is, or has at any time during the prior three years been, one of our officers or employees. None of our executive officers currently serve, or have in the past fiscal year served, as a member of the board of directors or compensation committee of any entity that has one or more of its executive officers serving as a member of our board of directors or our compensation committee.

Code of Business Conduct and Ethics

Our board of directors intends to adopt, subject to and effective upon the effectiveness of the registration statement of which this prospectus forms a part, a Code of Business Conduct and Ethics in connection with this offering. The Code of Business Conduct and Ethics will apply to all of our employees, officers (including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions), agents and representatives, including directors and consultants.

We intend to disclose future amendments to certain provisions of our Code of Business Conduct and Ethics and our Code of Ethics for our Chief Executive Officer, Chief Financial Officer and Principal Accounting Officer, or waivers of

those provisions, applicable to any principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions or our directors on our website identified below or in a current report on Form 8-K. Upon the completion of this offering, the full text of our Code of Business Conduct and Ethics and our Code of Ethics for our Chief Executive Officer, Chief Financial Officer and Principal Accounting Officer will be posted on our website at http://www.xerispharma.com. The inclusion of our website address in this prospectus does not include or incorporate by reference the information on our website into this prospectus, and you should not consider that information a part of this prospectus.

Limitations on Liability and Indemnification Agreements

As permitted by Delaware law, provisions in our amended and restated certificate of incorporation and amended and restated bylaws, both of which will become effective upon the consummation of this offering, limit or eliminate the personal liability of directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, a director exercise an informed business judgment based on all material information reasonably available to him or her. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or 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;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any act related to unlawful stock repurchases, redemptions or other distributions or payments of dividends; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not limit or eliminate our rights or any stockholder's rights to seek non-monetary relief, such as injunctive relief or rescission. These provisions will not alter a director's liability under other laws, such as the federal securities laws or other state or federal laws. Our amended and restated certificate of incorporation that will become effective upon the completion of this offering also authorizes us to indemnify our officers, directors and other agents to the fullest extent permitted under Delaware law.

As permitted by Delaware law, our amended and restated bylaws to be effective upon the consummation of this offering will provide that:

- we will indemnify our directors, officers, employees and other agents to the fullest extent permitted by law;
- we must advance expenses to our directors and officers, and may advance expenses to our employees and other agents, in connection with a legal proceeding to the fullest extent permitted by law; and
- the rights provided in our amended and restated bylaws are not exclusive.

If Delaware law is amended to authorize corporate action further eliminating or limiting the personal liability of a director or officer, then the liability of our directors or officers will be so eliminated or limited to the fullest extent permitted by Delaware law, as so amended. Our bylaws also 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 connection with their services to us, regardless of whether our bylaws permit such indemnification. We have obtained such insurance.

In addition to the indemnification that will be provided for in our amended and restated certificate of incorporation and amended and restated bylaws, we will enter into separate indemnification agreements with each of our directors and executive officers, which may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements may require us, among other things, to indemnify our directors and executive officers for some expenses, including attorneys' fees, expenses, judgments, fines and settlement amounts incurred by a director or executive officer in any action or proceeding arising out of his service as one of our directors or executive officers or any other company or enterprise to which the person provides services at our request. We believe that these provisions and agreements are necessary to attract and retain qualified individuals to serve as directors and executive officers.

This description of the indemnification provisions of our amended and restated certificate of incorporation, our amended and restated bylaws and our indemnification agreements is qualified in its entirety by reference to these

documents, each of which is attached as an exhibit to the registration statement of which this prospectus forms a part.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable.

There is no pending litigation or proceeding naming any of our directors or officers as to which indemnification is being sought, nor are we aware of any pending or threatened litigation that may result in claims for indemnification by any director or officer

EXECUTIVE COMPENSATION

Executive Compensation Overview

As an emerging growth company, we have opted to comply with the executive compensation disclosure rules applicable to "smaller reporting companies," as such term is defined in the rules promulgated under the Securities Act. This section provides an overview of the compensation awarded to, earned by, or paid to each individual who served as our principal executive officer at any time during fiscal year 2017, and our next two most highly compensated executive officers in respect of their service to our company for our fiscal year ended December 31, 2017. We refer to these individuals as our named executive officers. Our named executive officers are:

- Paul Edick, our President and Chief Executive Officer effective January 10, 2017;
- Nora Brennan, our Chief Financial Officer;
- John Shannon, our Executive Vice President and Chief Operating Officer; and
- Doug Baum, who served as our President and Chief Executive Officer through January 10, 2017.

Our executive compensation program is based on a pay for performance philosophy. Compensation for our executive officers is composed primarily of the following main components: base salary; bonus; and equity incentives in the form of options. Our executive officers, like all full-time employees, are eligible to participate in our health and welfare benefit plans. As we transition from a private company to a publicly traded company, we intend to evaluate our compensation values and philosophy and compensation plans and arrangements as circumstances require.

2017 Summary Compensation Table

The following table sets forth information regarding compensation awarded to, earned by, or paid to our named executive officers for services rendered to us in all capacities during the fiscal year ended December 31, 2017.

NAME AND PRINCIPAL POSITION	YEAR	SALARY ($)	OPTION AWARDS ($) (1)	NON-EQUITY PLAN COMPENSATION $ (2)	ALL OTHER COMPENSATION ($) (3)	TOTAL ($)
Paul Edick, *President and Chief Executive Officer(4)*	2017	489,583	657,134	250,000	—	1,396,717
Nora Brennan, *Chief Financial Officer*(5)	2017	147,917	166,192	64,167	—	378,276
John Shannon, *Executive Vice President and Chief Operating Officer*(6)	2017	218,750	168,029	100,834	—	487,613
Doug Baum *Former President and Chief Executive Officer*(7)	2017	10,781	—	—	291,949	302,730

(1) Amounts reflect the grant date fair value of option awards granted or modified in 2017 in accordance with the Financial Accounting Standards Board's Accounting Standards Codification Topic 718, or ASC 718. Such grant date fair value does not take into account any estimated forfeitures related to service-vesting conditions. For information regarding assumptions underlying the valuation of equity awards, see Note 2 to our financial statements and the discussion under "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies and the Use of Estimates—Stock based compensation" included elsewhere in this prospectus. These amounts do not correspond to the actual value that may be recognized by the named executive officers upon vesting of applicable awards.

(2) The amounts reported reflect a cash bonus approved by our board of directors based on achievement of individual and company performance goals in 2017, prorated for partial years of service with respect to Ms. Brennan and Mr. Shannon.

(3) The amounts reported reflect severance payments paid in connection with Mr. Baum's separation agreement.

(4) Mr. Edick commenced his employment with us in January 2017.

(5) Ms. Brennan commenced her employment with us in July 2017.

(6) Mr. Shannon commenced his employment with us in February 2017.

(7) Mr. Baum entered into a separation agreement with us on December 13, 2016, whereby he stepped down as President and Chief Executive Officer on January 10, 2017. As part of his separation agreement, as modified on January 6, 2017, he received salary

continuation in 2017 for nine months in an aggregate amount equal to $210,848, COBRA continuation benefits from us for nine months in an amount equal to $7,873, and forgiveness by us of the outstanding balance under a certain note and pledge agreement dated October 22, 2013 by and between us and Mr. Baum in the amount of $73,227.

Narrative to the 2017 Summary Compensation Table

Base Salary

We use base salaries to recognize the experience, skills, knowledge and responsibilities required of all our employees, including our named executive officers. Base salaries are reviewed annually, typically in connection with our annual performance review process, and adjusted from time to time to realign salaries with market levels after taking into account individual responsibilities, performance and experience.

Annual Bonus

We do not have a formal performance-based bonus plan. Our employment agreements with our named executive officers provide that the executive may be eligible to earn an annual performance bonus of up to a target percentage of the executive's base salary, as described further below under the section entitled "—Employment Arrangements and Severance Agreements with our Named Executive Officers". From time to time, our board of directors or compensation committee may approve annual bonuses for our named executive officers based on individual performance, company performance or as otherwise determined to be appropriate.

Equity Compensation

Although we do not have a formal policy with respect to the grant of equity incentive awards to our executive officers, or any formal equity ownership guidelines applicable to them, we believe that equity grants provide our executive officers with a strong link to our long-term performance, create an ownership culture and help to align the interests of our executive officers and our stockholders. In addition, we believe that equity grants with a time-based vesting feature promote executive retention because this feature incentivizes our executive officers to remain in our employment during the vesting period. Accordingly, our board of directors periodically reviews the equity incentive compensation of our named executive officers and from time to time may grant equity incentive awards to them in the form of stock options.

We typically grant stock option awards at the start of employment to each executive officer and our other employees as well as on an annual basis for retention purposes. We award our stock options on the date our board of directors approves the grant. We set the option exercise price and grant date fair value based on our per-share estimated valuation on the date of grant.

Employment Arrangements and Severance Agreements with our Named Executive Officers

We have entered into employment agreements with each of our named executive officers. These agreements set forth the initial terms and conditions of each executive's employment with us, including base salary, target annual bonus opportunity and standard employee benefit plan participation. In connection with this offering, we intend to enter into new employment agreements with each of our named executive officers.

These employment agreements provide for "at will" employment. The material terms of these employment agreements with our named executive officers are described below. The terms "cause" and "change in control" used in each existing employment agreement are defined in each employment agreement.

Paul Edick

We entered into an employment agreement with Mr. Paul Edick, our President and Chief Executive Officer, on January 9, 2017, pursuant to which Mr. Edick is entitled to receive an annual base salary of $500,000, an annual target bonus equal to 50% of his annual base salary based upon our board of directors' assessment of Mr. Edick's performance and our attainment of targeted goals approved by the board of directors, an equity grant and eligibility to participate in our benefit plans generally. This employment agreement also contains provisions related to confidentiality, inventions assignment and non-competition, pursuant to which Mr. Edick agrees to refrain from disclosing our confidential information, re-affirms the obligations contained in his Proprietary Information and Inventions Agreement and agrees not to compete with us during his employment.

Mr. Edick's employment agreement provides that, in the event that his employment is terminated by us without "cause" or by him upon a "material change" (as each term is defined in the employment agreement), subject to the

execution and effectiveness of a separation agreement and release, he will be entitled to receive (in addition to accrued compensation and benefits through the date of termination) (i) salary continuation based on his then-current base salary for 11 months and (ii) reimbursement of COBRA premiums for health benefit coverage for him and his immediate family in an amount equal to the monthly employer contribution that we would have made to provide health insurance to Mr. Edick had he remained employed with us for up to 11 months following termination.

Upon a "change in control," subject to the execution and effectiveness of a release, Mr. Edick shall be eligible to receive a lump sum amount equal to 18 months of his then-current base salary (but in no event less than $500,000), his annual target bonus reflective for a period of 18 months and 100% accelerated vesting of his outstanding stock options. Furthermore, the employment agreement provides that our board of directors may, in its sole discretion, consider providing Mr. Edick with a transaction bonus at the time of a "change in control". If he is terminated upon the effectiveness of the "change in control," he shall also receive reimbursement of COBRA premiums for health benefit coverage for him and his immediate family in an amount equal to the monthly employer contribution that we would have made to provide health insurance to Mr. Edick had he remained employed with us for up to 18 months following termination.

Nora Brennan

We entered into an employment agreement with Ms. Nora Brennan, our Chief Financial Officer, on May 11, 2017, pursuant to which Ms. Brennan is entitled to receive an annual base salary of $275,000, an annual target bonus equal to 40% of her annual base salary based upon our board of directors' assessment of Ms. Brennan's performance and our attainment of targeted goals approved by the board of directors, an equity grant and eligibility to participate in our benefit plans generally. This employment agreement also contains provisions related to confidentiality, inventions assignment and non-competition agreement with us, pursuant to which Ms. Brennan agrees to refrain from disclosing our confidential information, re-affirms the obligations contained in her Proprietary Information and Inventions Agreement and agrees not to compete with us during her employment.

Ms. Brennan's employment agreement provides that, in the event that her employment is terminated by us without "cause" or by her upon a "material change," subject to the execution and effectiveness of a separation agreement and release, she will be entitled to receive (in addition to accrued compensation and benefits through the date of termination) (i) salary continuation based on her then-current base salary for 10 months and (ii) reimbursement of COBRA premiums for health benefit coverage for her and her immediate family in an amount equal to the monthly employer contribution that we would have made to provide health insurance to Ms. Brennan had she remained employed with us for up to 10 months following termination.

Upon a "change in control," subject to the execution and effectiveness of a release, Ms. Brennan shall be eligible to receive a lump sum amount equal to 12 months of her then-current base salary (but in no event less than $275,000), her annual target bonus and 100% accelerated vesting of her outstanding stock options. Furthermore, the employment agreement provides that our board of directors may, in its sole discretion, consider providing Ms. Brennan with a transaction bonus at the time of a "change in control". If she is terminated upon the effectiveness of the "change in control," she shall also receive reimbursement of COBRA premiums for health benefit coverage for her and her immediate family in an amount equal to the monthly employer contribution that we would have made to provide health insurance to Ms. Brennan had she remained employed with us for up to 12 months following termination.

John Shannon

We entered into an employment agreement with Mr. John Shannon, our Executive Vice President and Chief Operating Officer, on February 16, 2017 pursuant to which Mr. Shannon is entitled to receive an annual base salary of $250,000, an annual target bonus equal to 40% of his annual base salary based upon our board of directors' assessment of Mr. Shannon's performance and our attainment of targeted goals as approved by the board of directors, an equity grant and eligibility to participate in our benefit plans generally. This employment agreement also contains provisions related to confidentiality, inventions assignment and non-competition agreement with us, pursuant to which Mr. Shannon agrees to refrain from disclosing our confidential information, re-affirms the obligations contained in his Proprietary Information and Inventions Agreement and agrees not to compete with us during his employment.

Mr. Shannon's employment agreement provides that, in the event that his employment is terminated by us without "cause" or by him upon a "material change," subject to the execution and effectiveness of a separation agreement and release, he will be entitled to receive (in addition to accrued compensation and benefits through the date of termination) (i) salary continuation based on his then-current base salary for 10 months and (ii) reimbursement of COBRA premiums for health benefit coverage for him and his immediate family in an amount equal to the monthly employer contribution that we would have made to provide health insurance to Mr. Shannon had he remained employed with us for up to 10 months following termination.

Upon a "change in control," subject to the execution and effectiveness of a release, Mr. Shannon shall be eligible to receive a lump sum amount equal to 12 months of his then-current base salary (but in no event less than $250,000), his annual target bonus and 100% accelerated vesting of his outstanding stock options. Furthermore, the employment agreement provides that our board of directors may, in its sole discretion, consider providing Mr. Shannon with a transaction bonus at the time of a "change in control". If he is terminated upon the effectiveness of the "change in control," he shall also receive reimbursement of COBRA premiums for health benefit coverage for him and his immediate family in an amount equal to the monthly employer contribution that we would have made to provide health insurance to Mr. Shannon had he remained employed with us for up to 12 months following termination.

Doug Baum

Mr. Baum entered into a separation notice and release agreement with us on December 13, 2016, as modified on January 6, 2017, which provided for his termination as our President and Chief Executive Officer effective January 10, 2017. Pursuant to the separation agreement, Mr. Baum was eligible to receive salary continuation for nine months, COBRA reimbursement for nine months, acceleration of his outstanding equity grants and the extension of the post-termination exercise period for certain portions of his option grants to the earlier of (i) January 9, 2019, (ii) a change in control and (iii) the original expiration dates as set forth in the applicable stock option agreement. Furthermore, we agreed to forgive the outstanding balance under a certain note and pledge agreement dated October 22, 2013 by and between us and Mr. Baum in the amount of $73,227.

Outstanding Equity Awards at 2017 Fiscal Year-End

The following table sets forth information concerning outstanding equity awards held by our named executive officers as of December 31, 2017.

	OPTION AWARDS [1]					STOCK AWARDS	
NAME	VESTING COMMENCEMENT DATE	NUMBER OF SECURITIES UNDERLYING UNEXERCISED OPTIONS (#) EXERCISABLE	NUMBER OF SECURITIES UNDERLYING UNEXERCISED OPTIONS (#) UNEXERCISABLE	OPTION EXERCISE PRICE ($)	OPTION EXPIRATION DATE	NUMBER OF SHARES OR UNITS OF STOCK THAT HAVE NOT VESTED (#)	MARKET VALUE OF SHARES OR UNITS OF STOCK THAT HAVE NOT VESTED ($) [2]
Paul Edick	6/12/2017(3)	114,942	9,421	0.87	6/11/2027	—	—
	1/9/2017(4)	1,189,904	—	0.87	1/27/2027	—	—
Nora Brennan	6/19/2017(5)	64,942	217,686	0.87	6/11/2027	50,000	
John Shannon	6/12/2017(6)	—	44,771	0.87	6/11/2027	—	—
	2/16/2017(7)	114,942	170,635	0.87	2/3/2027	—	—
Doug Baum	12/26/2013(8)	11,756	—	0.61	1/9/2019	—	—
	4/5/2013(8)	17,817	—	0.61	1/9/2019	—	—

(1) Each equity award was granted pursuant to our 2011 Stock Option/Stock Issuance Plan, as amended, or the 2011 Plan. The shares subject to each option vest with respect to 25% of the option on the one year anniversary of the applicable vesting commencement date and the remaining shares subject to each option vest in 36 equal installments on the corresponding day of each calendar month thereafter (or, if such calendar month does not have a corresponding day, on the last day of such month), in all cases subject to the optionee's continuous service to us through each vesting date. In addition, each option becomes exercisable as described in the footnotes below, where any unvested portion subject to a right of repurchase upon the optionee's termination of continuous service.

Upon a change in control of the Company while the optionee is providing services to us, 100% of the shares subject to the option shall vest and become exercisable immediately prior to the effective date of the change in control.

(2) The market value for our common stock is based on the assumed initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus.

(3) 114,942 of the shares subject to the option became exercisable as of June 12, 2017, and the remaining 9,421 shares became exercisable on January 1, 2018.

(4) The shares subject to this option are early exercisable.

(5) 114,942 of the shares subject to the option became exercisable as of the grant date, an additional 114,942 shares became exercisable on January 1, 2018, and the remaining 102,744 shares shall become exercisable on January 1, 2019. On December 29, 2017, Ms. Brennan early exercised 50,000 shares subject to the option, all of which were unvested as of December 31, 2017.

(6) The option shall become exercisable on January 1, 2019.

(7) 114,942 of the shares subject to the option became exercisable as of the grant date, an additional 114,942 shares became exercisable on January 1, 2018, and the remaining 55,693 shares shall become exercisable on January 1, 2019.

(8) Mr. Baum departed from his position as President and Chief Executive Officer on January 10, 2017. As part of his separation agreement, as modified on January 6, 2017, certain vested shares subject to outstanding stock options shall remain exercisable through the earlier of (i) January 9, 2019, (ii) a change in control, and (iii) the original expiration dates as set forth in the applicable stock option agreement.

Compensation Risk Assessment

We believe that although a portion of the compensation provided to our executive officers and other employees is performance-based, our executive compensation program does not encourage excessive or unnecessary risk taking.

This is primarily due to the fact that our compensation programs are designed to encourage our executive officers and other employees to remain focused on both short-term and long-term strategic goals. As a result, we do not believe that our compensation programs are reasonably likely to have a material adverse effect on us.

Employee Benefit and Equity Compensation Plans

2011 Stock Option/Stock Issuance Plan

Our 2011 Plan was adopted by our board of directors and our stockholders in March 2011. The 2011 Plan was most recently amended in January 2018 with the approval of both our board of directors and our stockholders. Under the 2011 Plan, we have reserved for issuance an aggregate of 8,397,950 shares of our common stock. The number of shares of common stock reserved for issuance is subject to adjustment in the event of any merger, consolidation, sale of all or substantially all of our assets, reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar transaction.

The shares of common stock underlying awards that (i) expire, are terminated or are canceled for any reason prior to the issuance of the underlying shares or (ii) are unvested and then repurchased at a price not greater than the option exercise or direct issue price paid per share shall be added back to the shares of common stock available for issuance under the 2011 Plan.

Our board of directors has acted as administrator of the 2011 Plan. The administrator has full power to select, from among the individuals eligible for awards, the individuals to whom awards will be granted, and to determine the specific terms and conditions of each award, subject to the provisions of the 2011 Plan. Persons eligible to participate in the 2011 Plan are those employees, officers and directors of, and consultants and advisors to, our company as selected from time to time by the administrator in its discretion.

The 2011 Plan permits the granting of (1) options to purchase common stock, including options intended to qualify as incentive stock options under Section 422 of the Internal Revenue Code of 1986, as amended, or the Code, and (2) shares of common stock directly, either through the immediate purchase of such shares or as a bonus for services rendered or pursuant to restricted stock units or other share right awards which vest upon the completion of designated service periods of pre-established performance milestones. In addition, the 2011 Plan permits the granting of restricted shares of common stock. The per share option exercise price of each option will be determined by the administrator but may not be less than par value of the common stock on the date of grant. The term of each option will be fixed by the administrator. The administrator will determine at what time or times each option may be exercised.

The 2011 Plan provides that upon the occurrence of a "change in control," as defined in the 2011 Plan, 100% of the shares subject to outstanding options shall vest and become exercisable immediately prior to the effective date of the change in control unless such option is assumed or continued or replaced with a cash retention program which preserves the spread existing on the unvested option shares at the time of the change in control. Immediately following the change in control, all outstanding options shall terminate and cease to be outstanding unless assumed or continued by the successor entity. Our board of directors has discretion to provide that all or some of the outstanding options shall vest and become exercisable in full immediately prior to a change in control event, even if such awards are not going to be assumed or continued. The 2011 Plan also provides that, upon the occurrence of a "change in control," the right of repurchase and vesting conditions for restricted stock and restricted stock units shall immediately vest in full prior to the "change in control" unless such awards are assigned to a successor entity or continued pursuant to the terms of the transaction. Our board of directors has discretion to provide that all or some of the outstanding restricted stock or restricted stock units shall vest and become exercisable in full immediately prior to a change in control event, even if such awards are not going to be assumed or continued.

The administrator may amend or modify the 2011 Plan at any time, subject to stockholder approval where such approval is required by applicable law. The administrator of the 2011 Plan may also amend or modify any outstanding award, provided that no amendment to an award may adversely affect a participant's rights without his or her consent.

The 2011 Plan will terminate automatically upon the earlier of (i) 10 years from the date on which the 2011 Plan was adopted by our board of directors, (ii) the date on which all shares available for issuance under the 2011 Plan shall have been issued as vested shares or (iii) the action of board to terminate of all outstanding options in connection with a "change in control." As of December 31, 2017, options to purchase 3,208,588 shares of common stock were outstanding under the 2011 Plan. Our board of directors has determined not to make any further awards under the 2011 Plan following the closing of this offering.

2018 Stock Option and Incentive Plan

Our 2018 Stock Option and Incentive Plan, or the 2018 Plan, was adopted by our board of directors on and approved by our stockholders on and will become effective upon the effectiveness of the registration statement of which this prospectus is part. The 2018 Plan will replace the 2011 Plan as our board of directors has determined not to make additional awards under the 2011 Plan following the closing of our initial public offering. The 2018 Plan allows the compensation committee to make equity-based and cash-based incentive awards to our officers, employees, directors and other key persons (including consultants).

We have initially reserved shares of our common stock, or the Initial Limit, for the issuance of awards under the 2018 Plan. The 2018 Plan provides that the number of shares reserved and available for issuance under the plan will automatically increase each January 1, beginning on January 1, 2019, by % of the outstanding number of shares of our common stock on the immediately preceding December 31, or such lesser number of shares as determined by our compensation committee, or the Annual Increase. This number is subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization.

The shares we issue under the 2018 Plan will be authorized but unissued shares or shares that we reacquire. The shares of common stock underlying any awards that are forfeited, cancelled, held back upon exercise or settlement of an award to satisfy the exercise price or tax withholding, reacquired by us prior to vesting, satisfied without any issuance of stock, expire or are otherwise terminated (other than by exercise) under the 2018 Plan and the 2011 Plan will be added back to the shares of common stock available for issuance under the 2018 Plan.

The maximum aggregate number of shares that may be issued in the form of incentive stock options shall not exceed the Initial Limit cumulatively increased on January 1, 2019 and on each January 1 thereafter by the lesser of the Annual Increase for such year or shares of common stock.

The 2018 Plan will be administered by our compensation committee. Our compensation committee has full power to select, from among the individuals eligible for awards, the individuals to whom awards will be granted, to make any combination of awards to participants, and to determine the specific terms and conditions of each award, subject to the provisions of the 2018 Plan. Persons eligible to participate in the 2018 Plan will be those full or part-time

officers, employees, non-employee directors and other key persons (including consultants) as selected from time to time by our compensation committee in its discretion.

The 2018 Plan permits the granting of both options to purchase common stock intended to qualify as incentive stock options under Section 422 of the Code, and options that do not so qualify. The option exercise price of each option will be determined by our compensation committee but may not be less than 100% of the fair market value of our common stock on the date of grant. The term of each option will be fixed by our compensation committee and may not exceed 10 years from the date of grant. Our compensation committee will determine at what time or times each option may be exercised.

Our compensation committee may award stock appreciation rights subject to such conditions and restrictions as it may determine. Stock appreciation rights entitle the recipient to shares of common stock, or cash, equal to the value of the appreciation in our stock price over the exercise price. The exercise price of each stock appreciation right may not be less than 100% of the fair market value of the common stock on the date of grant.

Our compensation committee may award restricted shares of common stock and restricted stock units to participants subject to such conditions and restrictions as it may determine. These conditions and restrictions may include the achievement of certain performance goals and/or continued employment with us through a specified vesting period. Our compensation committee may also grant shares of common stock that are free from any restrictions under the 2018 Plan. Unrestricted stock may be granted to participants in recognition of past services or other valid consideration and may be issued in lieu of cash compensation due to such participant. Our compensation committee may grant cash bonuses under the 2018 Plan to participants, subject to the achievement of certain performance goals.

The 2018 Plan provides that in the case of, and subject to, the consummation of a “sale event” as defined in the 2018 Plan, all outstanding awards may be assumed, substituted or otherwise continued by the successor entity. To the extent that the successor entity does not assume, substitute or otherwise continue such awards, then (i) all stock options and stock appreciation rights will automatically become fully exercisable and the restrictions and conditions on all other awards with time-based conditions will automatically be deemed waived, and awards with conditions and restrictions relating to the attainment of performance goals may become vested and non-forfeitable in connection with a sale event in the compensation committee’s discretion and (ii) upon the effectiveness of the sale event, the 2018 Plan and all awards will automatically terminate. In the event of such termination, (i) individuals holding options and stock appreciation rights will be permitted to exercise such options and stock appreciation rights (to the extent exercisable) prior to the sale event; or (ii) we may make or provide for a cash payment to participants holding options and stock appreciation rights equal to the difference between the per share cash consideration payable to stockholders in the sale event and the exercise price of the options or stock appreciation rights (to the extent then exercisable).

Our board of directors may amend or discontinue the 2018 Plan and our compensation committee may amend the exercise price of options and amend or cancel outstanding awards for purposes of satisfying changes in law or any other lawful purpose but no such action may adversely affect rights under an award without the holder’s consent. Certain amendments to the 2018 Plan require the approval of our stockholders. No awards may be granted under the 2018 Plan after the date that is 10 years from the date of stockholder approval. No awards under the 2018 Plan have been made prior to the date of this prospectus.

Senior Executive Cash Incentive Bonus Plan

In 2018, our board of directors adopted the Senior Executive Cash Incentive Bonus Plan, or the Bonus Plan. The Bonus Plan provides for cash bonus payments based upon the attainment of performance targets established by our compensation committee. The payment targets will be related to financial and operational measures or objectives with respect to our company, or corporate performance goals, as well as individual performance objectives.

Our compensation committee may select corporate performance goals from among the following: .

Each executive officer who is selected to participate in the Bonus Plan will have a target bonus opportunity set for each performance period. The bonus formulas will be adopted in each performance period by the compensation

committee and communicated to each executive. The corporate performance goals will be measured at the end of each performance period after our financial reports have been published or such other appropriate time as the compensation committee determines. If the corporate performance goals and individual performance objectives are met, payments will be made as soon as practicable following the end of each performance period. Subject to the rights contained in any agreement between the executive officer and us, an executive officer must be employed by us on the bonus payment date to be eligible to receive a bonus payment. The Bonus Plan also permits the compensation committee to approve additional bonuses to executive officers in its sole discretion and provides the compensation committee with discretion to adjust the size of the award as it deems appropriate to account for unforeseen factors beyond management's control that affected corporate performance.

401(k) Plan

We maintain the Xeris Pharmaceuticals, Inc. 401(k) Plan, a tax-qualified retirement plan for our employees. The 401(k) plan is intended to qualify under Section 401(k) of the Code, so that contributions to the 401(k) plan by employees or by us, and the investment earnings thereon, are not taxable to the employees until withdrawn from the 401(k) plan, and so that contributions by us, if any, will be deductible by us when made. All employees are eligible to participate in the 401(k) plan as of the first day of the first full month of their employment. Participants have the option to make two kinds of Elective Deferral Contributions: Pre-Tax Elective Deferrals and Roth Elective Deferrals. Any initial election or change of election by an eligible employee may be made at any time. Participants are always 100% vested in their contributions. While we have discretion to make matching contributions, we have historically not provided such contributions.

DIRECTOR COMPENSATION

The following table presents the total compensation for each person who served as a non-employee member of our board of directors and received compensation for such service during the fiscal year ended December 31, 2017. Other than as set forth in the table and described more fully below, we did not pay any compensation, make any equity awards to, or pay any other compensation to any of the non-employee members of our board of directors in 2017. Mr. Baum, our former President and Chief Executive Officer, did not receive any compensation for his service as a member of our board of directors during 2017. Mr. Baum's compensation for service as an employee for fiscal year 2017 is presented in "Executive Compensation – 2017 Summary Compensation Table." In addition, Paul Edick, our current President and Chief Executive Officer does not receive any compensation for his service as a member of our board of directors. Mr. Edick's compensation for service as an employee for fiscal year 2017 is presented in "Executive Compensation – 2017 Summary Compensation Table." We reimburse non-employee members of our board of directors for reasonable travel expenses.

Director Compensation Table—2017

NAME	FEES EARNED OR PAID IN CASH ($)	OPTION AWARDS ($) (1)	TOTAL ($)
Robert C. Faulkner (2)	—	—	—
Cary McNair (2)	—	—	—
Jonathan Rigby (3)	38,750	7,157	45,907
John Schmid (4)	10,000	7,157	17,157

(1) Each equity award was granted pursuant to our 2011 Plan and, unless otherwise described in the footnotes, the shares vest in 24 equal installments commencing as of May 14, 2017 for Mr. Rigby and September 30, 2017 for Mr. Schmid (or, if such calendar month does not have a corresponding day, on the last day of such month), in all cases subject to the optionee's continuous service to us through each vesting date. The shares subject to the options are early exercisable. Upon a change in control of the Company while the optionee is providing services to us and where the option is not assumed, continued, or substituted, 100% of the shares subject to the option shall vest and become exercisable immediately prior to the effective date of the change in control.

(2) Investor-appointed directors did not receive fees or other compensation for their service on our board of directors.

(3) The amounts reported were granted pursuant to the offer agreement, dated September 15, 2017, by and between Mr. Rigby and us. As of December 31, 2017, Mr. Rigby held unexercised options to purchase 50,080 shares of our common stock.

(4) The amounts reported were granted pursuant to the offer agreement, dated August 31, 2017, by and between Mr. Schmid and us. On December 29, 2017, Mr. Schmid early exercised all 10,080 shares subject to his option, all of which remained unvested as of December 31, 2017, and he did not hold any other unexercised options.

Non-Employee Director Compensation Policy

Our board of directors will adopt a non-employee director compensation policy, effective upon effectiveness of the registration statement of which this prospectus forms a part, that is designed to enable us to attract and retain, on a long-term basis, highly qualified non-employee directors. Under the policy, each director who is not an employee will be paid cash compensation from and after the completion of this offering, as set forth below:

	MEMBER ANNUAL FEE ($)	CHAIRMAN ADDITIONAL ANNUAL FEE ($)
Board of Directors		
Audit Committee		
Compensation Committee		
Nominating and Corporate Governance Committee		

In addition, each non-employee director elected or appointed to our board of directors following the completing of this offering will be granted options with a grant date fair value of $ on the date of such director's election or appointment to the board of directors, which will vest in the following manner, subject to continued service through such vesting date(s): . On the date of each annual meeting of stockholders of our company, each non-employee director will be granted options with a grant date fair value of $, which will vest in the following manner, subject to continued service as a director through such vesting date(s):

CERTAIN RELATIONSHIPS AND RELATED PERSON TRANSACTIONS

The following is a description of transactions or series of transactions since January 1, 2015, to which we were or will be a party, in which:

- the amount involved in the transaction exceeds $120,000; and
- in which any of our executive officers, directors and principal stockholders, including their immediate family members, had or will have a direct or indirect material interest.

Compensation arrangements for our named executive officers and our directors are described elsewhere in this prospectus under “Management—Director Compensation” and “Executive Compensation.”

Private Placements of Securities

Series C Preferred Stock Financing

In December 2015, with subsequent closings in December 2016, May 2017, December 2017 and February 2018, we sold an aggregate of 13,542,592 shares of our Series C preferred stock at a purchase price of $6.2705 per share for an aggregate principal amount of $84.9 million. The following table summarizes purchases of our Series C preferred stock by related persons:

STOCKHOLDER	SHARES OF SERIES C PREFERRED STOCK	TOTAL PURCHASE PRICE
Entities affiliated with Palmetto Partners, Ltd.	1,833,983	$ 11,499,996.41
Entities affiliated with Deerfield Management Company	3,114,584	$ 19,529,998.98
Entities affiliated with Redmile Group, LLC (1)	3,109,796	$ 19,499,995.82
Merieux Participations 2 S.A.S.	1,562,873	$ 9,799,995.15
Paul Edick(2)	23,922	$ 150,002.91
Nora Brennan	16,000	$ 100,328.00
John Shannon	16,000	$ 100,328.00
Ken Johnson	4,000	$ 25,082.00

(1) Robert Faulkner is a member of our board of directors and a partner at Redmile Group, LLC.
(2) Represents 23,922 shares of Series C preferred stock held by the Paul R. Edick 2008 Revocable Trust.

Agreements with Stockholders

In connection with our Series C preferred stock financing, we entered into investors’ rights, voting and right of first refusal and co-sale agreements containing registration rights, information rights, voting rights and rights of first refusal, among other things, with certain holders of our preferred stock and certain holders of our common stock. These stockholder agreements will terminate upon the closing of this offering, except for the registration rights granted under our investors’ rights agreement, as more fully described in “Description of Capital Stock—Registration Rights.”

Indemnification Agreements

In connection with this offering, we intend to enter into new agreements to indemnify our directors and executive officers. These agreements will, among other things, require us to indemnify these individuals for certain expenses (including attorneys’ fees), judgments, fines and settlement amounts reasonably incurred by such person in any action or proceeding, including any action by or in our right, on account of any services undertaken by such person on behalf of our company or that person’s status as a member of our board of directors to the maximum extent allowed under Delaware law.

Policies for Approval of Related Party Transactions

Our board of directors reviews and approves transactions with directors, officers and holders of five percent or more of our voting securities and their affiliates, each a related party. Prior to this offering, the material facts as to the

related party's relationship or interest in the transaction are disclosed to our board of directors prior to their consideration of such transaction, and the transaction is not considered approved by our board of directors unless a majority of the directors who are not interested in the transaction approve the transaction. Further, when stockholders are entitled to vote on a transaction with a related party, the material facts of the related party's relationship or interest in the transaction are disclosed to the stockholders, who must approve the transaction in good faith.

In connection with this offering, we expect to adopt a written related party transactions policy that such transactions must be approved by our audit committee. This policy will become effective on the date on which the registration statement of which this prospectus is part is declared effective by the SEC. Pursuant to this policy, the audit committee has the primary responsibility for reviewing and approving or disapproving "related party transactions," which are transactions between us and related persons in which the aggregate amount involved exceeds or may be expected to exceed $120,000 and in which a related person has or will have a direct or indirect material interest. For purposes of this policy, a related person will be defined as a director, executive officer, nominee for director, or greater than 5% beneficial owner of our common stock, in each case since the beginning of the most recently completed year, and their immediate family members.

PRINCIPAL STOCKHOLDERS

The following table sets forth, as of March 1, 2018, information regarding the beneficial ownership of our common stock by:

- each person, or group of affiliated persons, who is known by us to be the beneficial owner of five percent or more of our outstanding common stock (on an as-converted to common stock basis);
- each of our directors;
- each of our named executive officers; and
- all our directors and executive officers as a group (nine persons).

The information in the following table is calculated based on 25,245,871 shares of common stock outstanding before this offering and shares of common stock outstanding after this offering. The number of shares outstanding is based on the number of shares of common stock outstanding on March 1, 2018 as adjusted to give effect to:

- the automatic conversion of all outstanding shares of our convertible preferred stock into 21,083,391 shares of common stock upon the completion of this offering; and
- the sale of shares of common stock in this offering (assuming no exercise of the underwriters' option to purchase additional shares).

Each individual or entity shown on the table has furnished information with respect to beneficial ownership. Except as otherwise indicated below, the address of each officer, director and five percent stockholder listed below is c/o Xeris Pharmaceuticals, Inc., 180 N. LaSalle Street, Suite 1800, Chicago, IL 60601.

We have determined beneficial ownership in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities. In addition, the rules include shares of common stock issuable pursuant to the exercise of stock options that are either immediately exercisable or exercisable within 60 days of March 1, 2018. These shares are deemed to be outstanding and beneficially owned by the person holding those options for the purpose of computing the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the persons or entities identified in this table have sole voting and investment power with respect to all shares shown as beneficially owned by them.

	SHARES OF COMMON STOCK BENEFICIALLY OWNED	PERCENTAGE OF SHARES BENEFICIALLY OWNED	
		BEFORE OFFERING	AFTER OFFERING
5% Stockholders			
Entities affiliated with Palmetto Partners, Ltd. (1)	3,511,108	13.90%	%
Entities affiliated with Deerfield Management Company (2)	3,114,584	12.34%	%
Entities affiliated with Redmile Group, LLC (3)	3,109,796	12.32%	%
Merieux Participations 2 S.A.S. (4)	1,562,873	6.19%	%
John Kinzell (5)	1,337,891	5.30%	%
Directors, Named Executive Officers and Other Executive Officers			
Paul Edick (6)	1,513,189	5.66%	%
Steven Prestrelski (7)	1,014,617	3.99%	%
Douglas Baum (8)	672,399	2.66%	%
John Shannon (9)	396,348	1.55%	%
Nora Brennan (10)	373,628	1.46%	%
Ken Johnson (11)	144,000	*	%
Robert Faulkner	—	—	
Cary McNair .	—	—	
Jonathan Rigby .	—	—	
John Schmid	10,080	*	%
All current executive officers and directors as a group (9 persons) (12)	3,451,862	12.45%	%

* Less than one percent.

(1) Consists of (i) 1,657,125 shares of common stock issuable upon conversion of preferred stock held by Palmetto Partners 2014, LP., (ii) 1,036,599 shares of common stock issuable upon conversion of preferred stock held by Palmetto Partners 2015, LP, (iii) 797,384 shares of common stock issuable upon conversion of preferred stock held by Palmetto Partners, Ltd. and (iv) 20,000 shares of common stock underlying options exercisable within 60 days of March 1, 2018 held by Palmetto Partners 2015, LP. Palmetto Partners, Ltd. is the general partner of each of Palmetto Partners 2014, LP and Palmetto Partners 2015, LP and may be deemed to beneficially own the securities held by such funds. The address of Palmetto Partners, Ltd. is 109 N Post Oak Ln., Suite 600, Houston, TX 77024.

(2) Consists of (i) 1,557,292 shares of common stock issuable upon conversion of preferred stock held by Deerfield Private Design Fund III, L.P. and (ii) 1,557,292 shares of common stock issuable upon conversion of preferred stock held by Deerfield Special Situations Fund, L.P. Deerfield Mgmt, L.P. is the general partner of Deerfield Special Situations Fund, L.P., and Deerfield Mgmt III, L.P. is the general partner of Deerfield Private Design Fund III, L.P. (collectively with Deerfield Special Situations Fund, L.P., the "Deerfield Funds"). Deerfield Management Company, L.P. is the investment manager of each of the Deerfield Funds. James E. Flynn is the sole member of the general partner of Deerfield Mgmt, L.P., Deerfield Mgmt III, L.P. and Deerfield Management Company, L.P. Deerfield Mgmt, L.P., Deerfield Management Company, L.P. and Mr. James E. Flynn may be deemed to beneficially own the securities held by Deerfield Special Situations Fund, L.P. Deerfield Mgmt III, L.P., Deerfield Management Company, L.P. and Mr. James E. Flynn may be deemed to beneficially own the securities held by Deerfield Private Design Fund III, L.P. The address of the Deerfield Funds is 780 Third Avenue, 37th Floor, New York, NY 10017.

(3) Consists of (i) 556,135 shares of common stock issuable upon conversion of preferred stock held by Redmile Biopharma Investments I, L.P., (ii) 402,161 shares of common stock issuable upon conversion of preferred stock held by Redmile Capital Fund, LP, (iii) 653,678 shares of common stock issuable upon conversion of preferred stock held by Redmile Capital Offshore Fund II, Ltd., (iv) 127,764 shares of common stock issuable upon conversion of preferred stock held by Redmile Capital Offshore Fund, Ltd., (v) 1,270,392 shares of common stock issuable upon conversion of preferred stock held by Redmile Private Investments II, LP and (vi) 99,666 shares of common stock issuable upon conversion of preferred stock held by Redmile Strategic Master Fund, LP. Redmile Group, LLC is the investment manager of each of Redmile Biopharma Investments I, L.P., Redmile Capital Fund, LP, Redmile Capital Offshore Fund II, Ltd., Redmile Capital Offshore Fund, Ltd., Redmile Private Investments II, L.P. and Redmile Strategic Master Fund, LP (the "Redmile Funds"). Redmile Group, LLC may be deemed to beneficially own the securities held by the Redmile Funds. The address of Redmile Group, LLC is One Letterman Drive, Building D, Suite D3-300, San Francisco, CA 94129.

(4) Consists of 1,562,873 shares of common stock issuable upon conversion of preferred stock held by Merieux Participants 2 S.A.S. Voting and investment power over the securities held by Merieux Participants 2 S.A.S. is exercised by its board of directors. The address of Merieux Participants 2 S.A.S. is 17 Rue Bourgelat, Lyon, France 69002.

(5) Consists of (i) 1,135,597 shares of common stock, (ii) 134,475 shares of common stock issuable upon conversion of preferred stock, (iii) 31,250 shares of common stock held by the John H. Kinzell and Ann J. Kinzell 2011 Trust (the "Trust Shares") and (iv) 36,569

shares of common stock issuable upon conversion of preferred stock held by Ann Kinzell (the “Kinzell Shares”). Mr. Kinzell may be deemed to beneficially own both the Trust Shares and the Kinzell Shares, which are held in a shared trust and by Ann Kinzell, Mr. Kinzell’s wife, respectively. Mr. Kinzell disclaims beneficial ownership of the Trust Shares and the Kinzell Shares and this shall not be deemed an admission that he is the beneficial owner of the Trust Shares and the Kinzell Shares.

(6) Consists of (i) 1,489,267 shares of common stock underlying options exercisable within 60 days of March 1, 2018 and (ii) 23,922 shares of common stock issuable upon conversion of preferred stock held by the Paul R. Edick 2008 Revocable Trust (the “2008 Trust Shares”). Mr. Edick may be deemed to beneficially own the 2008 Trust Shares. Mr. Edick disclaims beneficial ownership of the 2008 Trust Shares and this shall not be deemed an admission that he is the beneficial owner of the 2008 Trust Shares.

(7) Consists of (i) 775,000 shares of common stock, (ii) 24,509 shares of common stock issuable upon conversion of preferred stock, (iii) 173,067 shares of common stock underlying options exercisable within 60 days of March 1, 2018 and (iv) 42,041 shares of common stock issuable upon conversion of preferred stock held by Steven Prestrelski and Tracy Yeo.

(8) Consists of (i) 629,109 shares of common stock, (ii) 13,717 shares of common stock issuable upon conversion of preferred stock and (iii) 29,573 shares of common stock underlying options exercisable within 60 days of March 1, 2018.

(9) Consists of (i) 16,000 shares of common stock issuable upon conversion of preferred stock and (ii) 380,348 shares of common stock underlying options exercisable within 60 days of March 1, 2018.

(10) Consists of (i) 50,000 shares of common stock, (ii) 16,000 shares of common stock issuable upon conversion of preferred stock and (iii) 307,628 shares of common stock underlying options exercisable within 60 days of March 1, 2018.

(11) Consists of (i) 4,000 shares of common stock issuable upon conversion of preferred stock and (ii) 140,000 shares of common stock underlying options exercisable within 60 days of March 1, 2018.

(12) Includes an aggregate of 2,490,310 shares of common stock underlying options exercisable within 60 days of March 1, 2018 held by nine executive officers and directors.

DESCRIPTION OF CAPITAL STOCK

The following descriptions are summaries of the material terms of our amended and restated certificate of incorporation and amended and restated bylaws, which will be effective upon the closing of this offering. The descriptions of the common stock and preferred stock give effect to changes to our capital structure that will occur upon the completion of this offering. We refer in this section to our amended and restated certificate of incorporation as our certificate of incorporation, and we refer to our amended and restated bylaws as our bylaws.

General

Upon completion of this offering, our authorized capital stock will consist of shares of common stock, par value $0.0001 per share, and shares of preferred stock, par value $0.0001 per share, all of which shares of preferred stock will be undesignated.

As of December 31, 2017, 4,162,480 shares of our common stock, 1,843,965 shares of Series A preferred stock, 5,696,834 shares of Series B preferred stock were outstanding, and 12,834,912 shares of Series C preferred stock were outstanding and held. This amount does not take into account the conversion of all outstanding shares of our preferred stock into common stock upon the closing of this offering.

Common Stock

The holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of the stockholders. The holders of our common stock do not have any cumulative voting rights. Holders of our common stock are entitled to receive ratably any dividends declared by our board of directors out of funds legally available for that purpose, subject to any preferential dividend rights of any outstanding preferred stock. Our common stock has no preemptive rights, conversion rights or other subscription rights or redemption or sinking fund provisions.

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in all assets remaining after payment of all debts and other liabilities and any liquidation preference of any outstanding preferred stock. The shares to be issued by us in this offering will be, when issued and paid for, validly issued, fully paid and non-assessable.

Preferred Stock

Upon the completion of this offering, all outstanding shares of our preferred stock will be converted into shares of our common stock. Upon the consummation of this offering, our board of directors will have the authority, without further action by our stockholders, to issue up to shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of common stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon our liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of our company or other corporate action. Immediately after consummation of this offering, no shares of preferred stock will be outstanding, and we have no present plan to issue any shares of preferred stock.

Options

As of December 31, 2017, options to purchase 3,208,588 shares of common stock were outstanding under our 2011 Plan.

Warrants

As of December 31, 2017, we had outstanding warrants to purchase 35,500 shares of Series B convertible preferred stock at an exercise price of $3.319 per share.

Registration Rights

Upon the completion of this offering, the holders of 24,614,512 shares of our common stock, including those issuable upon the conversion of preferred stock, will be entitled to rights with respect to the registration of these securities under the Securities Act. These rights are provided under the terms of an investors' rights agreement between us, certain holders of our common stock and holders of our preferred stock. The investors' rights agreement includes demand registration rights, short-form registration rights and piggyback registration rights. All fees, costs and expenses of underwritten registrations under this agreement will be borne by us and all selling expenses, including underwriting discounts and selling commissions, will be borne by the holders of the shares being registered.

Demand Registration Rights

Beginning 180 days after the effective date of this registration statement, the holders of 24,614,512 shares of our common stock, including those issuable upon the conversion of shares of our preferred stock upon closing of this offering, are entitled to demand registration rights. Under the terms of the investors' rights agreement, we will be required, upon the written request of holders of at least 20% of the securities eligible for registration then outstanding or such lesser percentage that would result in an aggregate offering price of at least $10.0 million, to file a registration statement and use commercially reasonable efforts to effect the registration of all or a portion of these shares for public resale. We are required to effect only two registrations pursuant to this provision of the investors' rights agreement.

Short-Form Registration Rights

Pursuant to the investors' rights agreement, if we are eligible to file a registration statement on Form S-3, upon the written request of majority in interest of these holders to sell registrable securities at an aggregate price of at least $1.0 million, we will be required to use commercially reasonable efforts to effect a registration of such shares. We are not required to effect more than registrations that have been declared or ordered effective by the SEC pursuant to this provision of the investors' rights agreement. The right to have such shares registered on Form S-3 is further subject to other specified conditions and limitations.

Piggyback Registration Rights

Pursuant to the investors' rights agreement, if we register any of our securities either for our own account or for the account of other security holders, the holders of 24,614,512 shares of our common stock, including those issuable upon the conversion of our preferred stock, are entitled to include their shares in the registration. Subject to certain exceptions contained in the investors' rights agreement, we and the underwriters may limit the number of shares included in the underwritten offering to the number of shares which we and the underwriters determine in our sole discretion will not jeopardize the success of the offering.

Indemnification

Our investors' rights agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable securities in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them.

Expiration of Registration Rights

The demand registration rights and short form registration rights granted under the investors' rights agreement will terminate on the fifth anniversary of the completion of this offering or at such time after this offering when the holders' shares may be sold without restriction pursuant to Rule 144 within a three-month period.

Anti-Takeover Effects of Delaware Law and Certain Provisions of our Certificate of Incorporation Amended and Restated Bylaws

Our certificate of incorporation and bylaws include a number of provisions that may have the effect of delaying, deferring or preventing another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Board Composition and Filling Vacancies

Our certificate of incorporation provides for the division of our board of directors into three classes serving staggered three-year terms, with one class being elected each year. Our certificate of incorporation also provides that directors may be removed only for cause and then only by the affirmative vote of the holders of two-thirds or more of the shares then entitled to vote at an election of directors. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may only be filled by the affirmative vote of a majority of our directors then in office even if less than a quorum. The classification of directors, together with the limitations on removal of directors and treatment of vacancies, has the effect of making it more difficult for stockholders to change the composition of our board of directors.

No Written Consent of Stockholders

Our certificate of incorporation provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting. This limit may lengthen the amount of time required to take stockholder actions and would prevent the amendment of our bylaws or removal of directors by our stockholders without holding a meeting of stockholders.

Meetings of Stockholders

Our certificate of incorporation and bylaws provide that only a majority of the members of our board of directors then in office may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our bylaws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance Notice Requirements

Our bylaws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. Our bylaws specify the requirements as to form and content of all stockholders' notices. These requirements may preclude stockholders from bringing matters before the stockholders at an annual or special meeting.

Amendment to Certificate of Incorporation and Bylaws

Any amendment of our certificate of incorporation must first be approved by a majority of our board of directors, and if required by law or our certificate of incorporation, must thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment and a majority of the outstanding shares of each class entitled to vote thereon as a class, except that the amendment of the provisions relating to stockholder action, board composition, limitation of liability and the amendment of our bylaws and certificate of incorporation must be approved by not less than two-thirds of the outstanding shares entitled to vote on the amendment, and not less than two-thirds of the outstanding shares of each class entitled to vote thereon as a class. Our bylaws may be amended by the affirmative vote of a majority of the directors then in office, subject to any limitations set forth in the bylaws; and may also be amended by the affirmative vote of at least two-thirds of the outstanding shares entitled to vote on the amendment, or, if our board of directors recommends that the stockholders approve the amendment, by the affirmative vote of the majority of the outstanding shares entitled to vote on the amendment, in each case voting together as a single class.

Undesignated Preferred Stock

Our certificate of incorporation provides for authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets

available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

Choice of Forum

Our amended and restated certificate of incorporation that will become effective upon the completion of this offering will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a breach of fiduciary duty by one or more of our directors, officers or employees, (iii) any action asserting a claim against us arising pursuant to the Delaware General Corporation Law or (iv) any action asserting a claim against us that is governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and consented to the forum provisions in our amended and restated certificate of incorporation. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation and bylaws has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable.

Stock Exchange Listing

We intend to apply to list our common stock on the Nasdaq Global Market under the proposed trading symbol "XERS."

Transfer Agent and Registrar

The Transfer Agent and Registrar for our common stock will be .

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our shares. Future sales of our common stock in the public market, or the availability of such shares for sale in the public market, could adversely affect market prices prevailing from time to time. As described below, only a limited number of shares will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nevertheless, sales of shares of our common stock in the public market after such restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price at such time and our ability to raise equity capital in the future.

Based on the number of shares outstanding as of , 2018, upon the completion of this offering, shares of our common stock will be outstanding, assuming the issuance of shares offered by us in this offering, no exercise of the underwriters' option to purchase additional shares and no exercise of outstanding options. Of the outstanding shares, all of the shares sold in this offering will be freely tradable, except that any shares held by our affiliates, as that term is defined in Rule 144 under the Securities Act, may only be sold in compliance with the limitations described below, and restricted shares of common stock are subject to time-based vesting terms. All remaining shares of common stock held by existing stockholders immediately prior to the completion of this offering will be "restricted securities" as such term is defined in Rule 144. These restricted securities were issued and sold by us, or will be issued and sold by us, in private transactions and are eligible for public sale only if registered under the Securities Act or if they qualify for an exemption from registration under the Securities Act, including the exemptions provided by Rule 144 or Rule 701, summarized below.

Rule 144

In general, a person who has beneficially owned restricted stock for at least six months would be entitled to sell their securities provided that (i) 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 (ii) we are subject to the periodic reporting requirements of the Exchange Act for at least 90 days before the sale. Persons who have beneficially owned restricted shares 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 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 shares outstanding as of , 2018; or
- the average weekly trading volume of our common stock on The Nasdaq Global Market 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 are subject to the periodic reporting requirements of the Exchange Act 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

Rule 701 under the Securities Act, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with certain restrictions of Rule 144, including the holding period requirement. Most of our employees, executive officers or directors who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling their shares.

However, substantially all Rule 701 shares are subject to lock-up agreements as described below and under "Underwriting" included elsewhere in this prospectus and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

Lock-Up Agreements

We, all of our directors and officers and substantially all of our stockholders have agreed not to sell or otherwise transfer or dispose of any of our securities for a period of 180 days from the date of this prospectus, subject to

certain exceptions. The representatives of the underwriters in this offering may, in their sole discretion, permit early release of shares subject to the lock-up agreements. See the section entitled “Underwriting” appearing elsewhere in this prospectus for more information.

Registration Rights

Upon completion of this offering, certain holders of our securities will be entitled to various rights with respect to registration of their shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming fully tradable without restriction under the Securities Act immediately upon the effectiveness of the registration. See the section entitled “Description of Capital Stock—Registration Rights” appearing elsewhere in this prospectus for more information.

Equity Incentive Plans

We intend to file one or more registration statements on Form S-8 under the Securities Act to register all of our shares issued or reserved for issuance under our equity incentive plans. The first such registration statement is expected to be filed soon after the date of this prospectus and will automatically become effective upon filing with the SEC. Accordingly, shares registered under such registration statement will be available for sale in the open market, unless such shares are subject to vesting restrictions with us or the lock-up restrictions described above.

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

The following discussion is a summary of the material U.S. federal income tax considerations applicable to non-U.S. holders (as defined below) with respect to their ownership and disposition of shares of our common stock issued pursuant to this offering. For purposes of this discussion, a non-U.S. holder means a beneficial owner of our common stock that is for U.S. federal income tax purposes:

- a non-resident alien individual;
- a corporation or other organization taxable as a corporation for U.S. federal income tax purposes that is created or organized in or under laws other than the laws of the United States, any state thereof, or the District of Columbia;
- an estate the income of which is not subject to U.S. federal income tax on a net income basis; or
- a trust the income of which is not subject to U.S. federal income tax on a net income basis and that (1) is not subject to the primary supervision of a court within the United States or over which no U.S. persons have authority to control all substantial decisions and (2) has not made an election to be treated as a U.S. person.

This discussion does not address the tax treatment of partnerships or other entities that are pass-through entities for U.S. federal income tax purposes or persons that hold their common stock through partnerships or other pass-through entities. A partner in a partnership or other pass-through entity that will hold our common stock should consult his, her or its tax advisor regarding the tax consequences of acquiring, holding and disposing of our common stock through a partnership or other pass-through entity, as applicable.

This discussion is based on current provisions of the U.S. Internal Revenue Code of 1986, as amended, which we refer to as the Code, existing and proposed U.S. Treasury Regulations promulgated thereunder, current administrative rulings and judicial decisions, all as in effect as of the date of this prospectus and, all of which are subject to change or to differing interpretation, possibly with retroactive effect. Any such change or differing interpretation could alter the tax consequences to non-U.S. holders described in this prospectus. There can be no assurance that the Internal Revenue Service, which we refer to as the IRS, will not challenge one or more of the tax consequences described herein. We assume in this discussion that a non-U.S. holder holds shares of 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 aspects of U.S. federal income taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder's individual circumstances nor does it address any U.S. state, local or non-U.S. taxes, the alternative minimum tax, the Medicare tax on net investment income, the rules regarding qualified small business stock within the meaning of Section 1202 of the Code, or any other aspect of any U.S. federal tax other than the income tax. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as:

- insurance companies;
- tax-exempt or governmental organizations;
- financial institutions;
- brokers or dealers in securities;
- regulated investment companies;
- pension plans;
- "controlled foreign corporations," "passive foreign investment companies," and corporations that accumulate earnings to avoid U.S. federal income tax;
- "qualified foreign pension funds," or entities wholly owned by a "qualified foreign pension fund";
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons that hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment; and
- certain U.S. expatriates.

This discussion is for general information only and is not tax advice. Accordingly, all prospective non-U.S. holders of our common stock should consult their tax advisors with respect to the U.S. federal, state, local and non-U.S. tax consequences of the purchase, ownership and disposition of our common stock.

Distributions on Our Common Stock

Distributions, if any, on our common stock 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. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to such holder's tax basis in the common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below in "Gain on Sale, or Other Taxable Disposition of Our Common Stock." Any such distributions will also be subject to the discussions below under the sections titled "Backup Withholding and Information Reporting" and "Withholding and Information Reporting Requirements—FATCA."

Subject to the discussion in the following two paragraphs in this section, dividends paid to a non-U.S. holder generally will be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

A non-U.S. holder of our common stock who claims the benefit of an applicable income tax treaty between the United States and such holder's country of residence generally will be required to provide a properly executed IRS Form W-8BEN or W-8BEN-E (or successor form) to the applicable withholding agent and satisfy applicable certification and other requirements. Non-U.S. holders are urged to consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty. A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing a U.S. tax return with the IRS.

Gain on Sale or Other Taxable Disposition of Our Common Stock

Subject to the discussions below under "Backup Withholding and Information Reporting" and "Withholding and Information Reporting Requirements—FATCA," a non-U.S. holder generally will not be subject to any U.S. federal income tax on any gain realized upon such holder's sale or other taxable disposition of shares of our common stock unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a U.S. trade or business and, if an applicable income tax treaty so provides, is attributable to a permanent establishment or a fixed-base maintained by such non-U.S. holder in the United States, in which case the non-U.S. holder generally will be taxed on a net income basis at the graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code) and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above in "Distributions on Our Common Stock" also may apply;
- the non-U.S. holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year of the disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence) on the net gain derived from the disposition, which may be offset by certain U.S. source capital losses of the non-U.S. holder, if any (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; or

- we are, or have been, at any time during the five-year period preceding such sale of other taxable disposition (or the non-U.S. holder's holding period, if shorter) a "U.S. real property holding corporation," unless our common stock is regularly traded on an established securities market and the non-U.S. holder holds no more than 5% of our outstanding common stock, directly or indirectly, actually or constructively, during the shorter of the 5-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. Generally, a corporation is a U.S. real property holding corporation only if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we do not believe that we are, or have been, a U.S. real property holding corporation, or that we are likely to become one in the future. No assurance can be provided that our common stock will be regularly traded on an established securities market for purposes of the rules described above.

Backup Withholding and Information Reporting

We must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions on our common stock paid to such holder and the tax withheld, if any, with respect to such distributions. Non-U.S. holders may have to comply with specific certification procedures to establish that the holder is not a United States person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on our common stock. Dividends paid to non-U.S. holders subject to withholding of U.S. federal income tax, as described above in "Distributions on Our Common Stock," generally will be exempt from U.S. backup withholding.

Information reporting and backup withholding will generally apply to the proceeds of a disposition of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker.

Non-U.S. holders should consult their tax advisors regarding the application of the information reporting and backup withholding rules to them. Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder's U.S. federal income tax liability, if any, provided that an appropriate claim is filed with the IRS in a timely manner.

Withholding and Information Reporting Requirements—FATCA

Provisions of the Code commonly referred to as the Foreign Account Tax Compliance Act, or FATCA, generally impose a U.S. federal withholding tax at a rate of 30% on payments of dividends on, or gross proceeds from the sale or other disposition of, our common stock paid to a foreign entity unless (i) if the foreign entity is a "foreign financial institution," such foreign entity undertakes certain due diligence, reporting, withholding, and certification obligations, (ii) if the foreign entity is not a "foreign financial institution," such foreign entity identifies certain of its U.S. investors, if any, or (iii) the foreign entity is otherwise exempt under FATCA. Under applicable U.S. Treasury regulations, withholding under FATCA currently applies to payments of dividends on our common stock, but will only apply to payments of gross proceeds from a sale or other disposition of our common stock made after December 31, 2018. Under certain circumstances, a non-U.S. holder may be eligible for refunds or credits of this withholding tax. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this paragraph. Non-U.S. holders should consult their tax advisors regarding the possible implications of this legislation on their investment in our common stock and the entities through which they hold our common stock, including, without limitation, the process and deadlines for meeting the applicable requirements to prevent the imposition of the 30% withholding tax under FATCA.

UNDERWRITING

Subject to the terms and conditions set forth in the underwriting agreement, dated , 2018, among us and Jefferies LLC and Leerink Partners LLC, as the representatives of the underwriters named below, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the respective number of shares of common stock shown opposite its name below:

UNDERWRITER	NUMBER OF SHARES
Jefferies LLC	
Leerink Partners LLC	
RBC Capital Markets, LLC	
Mizuho Securities USA LLC	
Total	

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the shares of common stock if any of them are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated. We have agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

The underwriters have advised us that, following the completion of this offering, they currently intend to make a market in the common stock as permitted by applicable laws and regulations. However, the underwriters are not obligated to do so, and the underwriters may discontinue any market-making activities at any time without notice in their sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the common stock, that you will be able to sell any of the common stock held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriters are offering the shares of common stock subject to their acceptance of the shares of common stock from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commission and Expenses

The underwriters have advised us that they propose to offer the shares of common stock to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers, which may include the underwriters, at that price less a concession not in excess of $ per share of common stock. The underwriters may allow, and certain dealers may reallow, a discount from the concession not in excess of $ per share of common stock to certain brokers and dealers. After the offering, the initial public offering price, concession and reallowance to dealers may be reduced by the representatives. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus.

The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	PER SHARE		TOTAL	
	WITHOUT OPTION TO PURCHASE ADDITIONAL SHARES	WITH OPTION TO PURCHASE ADDITIONAL SHARES	WITHOUT OPTION TO PURCHASE ADDITIONAL SHARES	WITH OPTION TO PURCHASE ADDITIONAL SHARES
Public offering price	$	$	$	$
Underwriting discounts and commissions paid by us	$	$	$	$
Proceeds to us, before expenses	$	$	$	$

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately $. We have also agreed to pay the filing fees incident to, and the fees and disbursements of counsel for the underwriters in connection with, the required review by the Financial Industry Regulatory Authority, Inc.

Determination of Offering Price

Prior to this offering, there has not been a public market for our common stock. Consequently, the initial public offering price for our common stock will be determined by negotiations between us and the representatives. Among the factors to be considered in these negotiations will be prevailing market conditions, our financial information, market valuations of other companies that we and the underwriters believe to be comparable to us, estimates of our business potential, the present state of our development and other factors deemed relevant.

We offer no assurances that the initial public offering price will correspond to the price at which the common stock will trade in the public market subsequent to the offering or that an active trading market for the common stock will develop and continue after the offering.

Listing

We intend to apply to have our common stock listed on The Nasdaq Global Market under the trading symbol “XERS”.

Stamp Taxes

If you purchase shares of common stock offered in this prospectus, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus.

Option to Purchase Additional Shares

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase, from time to time, in whole or in part, up to an aggregate of shares from us at the public offering price set forth on the cover page of this prospectus, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional shares proportionate to that underwriter’s initial purchase commitment as indicated in the table above. This option may be exercised only if the underwriters sell more shares than the total number set forth on the cover page of this prospectus.

No Sales of Similar Securities

We, our officers, directors and holders of all or substantially all our outstanding capital stock and other securities have agreed, subject to specified exceptions, not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open “put equivalent position” within the meaning of Rule 16a-l(h) under the Securities Exchange Act of 1934, as amended, or

- otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially, or
- publicly announce an intention to do any of the foregoing for a period of 180 days after the date of this prospectus without the prior written consent of the representatives.

This restriction terminates after the close of trading of the common stock on and including the 180th day after the date of this prospectus.

The representatives may, in their sole discretion and at any time or from time to time before the termination of the 180-day period release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our shareholders who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period.

Stabilization

The underwriters have advised us that they, pursuant to Regulation M under the Securities Exchange Act of 1934, as amended, certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of the common stock at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve either “covered” short sales or “naked” short sales.

“Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional shares of our common stock in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares of our common stock or purchasing shares of our common stock in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares.

“Naked” short sales are sales in excess of the option to purchase additional shares of our common stock. 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 shares of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of shares of common stock on behalf of the underwriters for the purpose of fixing or maintaining the price of the common stock. A syndicate covering transaction is the bid for or the purchase of shares of common stock on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. Similar to other purchase transactions, the underwriter’s purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the common stock originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

Electronic Distribution

A prospectus in electronic format may be made available by e-mail or on the web sites or through online services maintained by one or more of the underwriters or their affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a

specific number of shares of common stock for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' web sites and any information contained in any other web site maintained by any of the underwriters is not part of this prospectus, has not been approved and/or endorsed by us or the underwriters and should not be relied upon by investors.

Other Activities and Relationships

The underwriters and certain of their 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. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their 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 such investment and securities activities may involve securities and/or instruments issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/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 and/or short positions in such securities and instruments.

Selling Restrictions

Canada

Resale Restrictions

The distribution of our shares of common stock in Canada is being made only in the provinces of Ontario, Quebec, Manitoba, Alberta and British Columbia on a private placement basis exempt from the requirement that we prepare and file a prospectus with the securities regulatory authorities in each province where trades of these securities are made. Any resale of the shares of common stock in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the securities.

Representations of Canadian Purchasers

By purchasing our shares of common stock in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us and the dealer from whom the purchase confirmation is received that:

- the purchaser is entitled under applicable provincial securities laws to purchase the shares without the benefit of a prospectus qualified under those securities laws as it is an "accredited investor" as defined under National Instrument 45-106—*Prospectus Exemptions,*
- the purchaser is a "permitted client" as defined in National Instrument 31-103—*Registration Requirements,* Exemptions *and Ongoing Registrant Obligations*,
- where required by law, the purchaser is purchasing as principal and not as agent, and
- the purchaser has reviewed the text above under Resale Restrictions.

Conflicts of Interest

Canadian purchasers are hereby notified that the underwriters are relying on the exemption set out in section 3A.3 or 3A.4, if applicable, of National Instrument 33-105—*Underwriting Conflicts* from having to provide certain conflict of interest disclosure in this document.

Statutory Rights of Action

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if the prospectus (including any amendment thereto) such as this document 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 of these securities in Canada 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.

Enforcement of Legal Rights

All of our directors and officers as well as the experts named herein may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

Taxation and Eligibility for Investment

Canadian purchasers of our shares of common stock should consult their own legal and tax advisors with respect to the tax consequences of an investment in the shares in their particular circumstances and about the eligibility of the shares for investment by the purchaser under relevant Canadian legislation.

Australia

This prospectus is not a disclosure document for the purposes of Australia's Corporations Act 2001 (Cth) of Australia, or Corporations Act, has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus in Australia:

You confirm and warrant that you are either:

- a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;
- a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to the company which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made; or
- a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor or professional investor under the Corporations Act any offer made to you under this prospectus is void and incapable of acceptance.

You warrant and agree that you will not offer any of the shares issued to you pursuant to this prospectus for resale in Australia within 12 months of those securities being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

European Economic Area

In relation to each member state of the European Economic Area which has implemented the Prospectus Directive, each referred to herein as a Relevant Member State, with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, referred to herein as the Relevant Implementation Date, no offer of any securities which are the subject of the offering contemplated by this prospectus has been or will be made to the public in that Relevant Member State other than any offer where a prospectus has been or will be published in relation to such securities that has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the relevant competent authority in that Relevant Member State in accordance with the Prospectus

Directive, except that with effect from and including the Relevant Implementation Date, an offer of such securities may be made to the public in that Relevant Member State:

- to any legal entity which is a "qualified investor" as defined in the Prospectus Directive;
- to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 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 of the underwriters for any such offer; or
- in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of securities shall require the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to any securities in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the securities to be offered so as to enable an investor to decide to purchase or subscribe the securities, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong, or SFO, and any rules made under that Ordinance; or in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong, or CO, or which do not constitute an offer to the public for the purpose of the CO or the SFO. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case 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 under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under that Ordinance.

This prospectus has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, or the Securities Law, and has not been filed with or approved by the Israel Securities Authority. In the State of Israel, this document is being distributed only to, and is directed only at, and any offer of the shares is directed only at, (i) a limited number of persons in accordance with section 15A of the Securities Law and (ii) investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and "qualified individuals", each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors will be required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

Japan

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended), or FIEL, and the Initial Purchaser will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means, unless otherwise provided herein, any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus has not been and will not be lodged or registered with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or the invitation for subscription or purchase of the securities may not be issued, circulated or distributed, nor may the securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to the public or any member of the public 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 as defined under Section 275(2), or any person pursuant to Section 275(1A) of the SFA, 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 securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor as defined under 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
- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary 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:

- 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;
- where no consideration is or will be given for the transfer;
- where the transfer is by operation of law;
- as specified in Section 276(7) of the SFA; or
- as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Switzerland

The securities 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 prospectus 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 prospectus nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, the Company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, or FINMA, and the offer of securities 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 securities.

United Kingdom

This prospectus is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, referred to herein as the Order, and/or (ii) high net worth entities falling within Article 49(2)(a) to (d) of the Order and other persons to whom it may lawfully be communicated. Each such person is referred to herein as a Relevant Person.

This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a Relevant Person should not act or rely on this document or any of its contents.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts. Certain legal matters relating to this offering will be passed upon for the underwriters by Wilmer Cutler Pickering Hale and Dorr LLP, New York, New York.

EXPERTS

The financial statements of Xeris Pharmaceuticals, Inc. as of December 31, 2016 and 2017, and for each of the years in the two year period ended December 31, 2017, have been included herein in reliance upon the report of KPMG LLP, an independent registered public accounting firm, appearing elsewhere herein, and upon the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 (File Number 333-) under the Securities Act with respect to the common stock we are offering by this prospectus. This prospectus does not contain all of the information included in the registration statement. For further information pertaining to us and our common stock, you should refer to the registration statement and to its exhibits. Whenever we make reference in this prospectus to any of our contracts, agreements or other documents, the references are not necessarily complete, and you should refer to the exhibits attached to the registration statement for copies of the actual contract, agreement or other document.

Upon the completion of the offering, we will be subject to the informational requirements of the Exchange Act and will file annual, quarterly and current reports, proxy statements and other information with the SEC. You can read our SEC filings, including the registration statement, at the SEC's website at www.sec.gov. You may also read and copy any document we file with the SEC at its public reference facility at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. We also maintain a website at www.xerispharma.com. Upon completion of the offering, you may access, free of charge, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports, as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC.

You may also obtain copies of the documents at prescribed rates by writing to the Public Reference Section of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facilities.

INDEX TO FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Stockholders and Board of Directors
Xeris Pharmaceuticals, Inc.:

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Xeris Pharmaceuticals, Inc. (the Company) as of December 31, 2017 and 2016, the related statements of operations, convertible preferred stock and stockholders' deficit, and cash flows for the years then ended, and the related notes (collectively, the financial statements). In our opinion, the 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 its operations and its cash flows for the years then ended, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these 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 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 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 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 2016

Chicago, Illinois
March 21, 2018

XERIS PHARMACEUTICALS, INC.

Balance Sheets
December 31, 2016 and 2017
(In thousands except share and par value data)

	2016	2017
Assets:		
Current assets:		
Cash and cash equivalents	$ 32,269	$ 42,045
Accounts receivable	101	1,199
Prepaid expenses and other current assets	804	809
Total current assets	33,174	44,053
Property and equipment, net	312	788
Other assets	47	157
Total assets	$ 33,533	$ 44,998
Liabilities, Convertible Preferred Stock and Stockholders' Deficit:		
Current liabilities:		
Accounts payable	$ 1,315	$ 1,976
Accrued expenses	902	2,557
Deferred grant award	263	234
Preferred stock warrants	47	93
Total current liabilities	2,527	4,860
Deferred rent—long term	42	90
Total liabilities	2,569	4,950
Convertible Preferred Stock:		
Series A Convertible Preferred Stock—par value $0.0001 1,864,797 shares authorized; 1,843,965 shares issued and outstanding as of December 31, 2016 and 2017, respectively; (Liquidation preference of $1,881 at December 31, 2017)	1,945	1,945
Series B Convertible Preferred Stock—par value $0.0001 5,732,338 authorized; 5,696,834 issued and outstanding as of December 31, 2016 and 2017, respectively; (Liquidation preference of $18,908 at December 31, 2017)	18,536	18,536
Series C Convertible Preferred Stock—par value $0.0001 7,973,845 and 14,353,859 shares authorized; 7,177,398 and 12,834,912 issued and outstanding as of December 31, 2016 and 2017, respectively; (Liquidation preference of $80,481 at December 31, 2017)	42,417	77,397
Total convertible preferred stock	62,898	97,878
Stockholders' Deficit		
Common stock—par value $0.0001, 21,247,980 and 30,450,994 shares authorized; 3,432,642 and 3,845,600 shares issued and outstanding as of December 31, 2016 and 2017, respectively.	1	1
Additional-paid-in-capital	2,096	2,754
Accumulated deficit	(34,031)	(60,585)
Total stockholders' deficit	(31,934)	(57,830)
Total liabilities, convertible preferred stock and stockholders' deficit	$ 33,533	$ 44,998

See Notes to Financial Statements.

XERIS PHARMACEUTICALS, INC.

Statements of Operations
Years Ended December 31, 2016 and 2017
(In thousands except share and per share data)

	2016	2017
Grant income	$ 1,022	$ 1,540
Service revenue	53	16
Cost of revenue	8	4
Gross profit	1,067	1,552
Operating expenses:		
Research and development	10,238	20,166
General and administrative	4,060	8,015
Expense from operations	14,298	28,181
Loss from operations	(13,231)	(26,629)
Other income (expense):		
Interest income	5	124
Interest expense	(2)	(2)
Change in fair value of warrants	24	(46)
Other expense	(5)	(1)
Total other income	22	75
Net loss	$ (13,209)	$ (26,554)
Net loss per share—basic and diluted	$ (4.03)	$ (7.35)
Weighted average shares outstanding, basic and diluted	3,281,564	3,612,512
Pro forma net loss per share basic and diluted—unaudited		$ (1.31)
Pro forma weighted average shares outstanding basic and diluted—unaudited		20,231,131

See Notes to Financial Statements.

XERIS PHARMACEUTICALS, INC.

Statements of Convertible Preferred Stock and of Stockholders' Deficit
Years Ended December 31, 2016 and 2017
(In thousands except share data)

	CONVERTIBLE PREFERRED STOCK						STOCKHOLDERS' DEFICIT					
	SERIES A		SERIES B		SERIES C		COMMON STOCK		ADDITIONAL PAID IN CAPITAL	SHAREHOLDER NOTES RECEIVABLE	ACCUMULATED DEFICIT	TOTAL
	SHARES	AMOUNT	SHARES	AMOUNT	SHARES	AMOUNT	SHARES	AMOUNT				
Balance, January 1, 2016	1,796,174	$ 1,787	5,696,834	$18,536	6,539,490	$38,569	3,233,894	$ 1	$ 1,534	$ (90)	$ (20,822)	$(19,377)
Net loss	—	—	—	—	—	—	—	—	—	—	(13,209)	(13,209)
Exercise of Series A Warrants	47,791	49	—	—	—	—	—	—	—	—	—	—
Fair market value of preferred stock warrants charged to Series A Preferred stock	—	109	—	—	—	—	—	—	—	—	—	—
Issuance of Series C Preferred Stock, net of cost $152	—	—	—	—	637,908	3,848	—	—	—	—	—	—
Repayments on shareholder notes	—	—	—	—	—	—	—	—	—	17	—	17
Allowance on shareholder notes	—	—	—	—	—	—	—	—	—	73	—	73
Exercise and vesting of stock based awards	—	—	—	—	—	—	198,748	—	22	—	—	22
Stock based compensation	—	—	—	—	—	—	—	—	540	—	—	540
Balance, December 31, 2016	1,843,965	$ 1,945	5,696,834	$18,536	7,177,398	$42,417	3,432,642	$ 1	$ 2,096	$ —	$ (34,031)	$(31,934)
Net loss	—	—	—	—	—	—	—	—	—	—	(26,554)	(26,554)
Issuance of Series C Preferred Stock, net of cost $395	—	—	—	—	5,657,514	34,980	—	—	—	—	—	—
Exercise and vesting of stock based awards	—	—	—	—	—	—	412,958	—	159	—	—	159
Stock based compensation	—	—	—	—	—	—	—	—	499	—	—	499
Balance, December 31, 2017	1,843,965	$ 1,945	5,696,834	$18,536	12,834,912	$77,397	3,845,600	$ 1	$ 2,754	$ —	$ (60,585)	$(57,830)

See Notes to Financial Statements.

XERIS PHARMACEUTICALS, INC.

Statements of Cash Flows
Years Ended December 31, 2016 and 2017
(In thousands)

	2016	2017
Cash flows from operating activities:		
Net loss	$(13,209)	$(26,554)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	116	177
Impairment of fixed assets	—	48
Stock-based compensation	540	499
Change in fair value of warrants	(24)	46
Allowance for shareholder note receivable	73	—
Changes in operating assets and liabilities:		
Accounts receivable	204	(1,098)
Prepaid expenses and other current assets	(294)	(5)
Other assets	1	(111)
Accounts payable	(2,909)	661
Accrued expenses	(552)	1,703
Deferred grant award	(33)	(29)
Net cash used in operating activities	(16,087)	(24,663)
Cash flows from investing activities:		
Purchases of property and equipment	(35)	(700)
Net cash used in investing activities	(35)	(700)
Cash flows from financing activities:		
Proceeds from sale of Series C Preferred Stock	4,000	35,475
Payments of Series C Preferred Stock offering costs	(152)	(495)
Proceeds from exercise of preferred stock warrants	49	—
Proceeds from shareholder notes receivable	17	—
Repayments of capital lease	(32)	—
Proceeds from exercise of stock awards	22	159
Net cash provided by financing activities	3,904	35,139
Increase (decrease) in cash and cash equivalents	(12,218)	9,776
Cash and cash equivalents, beginning of year	44,487	32,269
Cash and cash equivalents, end of year	$ 32,269	$ 42,045
Supplemental cash flow information:		
Income taxes paid	$ —	$ —
Interest paid	$ 2	$ 2
Supplemental schedule of noncash investing and financing activities:		
Change in fair market value of expired warrants	$ 109	$ —

See Notes to Financial Statements.

XERIS PHARMACEUTICALS, INC.

Note 1. Organization and Nature of the Business

Nature of business

Xeris Pharmaceuticals, Inc. ("Xeris" or the "Company") is a specialty pharmaceutical company that was incorporated in Delaware in 2005. Xeris is dedicated to the development of ready-to-use injectable and infusible drug formulations to address important unmet medical needs and that are easier to use by patients, caregivers and health practitioners, and reduce costs for payors and the healthcare system.

Basis of presentation

The financial statements are prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP").

Since its inception, the Company has devoted substantially all of its efforts to research and development, regulatory and technical activities. The Company has financed its operation through the issuance of convertible preferred stock and other equity instruments and grants from the National Institute of Health and other philanthropic organizations.

The Company has not generated any revenue from product sales. The Company has incurred operating losses since inception and had an accumulated deficit of $34.0 million and $60.6 million as of December 31, 2016 and 2017, respectively. The Company expects to continue to incur net losses for the next several years and is highly dependent on its ability to find additional sources of funding in the form of debt and/or equity financing and grant awards to fund its operations. The Company's ability to fund its planned clinical operations, including completion of its planned trials, and commercialization of its product candidates is expected to depend on the amount and timing of cash receipts from financing transactions and grant awards. Adequate additional funding may not be available to the Company on acceptable terms or at all. The failure to raise funds as and when needed could have a negative impact on the Company's financial condition and ability to pursue its business strategies. Based on the Company's current operating plans, existing working capital at December 31, 2017 combined with the $35.0 million in expected proceeds from the Loan and Security Agreement (the "Loan Agreement") with Oxford Finance LLC (Oxford) and Silicon Valley Bank (SVB) (collectively, the "Lenders") and $4.4 million in Series C Convertible Preferred Stock sold in February 2018, cash is sufficient to sustain operations beyond March 21, 2019. If additional funding is not secured when required, the Company may need to delay or curtail its operations until such funding is received. The Company is subject to a number of risks similar to other specialty pharmaceutical companies, including, but not limited to, successful development and commercialization of its drug candidates, raising additional capital, the development of new technological innovations by its competitors, protection of intellectual property and market acceptance of the Company's products.

Note 2. Summary of Significant Accounting Policies

Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities and contingent liabilities and expenses included in the financial statements and accompanying notes. Actual results could differ from those estimates.

Grant Income

The Company has received several grants from the National Institute of Health and other philanthropic organizations for certain research and development projects the Company is currently performing. Grant income is recognized when these research and development activities are performed, and the Company has met criteria for reimbursement per the grant agreements. The Company also has grants where cash is received upfront. The Company defers these awards until the research and development expenses are incurred.

Revenue

The Company recognizes revenue when persuasive evidence of an arrangement exists, the related services have been performed, the price is fixed and determinable and collectability is reasonably assured. The Company generates revenue through the performance of research and development activities on behalf of others.

Research and development costs

Research and development costs are expensed as incurred. Research and development costs include salaries, stock compensation and other personnel-related costs, consulting fees, fees paid for contract research services, laboratory equipment and facilities costs, and other external costs.

Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized. The capitalized amounts are expensed as the related goods are received or the services are performed.

Stock based compensation

The Company accounts for its stock-based compensation awards in accordance with ASC Topic 718, *Compensation—Stock Compensation* ("ASC 718"). ASC 718 requires all stock-based payments to employees, including grants of employee stock options, to be recognized in the statements of operations based on their grant date fair values. The Company estimates the grant date fair value of each option award using the Black-Scholes option-pricing model. The use of the Black-Scholes option-pricing model requires management to make assumptions with respect to the expected term of the option, the expected volatility of the common stock consistent with the expected life of the option, risk-free interest rates and expected dividend yields of the common stock. The Company recognizes stock-based compensation expense, net of estimated forfeitures, equal to the grant date fair value of stock options on a straight-line basis over the requisite service period. Restricted stock awards are valued based on the fair market value of the Company's common stock on the date they were granted. Restricted stock that vests and stock options that are authorized are issued out of authorized available shares.

The Company accounts for stock-based awards issued to non-employees by recognizing compensation expense based on the fair value of such awards when the services are completed over the vesting period of the award.

Income Taxes

Income taxes are recorded in accordance with ASC 740, *Accounting for Income Taxes* ("ASC 740"), which provides for deferred taxes using an asset and liability approach. The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. The Company determines its deferred tax assets and liabilities based on differences between financial reporting and tax bases of assets and liabilities, which are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. Valuation allowances are provided if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

The Company accounts for uncertain tax positions in accordance with the provisions of ASC 740. When uncertain tax positions exist, the Company recognizes the tax benefit of tax positions to the extent that the benefit will more likely than not be realized. The determination as to whether the tax benefit will more likely than not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances. As of December 31, 2017, the Company does not have any significant uncertain tax positions.

Cash and cash equivalents

Cash and cash equivalents includes demand deposits with financial institutions and liquid investments with original maturities of three months or less.

Concentrations of risk

The Company has no off-balance sheet concentrations of credit risk, such as foreign currency exchange contracts, option contracts or other hedging arrangements.

The Company is dependent on several key suppliers and third-party manufacturers. A failure or disruption by one of the Company's key suppliers or third-party manufacturers may have a material impact to its planned operations.

Prepaid expenses and other current assets

Prepaid expenses and other current assets include prepaid expenses for general business purposes, which are stated at cost and are amortized on a straight-line basis over the related period of benefit. Prepaid expenses also include supplies and materials used in several research projects. These supplies are expensed as they are consumed.

Property and equipment

Property and equipment are carried at cost less accumulated depreciation. Depreciation is calculated utilizing the straight-line method over the estimated useful lives of the respective assets:

Lab equipment	5 years
Computer equipment	5 years
Leasehold improvements	Lesser of useful life or lease term
Software	3-5 years
Furniture and fixtures	5 years
Office equipment	5 years

Costs of major additions and betterments are capitalized; maintenance and repairs, which do not improve or extend the life of the respective assets, are charged to expense as incurred. Upon retirement or sale, the cost of the disposed asset and the related accumulated depreciation are removed from the accounts and the resulting gain or loss is recognized.

Impairment of long-lived assets

The Company periodically evaluates its long-lived assets for potential impairment in accordance with ASC Topic 360, *Property, Plant and Equipment*. Potential impairment is assessed when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset may not be recovered. Recoverability of these assets is assessed based on undiscounted expected future cash flows from the assets, considering a number of factors, including past operating results, budgets and economic projections, market trends and product development cycles. If impairments are identified, assets are written down to their estimated fair value. The Company recognized impairment charges of $0 and $48,000 for the years ended December 31, 2016 and 2017, respectively. The impairment charge in 2017 was related to equipment that is no longer used in the Company's manufacturing of the glucagon rescue pen due to process and formulation improvements.

Deferred rent

Certain of the Company's lease agreements provide for scheduled rent increases during the lease term and for rental payments commencing at a date after the initial occupancy date. Provisions are made for the excess of operating lease rentals, computed on a straight-line basis throughout the lease term, over cash rentals paid.

Preferred stock

The Company's Series A, B and C Convertible Preferred Stock (collectively known as "Preferred Stock") allows the holders to redeem their shares upon a change in control in the Company. As a result, the Company classifies its Preferred Stock as mezzanine equity. The Company charges specific incremental issuance costs incurred in the offering of Preferred Stock against the gross proceeds of the Preferred Stock.

Warrants

Warrants for the Company's convertible preferred stock are liability classified as they represent a financial instrument for a share of convertible preferred stock. The warrants are revalued each reporting period with the change in fair value recorded in the accompanying statements of operations until the warrants are exercised, expire, reclassified to permanent equity, or otherwise settled.

Fair value of financial instruments

Fair value is the price that could be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. Fair value determination in accordance with applicable accounting guidance requires that a number of significant judgments are made. Additionally, fair value is used on a nonrecurring basis to evaluate assets for impairment or as required for disclosure purposes by applicable accounting guidance on disclosures about fair value of financial instruments. Depending on the nature of the assets and liabilities, various valuation techniques and assumption are used when estimating fair value. Items measured at fair value on a recurring basis include the Company's preferred stock warrants. The warrants are carried at their estimated fair value.

Segments

Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision maker ("CODM") in making decisions regarding resource allocation and assessing performance. The Company's chief executive officer uses summary financial information in determining how to allocate resources and assess performance. The Company has determined that it operates in one segment and all of the Company's assets are located in the United States.

Net loss per share

Basic and diluted net loss per common share is determined by dividing net loss applicable to common stockholders by the weighted-average common shares during the period. For all periods presented, the outstanding shares of the Preferred Stock, preferred stock warrants, and stock awards have been excluded from the calculation because their effects would be anti-dilutive. Therefore the weighted-average shares used to calculate both basic and diluted loss per share are the same.

The following potentially dilutive securities have been excluded from the computation of diluted weighted-average shares outstanding as of December 31, 2016 and 2017, as they would be antidilutive:

	YEARS ENDED DECEMBER 31,	
	2016	2017
Convertible preferred stock	14,718,197	20,375,711
Preferred stock warrants	35,500	35,500
Stock options and unvested restricted stock awards	1,095,431	3,525,468
	15,849,128	23,936,679

Amounts in the table above reflect the common stock equivalents of the noted instruments.

The unaudited pro forma net loss per common share is computed using the weighted-average number of common shares outstanding and assumes the issuance of 20,411,211 shares of common stock issued to the holders of the Company's Preferred Stock and preferred stock warrants upon an initial public offering as if such conversion had occurred at the beginning of the period presented or the date of original issuance, if later.

The following table summarizes the calculation of unaudited pro forma basic and diluted net loss per common share:

(In thousands except share and per share data)	2017
Pro forma net loss per common share (unaudited)	
Numerator	
Net Loss attributable to common stockholders	$ (26,554)
Pro forma adjustments to eliminate changes in fair value of preferred stock warrant liability	46
Net loss used to compute pro forma net loss per share	$ (26,508)
Denominator	
Weighted average of common shares outstanding	3,612,512
Pro forma adjustment to reflect the automatic conversion of all Convertible Preferred Stock and the related preferred stock warrants to common stock upon an initial public offering	16,618,619
Pro forma weighted average number of shares outstanding—Basic and diluted	20,231,131
Pro forma net loss per share—basic and diluted	$ (1.31)

Recent accounting pronouncements

In March 2016, the Financial Accounting Standards Board (FASB) issued ASU 2016-09, *Compensation—Stock Compensation (Topic 718): Improvements to Employee Share Based Payment Accounting* ("ASU 2016-09") as part of the FASB simplification initiative. The new standard provides for changes to accounting for stock compensation including 1) excess tax benefits and tax deficiencies related to share-based payment awards will be recognized as income tax expense in the reporting period in which they occur; 2) excess tax benefits will be classified as an operating activity in the statement of cash flow; 3) the option to elect to estimate forfeitures or account for them when they occur; and 4) increase tax withholding requirements threshold to qualify for equity classification. ASU 2016-09 is effective for public companies with annual periods and interim periods beginning after December 15, 2016. Early adoption is permitted. The Company intends to adopt this standard on January 1, 2018 and continues to analyze and assess the impact, if any, of this standard on its financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*. The new standard requires the recognition of assets and liabilities arising from lease transactions on the balance sheet and the disclosure of key information about leasing arrangements. Accordingly, a lessee will recognize a lease asset for its right to use the underlying asset and a lease liability for the corresponding lease obligation. Both the asset and liability will initially be measured at the present value of the future minimum lease payments over the lease term. Subsequent measurement, including the presentation of expenses and cash flows, will depend on the classification of the lease as either a finance or an operating lease. Initial costs directly attributable to negotiating and arranging the lease will be included in the asset. For leases with a term of twelve months or less, a lessee can make an accounting policy election by class of underlying asset to not recognize an asset and corresponding liability. Lessees will also be required to provide additional qualitative and quantitative disclosures regarding the amount, timing and uncertainty of cash flows arising from leases. These disclosures are intended to supplement the amounts recorded in the financial statements and provide additional information about the nature of an organization's leasing activities. The new standard will be effective for public companies with annual periods and interim periods beginning after December 15, 2018. Early adoption is permitted. In transition, lessees are required to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach. The transition guidance also provides specific guidance for sale and leaseback transactions, build-to-suit leases and amounts previously recognized in accordance with the business combinations guidance for leases. The Company intends to adopt this standard on January 1, 2020 and continues to analyze and assess the impact, if any, of this standard on its financial statements.

In May 2014, the FASB issued ASU 2014-09 (ASC606), *Revenue from Contracts with Customers*. This ASU, as amended by ASU 2015-14, affects any entity that either enters into contracts with customers to transfer goods and services or enters into contracts for the transfer of nonfinancial assets. ASU 2014-09 will replace most existing revenue recognition guidance in GAAP when it becomes effective. The standard's core principle is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. In doing so, companies will need to use more judgment and make more estimates than under the currently effective guidance. These may include identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation. ASU 2014-09 is effective for public companies with annual periods beginning after December 15, 2018 and for interim periods beginning after December 15, 2019. Early adoption is permitted. The Company intends to adopt this standard on January 1, 2019 and continues to analyze and assess the impact, if any, of this standard on its financial statements.

In May 2017, the FASB issued ASU 2017-09, *Compensation—Stock Compensation (Topic 718):* Scope of Modification Accounting. ASU 2017-09 clarifies when changes to the terms or conditions of a share-based payment award must be accounted for as modifications. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award changes as a result of the change in terms or conditions. ASU 2017-09 will be applied prospectively to awards modified on or after the adoption date. ASU 2017-09 is effective for public companies for annual and interim periods beginning after December 15, 2017. Early adoption is permitted. The Company intends to adopt this standard on January 1 2019, and continues to analyze and assess the impact, if any, of this standard on its financial statements.

Note 3. Property and Equipment

Property and equipment consisted of the following:

(In thousands)	DECEMBER 31, 2016	2017
Lab equipment	$ 375	$ 860
Furniture and fixtures	103	128
Computer equipment	50	100
Office equipment	26	78
Software	16	52
Leasehold improvements	10	10
	580	1,228
Less accumulated depreciation and amortization	(268)	(440)
Property and equipment, net	$ 312	$ 788

Depreciation and amortization expense relating to property and equipment was $116,000 and $177,000 for the years ended December 31, 2016 and 2017, respectively.

Note 4. Accrued Expenses

Accrued expenses consist of the following:

(In thousands)	DECEMBER 31, 2016	2017
Accrued employee costs	$744	$1,581
Accrued research costs	70	566
Other	88	410
Accrued expenses	$902	$2,557

Note 5. Convertible Preferred Stock

The holders of the Company's Preferred Stock will be entitled to receive non-cumulative dividends at the rate of 8% of the purchase price per annum in preference to any dividends to the holders of the common stock, payable as and if when declared by the Board of Directors. The Board has not declared any dividends as of December 31, 2017. The holders of the Preferred Stock also will be entitled to participate pro rata in any dividends paid to the holders of the common stock on an as-converted basis.

Upon the liquidation of the Company, the holders of Preferred Stock will be entitled to receive, in preference to the holders of the common stock, an amount equal to $1.02 per share for Series A Convertible Preferred Stock, $3.319 per share for Series B Convertible Preferred Stock and $6.2705 per share for Series C Convertible Preferred Stock plus any declared but unpaid dividends (the "Liquidation Preference"). After the payment of the Liquidation Preference in full, the remaining assets or other property of the Company will be distributed ratably to the holders of the common stock and the Preferred Stock on an as converted basis. A merger or consolidation involving the Company, a sale of voting control of the Company or the sale of all or substantially all of the assets of the Company will be deemed to be a liquidation for this purpose.

The holders of the Preferred Stock will have the right to convert their shares (including declared, but unpaid dividends thereon) into shares of the Company's common stock at any time. The initial conversion rate will be 1:1 subject to customary anti-dilution provisions.

The Preferred Stock will convert automatically into common stock upon the election of the holders of a majority of the outstanding Preferred Stock holders; or the closing of a firmly underwritten public offering of shares of the Company's common stock at a public offering price per share (prior to underwriter commissions and expenses) that is not less than $9.40 per share in an offering with aggregate proceeds to the Company of not less than $30,000,000.

Prior to completion of the Company's initial public offering, the holders of the Series C Convertible Preferred Stock are entitled to elect two board members and the holders of Series A and B Convertible Preferred Stock are entitled to elect two board members.

Note 6. Warrants

In 2013 the Company issued 69,000 Series A Convertible Preferred Stock warrants ("Series A Warrants"). The holder of each Series A Warrant was entitled to purchase one share of Series A Convertible Preferred Stock for $1.02. In 2016 47,791 warrants were exercised and the remaining Series A Warrants expired. There were no Series A Warrants outstanding as of December 31, 2016 and 2017.

In 2014 the Company issued 35,500 warrants ("Series B Warrants") to certain investors. The Series B Warrants allow each holder to purchase one share of Series B Preferred stock for $3.319 and they expire in August of 2020. There have been no exercises of Series B Warrants as of December 31, 2017 and as such all 35,500 warrants were outstanding as of December 31, 2016 and 2017.

Note 7. Commitments and Contingencies

Commitments

The Company has non-cancellable operating leases for office space and equipment, which expire at various times through 2024. The non-cancellable office lease agreements provide for monthly lease payments, which increase during the term of the lease. Future minimum lease payments under operating leases at December 31, 2017 are as follows:

(In thousands)	
2018	$ 730
2019	859
2020	834
2021	1,123
2022	1,148
Thereafter	701
Total minimum lease payments	$5,395

Total rent expense under these operating leases was approximately $268,000 and $526,000 for the years ended December 31, 2016 and 2017, respectively.

The Company has an outstanding letter of credit for $58,000 used to secure a lease in San Diego, California.

As of December 31, 2017, the Company has received $760,000 out of an expected $872,000 in grant proceeds for the development of a stable liquid glucagon for use in an artificial pancreas. Under the terms of the agreement, the Company will be required to pay up to four times the award received upon the commercialization of glucagon for use in the artificial pancreas. If the Company undergoes a change in control, then the Company will be required to pay a mid-single digit percentage of the gross proceeds, capped at four times the award amount less any amounts already paid. Additionally, if sales of glucagon for use in the artificial pancreas exceed $750 million in the first five years after the first commercial sale, then the Company would be required to make an additional payment equal to the award amount.

The Company has received a grant for $929,000 to help fund its exercise induced hyperglycemia (“EIH”) program. Under terms of this agreement, the Company will be required to pay up to two times the award amount upon the commercialization of an EIH product. These amounts are a low double-digit percentage of annual gross sales of an EIH product, capped at $500,000 annually, then the Company will pay a mid-single digit percentage of the consideration capped at two times the award amount less any amounts already paid. Additionally, if sales exceed $1 billion, the Company will be required to pay an additional amount equal to two times the award amount.

The Company has received a grant for $1,004,000 to help fund its chronic glucagon programs. Under terms of this agreement the Company will be required to pay up to two times the award amount upon the commercialization of any chronic glucagon program. These amounts are a low double-digit percentage of annual gross sales of all chronic glucagon programs, capped at $500,000 annually. If the Company undergoes a change in control, then it will pay a mid-single digit percentage of the consideration capped at two times the award amount less any amounts already paid. Additionally, for each chronic glucagon program where sales exceed $500 million, the Company will be required to pay an additional amount equal to two times the award amount.

Litigation

From time to time, the Company may become involved in various legal actions arising in the ordinary course of business. As of December 31, 2016 and 2017, management was not aware of any existing, pending or threatened legal actions that would have a material impact on the financial position or results of operations of the Company.

Note 8. Shareholder Notes Receivables

In November 2014, the Company accepted Notes Receivables totaling $107,000 from its then Chief Executive Officer (CEO) and a member of the Company’s Board of Directors, to exercise certain stock options. The Notes Receivables carried an interest rate of 1.93%, were payable in equal installments over 60 months and were collateralized by the underlying common stock purchased as a part of the stock option exercise and thus were recorded as a deduction to stockholder’s equity. The Board member paid his Note Receivable in full upon his resignation from the Board in 2016. The Company agreed to forgive the unpaid portion of the CEO’s Note Receivable as part of his severance package in connection with this separation from the Company in January 2017. As a result, the CEO’s Note Receivable of $73,000 was fully reserved at December 31, 2016 and written off in January 2017.

Note 9. Stock Compensation Plan

In 2011 the Company adopted the 2011 Stock/Option Issuance Plan (“2011 Plan”) and subsequently amended to authorize the Board of Directors to issue up to 7,797,950 incentive grant and non-statutory awards. Options and restricted stock granted to employees under the 2011 Plan typically vest over a 48-month period and options and restricted stock granted to non-employee directors vest over a 24-month period. All stock awards typically expire 10 years after they were issued. Subsequent to December 31, 2017 the shareholders approved an increase of 600,000 incentive grant and non-statutory awards allowed to be granted under the 2011 Plan.

The fair value of stock options was estimated with the following weighted average assumptions:

	YEARS ENDED DECEMBER 31,	
	2016	2017
Expected term	5.88	6.06
Expected volatility	61.46%	61.10%
Risk-free interest rate	1.48%	2.06%
Expected dividends	—	—

Stock option activity for employee awards for the year ended December 31, 2016 and 2017 is as follows:

	UNITS	WEIGHTED AVERAGE EXERCISE PRICE	WEIGHTED AVERAGE CONTRACTUAL LIFE (YEARS)
Outstanding—January 1, 2016	649,418	$ 0.74	6.33
Issued	246,000	1.52	
Exercised	(22,332)	0.49	
Forfeited	(16,655)	0.69	
Outstanding—December 31, 2016	856,431	0.95	6.71
Issued	2,925,607	0.92	
Exercised	(208,958)	0.89	
Forfeited	(23,612)	1.03	
Expired	(83,000)	0.86	
Outstanding—December 31, 2017	3,466,468	$ 0.93	8.71
Exercisable—December 31, 2017	3,045,590	$ 0.92	8.70
Vested and expected to vest at December 31, 2017	3,091,081	$ 0.93	8.70

The weighted average grant date fair value of awards granted during the years ended December 31, 2016 and 2017 was $0.87 and $0.53 per share, respectively. The total intrinsic value of options exercised during the years ended December 31, 2016 and 2017 was $9,000 and $1,258,000 respectively. The aggregate intrinsic value of awards vested and expected to vest as of December 31, 2016 and 2017 was $122,000 and $7,422,000, respectively.

Restricted stock awards for employees for the 2011 Plan for the years ended December 31, 2016 and 2017 is as follows:

	SHARES
Outstanding—January 1, 2016	172,500
Granted	185,000
Vested	(177,395)
Outstanding—December 31, 2016	180,105
Vested	(180,105)
Outstanding—December 31, 2017	—

The weighted average grant date fair value of awards issued in 2016 was $294,000 and the intrinsic fair value of shares vested and expected to vest during the year ended December 31, 2016 was $157,000. There were no awards granted during 2017 or outstanding as of December 31, 2017.

The following table summarizes the reporting of total stock-based compensation expense resulting from employee and non-employee stock options and restricted stock awards:

	YEARS ENDED DECEMBER 31,	
(In thousands)	2016	2017
Research and development	$ 78	$ 62
General and administrative	462	437
Total stock based compensation	$ 540	$ 499

There was a total of $1,311,000 of unrecognized compensation expense that is expected to be recognized over a weighted average period of 1.34 years.

The Company also granted stock options to non-employees. These awards are marked to fair-value at the end of each reporting period. Stock option activity for these awards for the years ended December 31, 2016 and 2017 is as follows:

	UNITS	WEIGHTED AVERAGE EXERCISE PRICE	WEIGHTED AVERAGE CONTRACTUAL LIFE (YEARS)
Outstanding—January 1, 2016	49,000	$ 0.50	7.15
Issued	25,000	1.59	
Exercised	(22,916)	0.46	
Forfeited	(2,084)	0.46	
Outstanding—December 31, 2016	49,000	1.07	7.75
Issued	10,000	0.87	
Outstanding—December 31, 2017	59,000	$ 1.07	6.75
Exercisable—December 31, 2017	49,000	$ 1.07	6.75
Vested and expected to vest at December 31, 2017	49,000	$ 1.07	6.74

The aggregate intrinsic value of awards vested and expected to vest at December 31, 2016 and 2017 was $8,000 and $110,000 respectively. The aggregate intrinsic value of awards exercisable as of December 31, 2016 and 2017 was $8,000 and $111,000, respectively. The company recognized expense associated with these awards of $8,000 and $35,000 for the years ended December 31, 2016 and 2017, respectively.

Note 10. Defined Contribution Plan

The Company sponsors an employee retirement plan qualifying under Section 401(k) of the Internal Revenue Code for all eligible employees in the United States. Employees become eligible to contribute to the plan upon meeting certain age requirements and 30 days of service. Currently the company does not make any contributions to the plan.

Note 11. Income Taxes

Due to reported losses, the Company recorded no income tax expense for the years ended December 31, 2016 and 2017. A reconciliation of the expected income tax benefit computed using the federal statutory income tax rate of 34% to the Company's effective income tax rate is as follows:

(In thousands)	DECEMBER 31, 2016	2017
Income tax using the federal statutory tax rate	$(4,491)	$(9,028)
Impact of rate change	—	7,478
Research and development and orphan drug credit	(655)	(517)
Permanent adjustments to expenses	(3)	76
Stock compensation	145	42
Prior year adjustment	—	(100)
Changes in valuation allowance	5,004	2,049
Total income taxes	$ —	$ —

During the years ended December 31, 2016 and 2017, the Company had no interest and penalties related to income taxes.

Deferred income taxes reflect the net tax effects of temporary difference between the carrying amount of the assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The Company has established a valuation allowance due to the uncertainties regarding the realization of the deferred tax assets based on the Company's lack of earning's history. Significant components of the Company's deferred tax assets and liabilities are as follows:

(In thousands)	DECEMBER 31, 2016	2017
Deferred tax assets		
Net operating losses	$ 10,547	$ 11,715
Research credits	1,462	2,045
Stock compensation	5	49
Other temporary differences	202	349
Valuation allowance	(12,157)	(14,124)
Total assets	59	34
Deferred tax liabilities		
Fixed and intangible assets	(59)	(34)
Total liabilities	(59)	(34)
Net deferred tax assets	$ —	$ —

As of December 31, 2016 and 2017, the Company had federal net operating loss carryforwards ("NOL") of $31,011,000 and $55,786,000, respectively. As of December 31, 2016 and 2017, the Company had federal research and orphan drug credit carryforwards of $1,462,000 and $2,045,000 respectively. If not utilized, these NOLs and research and orphan drug credit carryforwards will expire between 2025 and 2036.

Impacts of the Tax Cuts and Jobs Act

On December 22, 2017, the Tax Cuts and Jobs Act (H.R. 1) (the "Tax Act") was signed into law. The Tax Act contains significant changes to corporate taxation, including (i) the reduction of the corporate income tax rate to 21%, (ii) the acceleration of expensing for certain business assets, (iii) the one-time transition tax related to the transition of U.S. international tax from a worldwide tax system to a territorial tax system, (iv) the repeal of the domestic production deduction, (v) additional limitations on the deductibility of interest expense, and (vi) expanded limitations on executive compensation. The key impacts of the Tax Act on the Company's financial statement for the year ended December 31, 2017, were the re-measurement of deferred tax balances to the new corporate tax rate. While the Company has not yet completed the assessment of the effects of the Tax Act, the Company was able to determine reasonable estimates for the impacts of the key items specified above, thus it reported provisional amounts for these items. In accordance with Staff Accounting Bulletin No. 118 ("SAB 118"), the Company is providing additional disclosures related to these provisional amounts. In order to calculate the effects of the new corporate tax rate on its deferred tax balances, ASC 740 "*Income Taxes*" ("ASC 740") required the re-measurement of the Company's deferred tax balances as of the enactment date of the Tax Act, based on the rates at which the balances were expected to reverse in the future. The provisional amount determined, and recorded, for the re-measurement of its deferred tax balances resulted in a net reduction in deferred tax assets of $7,478,000 and a corresponding reduction in the valuation allowance of $7,478,000.

The aforementioned provisional amounts related to the deferred tax balances are based on information available at this time and may change due to a variety of factors, including, among others, (i) anticipated guidance from the U.S. Department of Treasury about implementing the Tax Act, (ii) potential additional guidance from the Securities and Exchange Commission or the FASB related to the Tax Act and (iii) management's further assessment of the Tax Act and related regulatory guidance. The Company is not complete in its assessment of the impact of the Tax Act on its

business and financial statements. While the effective date of most of the provisions of the Tax Act do not apply until the Company's tax year beginning January 1, 2018 it will continue the assessment of the impact of the Tax Act on its business and financial statements throughout the one-year measurement period as provided by SAB 118.

Note 12. Fair Value Measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value measurements are classified and disclosed in one of the following categories:

Level 1: Measured using unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.

Level 2: Measured using quoted prices in markets that are not active, or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liability.

Level 3: Measured based on prices or valuation models that required inputs that are both significant to the fair value measurement and less observable from objective sources (i.e., supported by little or no market activity).

Fair value measurements are classified based on the lowest level of input that is significant to the measurement. The Company's assessment of the significance of a particular input to the fair value measurement requires judgment, which may affect the valuation of the assets and liabilities and their placement within the fair value hierarchy levels. The determination of the fair values stated below takes into account the market for its financial assets and liabilities, the associated credit risk and other factors as required. The Company considers active markets as those in which transactions for the assets or liabilities occur in sufficient frequency and volume to provide pricing information on an ongoing basis.

The carrying amounts of cash and cash equivalents, grants receivable, and accounts payables approximate their fair values due to the short-term maturities of these instruments.

The fair value of the Company's warrant liabilities at inception and for subsequent mark-to-market fair value measurements, are based on management's valuation model and expected methods and timing of settlement. These estimates are prepared using models that consider various inputs including: (a) the Company's estimated future cash flows, (b) time value, and (c) current market conditions, as well as other relevant economic measures. The Company has determined that the warrant liabilities fair values are Level 3 items within the fair value hierarchy. The following table presents the changes in the warrant liabilities:

(In thousands)	
Balance at January 1, 2016	$ 180
Fair value of Series A warrants expired/exercised	(109)
Changes in fair value of warrants	(24)
Balance at December 31, 2016	47
Changes in fair value of warrants	46
Balance at December 31, 2017	$ 93

Note 13. Related Party Transaction

During 2017 the Company paid a spouse of an officer $37,000 to help with the development of the Company's website.

Note 14. Subsequent Events

Management reviews events and transactions occurring after the balance sheet date for potential recognition and disclosure in the financial statements. Management has evaluated subsequent events through March 21, 2018, the date on which the financial statements were available to be issued.

In February 2018, the Company entered into a sublease for office space in Chicago, Illinois that expires in November 2024, and entered into a letter of credit for $85,000 to secure the sublease. Annual minimum lease payments for the next five years are included in the table below:

(In thousands)	
2018	$ 163
2019	202
2020	210
2021	219
2022	228
Thereafter	462
Total minimum lease payments	$1,484

In February 2018, the Company sold 707,680 shares of Series C Convertible Preferred Stock for $6.2705 per share resulting in proceeds of $4.4 million with the same rights and preferences as the Series C Preferred Stock disclosed in Note 5.

In February 2018, the Company entered into the Loan Agreement, providing a senior secured loan facility of up to an aggregate principal amount of $45.0 million, comprising a $20.0 million drawdown in February 2018, and an additional $25.0 million which can be borrowed in two additional tranches. The second tranche is $15.0 million and is available beginning upon our submission of our NDA for our Glucagon Rescue Pen until the earlier of September 30, 2018 or the 30th day following such NDA submission. The third tranche is $10.0 million and is available beginning upon approval of our Glucagon Rescue Pen NDA by the FDA until the earlier of September 30, 2019 or the 30th day following NDA approval by the FDA.

The interest rate under the Loan Agreement is the thirty-day U.S. LIBOR rate plus 6.75%. Payments on the Loan Agreement are interest only for the first 24 months, which can be extended by an additional twelve months if the third tranche is drawn. The total term of the loan is 59 months and the principal payments will begin in either 36 or 24 months, contingent on the third tranche being drawn.

Pursuant to the Loan Agreement, the Company provided a first priority security interest in all existing and after-acquired assets, excluding intellectual property and certain other assets, owned by us. There is a negative pledge on intellectual property owned by the Company.

The Company also issued warrants to the Lenders to purchase the Company's Series C Preferred stock at an exercise price of $6.2705. The number of warrants issued to Lenders is equal to the total principal of each funded tranche multiplied by 3.0%, which is then divided by $6.2705. As of March 1, 2018, a total of 95,686 warrants have been issued in connection with the Loan Agreement.

The Loan Agreement allows the Company to voluntarily prepay the outstanding amounts thereunder, but not less than $2.0 million of the outstanding principal at any time. A prepayment fee of 1.5% would be assessed on the prepaid principal through the interest-only period. A final payment fee of 6.5% multiplied by the original principal amount of each tranche drawn is due upon the earlier to occur of the maturity date of the Loan Agreement, the acceleration of the Loan Agreement or prepayment of such borrowings. The Loan Agreement includes a non-utilization fee of 2.0% multiplied by the principal amount of tranche three payable to lenders in October 2019, if the Company does not elect to draw the third Tranche.

Shares

Common Stock

PROSPECTUS

Joint Book-Running Managers

Jefferies **Leerink Partners** **RBC Capital Markets**

Mizuho Securities

Until , 2018 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.

, 2018

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the estimated costs and expenses, other than underwriting discounts and commissions, to be paid by us in connection with the sale of the shares of common stock being registered hereby.

SEC registration fee	$ *
FINRA filing fee	*
Listing fee	*
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Blue Sky fees and expenses (including legal fees)	*
Transfer agent and registrar fees and expenses	*
Miscellaneous	*
Total	*

* To be provided by amendment.

Item 14. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law, or the DGCL, authorizes a corporation to indemnify its directors and officers against liabilities arising out of actions, suits and proceedings to which they are made or threatened to be made a party by reason of the fact that they have served or are currently serving as a director or officer to a corporation. The indemnity may cover expenses (including attorneys' fees) judgments, fines and amounts paid in settlement actually and reasonably incurred by the director or officer in connection with any such action, suit or proceeding. Section 145 permits corporations to pay expenses (including attorneys' fees) incurred by directors and officers in advance of the final disposition of such action, suit or proceeding. In addition, Section 145 provides that a corporation has the power to purchase and maintain insurance on behalf of its directors and officers against any liability asserted against them and incurred by them in their capacity as a director or officer, or arising out of their status as such, whether or not the corporation would have the power to indemnify the director or officer against such liability under Section 145.

We have adopted provisions in our certificate of incorporation and bylaws to be in effect upon the closing of this offering that limit or eliminate the personal liability of our directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or 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;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any unlawful payments related to dividends or unlawful stock purchases, redemptions or other distributions; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

In addition, our bylaws provide that:

- we will indemnify our directors, officers and, in the discretion of our board of directors, certain employees to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and

- we will advance reasonable expenses, including attorneys' fees, to our directors and, in the discretion of our board of directors, to our officers and certain employees, in connection with legal proceedings relating to their service for or on behalf of us, subject to limited exceptions.

We intend to enter into indemnification agreements with each of our directors and executive officers. These agreements provide that we will indemnify each of our directors, certain of our executive officers and, at times, their affiliates to the fullest extent permitted by Delaware law. We will advance expenses, including attorneys' fees (but excluding judgments, fines and settlement amounts), to each indemnified director or executive officer in connection with any proceeding in which indemnification is available and we will indemnify our directors and officers for any action or proceeding arising out of that person's services as a director or officer brought on behalf of us or in furtherance of our rights. Additionally, certain of our directors or officers may have certain rights to indemnification, advancement of expenses or insurance provided by their affiliates or other third parties, which indemnification relates to and might apply to the same proceedings arising out of such director's or officer's services as a director referenced herein. Nonetheless, we have agreed in the indemnification agreements that our obligations to those same directors or officers are primary and any obligation of such affiliates or other third parties to advance expenses or to provide indemnification for the expenses or liabilities incurred by those directors are secondary.

We also maintain general liability insurance which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act of 1933, as amended, or the Securities Act.

The underwriting agreement filed as Exhibit 1.1 to this registration statement provides for indemnification of us and our directors and officers by the underwriters against certain liabilities under the Securities Act and the Securities Exchange Act of 1934.

Item 15. Recent Sales of Unregistered Securities

In the three years preceding the filing of this registration statement, we have issued the following securities that were not registered under the Securities Act:

(a) Issuances of Capital Stock

In December 2015, with subsequent closings in December 2016, May 2017, December 2017 and February 2018, we sold an aggregate of 21,083,391 shares of our Series C preferred stock at a purchase price of $6.2705 per share.

No underwriters were involved in the foregoing sales of securities. The sales of securities described above were deemed to be exempt from registration pursuant to Section 4(a)(2) of the Securities Act, including Regulation D and Rule 506 promulgated thereunder, as transactions by an issuer not involving a public offering. All of the purchasers in these transactions represented to us in connection with their purchase that they were acquiring the securities for investment and not distribution, that they could bear the risks of the investment and could hold the securities for an indefinite period of time. Such purchasers received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration or an available exemption from such registration. All of the foregoing securities are deemed restricted securities for the purposes of the Securities Act.

(b) Grants and Exercises of Stock Options

Between March 1, 2015 and March 1, 2018, we have granted stock options to purchase an aggregate of 4,019,931 shares of our common stock, with exercise prices ranging from $0.87 to $3.33 per share, to employees, directors and consultants pursuant to the 2011 Stock Option Plan, or the 2011 Plan. Since December 31, 2017, and through the date of filing, shares of common stock have been issued upon the exercise of stock options pursuant to the 2011 Plan.

The issuances of the securities described above were deemed to be exempt from registration pursuant to Section 4(a)(2) of the Securities Act or Rule 701 promulgated under the Securities Act as transactions pursuant to compensatory benefit plans. The shares of common stock issued upon the exercise of options are deemed to be restricted securities for purposes of the Securities Act.

(c) Issuances of Warrants

On March 1, 2015, the Company issued warrants to purchase 35,500 shares of Series B preferred stock at an exercise price of $3.319 per share. On February 28, 2018, the Company issued warrants to purchase 95,686 shares of its Series C preferred stock at an exercise price of $6.2705 per share.

Item 16. Exhibits and Financial Statement Schedules

(a) Exhibits

EXHIBIT NUMBER	EXHIBIT TABLE
1.1*	Form of Underwriting Agreement
3.1	Amended and Restated Certificate of Incorporation of the Registrant, as currently in effect
3.2*	Amendment to Amended and Restated Certificate of Incorporation of the Registrant
3.3*	Form of Amended and Restated Certificate of Incorporation of the Registrant (to be effective upon the closing of this offering)
3.4	Amended and Restated By-laws of the Registrant , as currently in effect
3.5*	Form of Amended and Restated By-laws (to be effective upon the closing of this offering)
4.1	Amended and Restated Investors' Rights Agreement among the Registrant and certain of its stockholders, dated December 31, 2015
4.2*	Form of Specimen Common Stock Certificate
5.1*	Opinion of Goodwin Procter LLP
10.1*#	2011 Stock Option and Incentive Plan and forms of award agreements thereunder
10.2*#	2018 Stock Option and Incentive Plan and forms of award agreements thereunder
10.3*#	Senior Executive Cash Incentive Bonus Plan
10.4*#	Form of Director Indemnification Agreement
10.5*#	Form of Officer Indemnification Agreement
10.6	Lease Agreement, dated as of September 29, 2017, by and between Are-SD Region No. 30, LLC and the Registrant
10.7*#	Form of Amended and Restated Employment Agreement, by and between the Registrant and Paul Edick (to be entered into in connection with this offering)
10.8*#	Form of Amended and Restated Employment Agreement, by and between the Registrant and Nora Brennan (to be entered into in connection with this offering)
10.9*#	Form of Amended and Restated Employment Agreement, by and between the Registrant and John Shannon (to be entered into in connection with this offering)
10.10*#	Form of Amended and Restated Employment Agreement, by and between the Registrant and Steven Prestrelski (to be entered into in connection with this offering)
10.11*#	Form of Amended and Restated Employment Agreement, by and between the Registrant and Ken Johnson (to be entered into in connection with this offering)
10.12*+	API Supply Agreement, dated as of January 1, 2018, by and between the Registrant and Bachem Americas, Inc.
10.13*+	Quality Assurance Agreement, dated as of November 20, 2015, by and between Bachem AG and the Registrant, as amended by (i) Amendment 1 to the Quality Assurance Agreement, dated as of October 31, 2016, by and between Bachem AG and the Registrant and (ii) Amendment 2 to the Quality Assurance Agreement, dated as of January 26, 2017, by and between Bachem AG and the Registrant.

EXHIBIT NUMBER	EXHIBIT TABLE
10.14*+	Master Service Agreement, dated as of November 1, 2016, by and between Pyramid Laboratories and the Registrant
10.15*+	Quality Agreement, dated as of October 14, 2014, by and between Pyramid Laboratories and the Registrant
10.16*+	Joint Development Agreement, dated as of January 29, 2016, by and between the Registrant and Scandinavian Health Limited
10.17*+	Quality Agreement, dated as of April 5, 2016, by and between CDMO (SHL Pharma) and the Registrant
10.18*+	Loan and Security Agreement, dated as of February 28, 2018, by and between Oxford Finance, LLC, Silicon Valley Bank and the Registrant
23.1*	Consent of KPMG LLP, Independent Registered Public Accounting Firm
23.2*	Consent of Goodwin Procter LLP (included in Exhibit 5.1)
24.1*	Power of Attorney (included on signature page)
*	To be filed by amendment.
+	Confidential treatment has been requested for portions of this exhibit. These portions have been omitted from the Registration Statement and submitted separately to the Securities and Exchange Commission.
#	Indicates a management contract or any compensatory plan, contract or arrangement

(b) Financial Statement Schedules.

No financial statement schedules have been submitted because they are not required or are not applicable or because the information required is included in the consolidated financial statements or the notes thereto.

Item 17. Undertakings

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the Underwriting Agreement 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, Xeris Pharmaceuticals, Inc. has duly caused this registration statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Chicago, State of Illinois, on the day of , 2018.

Xeris Pharmaceuticals, Inc.

By: _____
Paul Edick
President and Chief Executive Officer

SIGNATURES AND POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Paul Edick and Nora Brennan, and each of them, either of whom may act without the joinder of the other, as his true and lawful attorneys-in-fact and agents with full power of substitution and re-substitution, 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 to sign any registration statement for the same offering covered by the registration statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act, and all post-effective amendments thereto, and to file the same, with all exhibits thereto and all 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 in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or his or their substitute or substitutes, may lawfully do or cause to be done or 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 in the capacities indicated on the day of , 2018.

SIGNATURE	TITLE
Paul Edick	President and Chief Executive Officer (Principal Executive Officer)
Nora Brennan	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)
John Schmid	Director
Robert C. Faulkner	Director
Cary McNair	Director
Jonathan Rigby	Director

FIFTH
AMENDED AMD RESTATED
CERTIFICATE OF INCORPORATION
OF
XERIS PHARMACEUTICALS, INC.
(Pursuant to Sections 228, 242 and 245 of the
General Corporation Law of the State of Delaware)

XERIS PHARMACEUTICALS, INC. (the "***Corporation***"), a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware, does hereby certify:

FIRST: That the Corporation was originally incorporated pursuant to the General Corporation Law of the State of Delaware on July 29, 2005 under the name Xeris Pharmaceuticals, Inc. and amended and restated pursuant to an Amended and Restated Certificate of Incorporation effective March 10, 2011, a Second Amended and Restated Certificate of Incorporation effective July 5, 2011, a Third Amended and Restated Certificate of Incorporation effective September 12,2014, as amended by that Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation, effective December 22, 2014, and a Fourth Amended and Restated Certificate of Incorporation effective December 28, 2015.

SECOND: The Fifth Amended and Restated Certificate of Incorporation of the Corporation in the form attached hereto as Exhibit A has been duly adopted in accordance with the provisions of Sections 228, 242 and 245 of the General Corporation Law of the State of Delaware by the directors and stockholders of the Corporation.

THIRD: The Fifth Amended and Restated Certificate of Incorporation so adopted reads in full as set forth in Exhibit A attached hereto and is incorporated herein by this reference (the "***Restated Certificate***").

IN WITNESS WHEREOF, Xeris Pharmaceuticals, Inc. has caused this Fifth Amended and Restated Certificate to be signed by the President and Chief Executive Officer as of May 17, 2017.

XERIS PHARMACEUTICALS, INC.

By: /s/ Paul R. Edick
Paul R. Edick
President and Chief Executive Officer

EXHIBIT A

FIFTH
AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
XERIS PHARMACEUTICALS, INC.

ARTICLE I

The name of this Corporation is Xeris Pharmaceuticals, Inc.

ARTICLE II

The address of the registered office of the Corporation in the State of Delaware is Corporation Trust Center, 1209 Orange Street, City of Wilmington, County of New Castle, Delaware, 19801-1120 and the name of the registered agent at that address is The Corporation Trust Company.

ARTICLE III

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the Delaware General Corporation Law (the "***DGCL***").

ARTICLE IV

A. **Classes of Stock.** The Corporation is authorized to issue two classes of capital stock to be designated, respectively, "Common Stock" and "Preferred Stock." The total number of shares of capital stock authorized to be issued is 52,401,988 shares. 30,450,994 shares shall be Common Stock, par value $0.0001 per share ("***Common Stock***"), and 21,950,994 shares shall be Preferred Stock, par value $0.0001 per share ("***Preferred Stock***"), 1,864,797 of which shall be designated as "Series A Convertible Preferred Stock" (the "***Series A Preferred***"), 5,732,338 of which shall be designated as "Series B Convertible Preferred Stock" (the "***Series B Preferred***"), and 14,353,859 of which shall be designated as "Series C Convertible Preferred Stock" (the "***Series C Preferred***).

B. **Rights, Preferences and Restrictions of Preferred Stock.** The respective rights, preferences, privileges and restrictions granted to and imposed on each series of Preferred Stock are as set forth below in this Section B of Article IV.

1. **Dividend Provisions.**

(a) The holders of shares of Preferred Stock shall be entitled to receive, on a *pari passu* basis, out of any assets legally available therefor, prior and in preference to any declaration or payment of any dividend (other than dividends payable in Common Stock for which appropriate adjustment is made hereunder) on the Common Stock or any other class or series of stock of the Corporation, dividends on each share of Series A Preferred at the rate of 8.0% of the Original Series A Purchase Price (as defined below) per annum, dividends on each share of Series B Preferred at the rate of 8.0% of the Original Series B Purchase Price (as defined below) per annum, and dividends on each share of Series C Preferred at the rate of 8.0% of the Original Series C

Purchase Price (as defined below) per annum when, as and if declared by the Board of Directors. Such dividends shall not be cumulative. Any amounts to be so paid for which assets are not legally available shall be paid promptly as assets become legally available therefor. No dividends shall be declared or paid, and no distribution shall be made (other than dividends payable in Common Stock for which appropriate adjustment is made hereunder), on any shares of Common Stock until dividends in the total amount of 8.0% of the Original Series A Purchase Price per share per annum on the Series A Preferred shall have been paid for each fiscal year for which the Series A Preferred has been outstanding, dividends in the total amount of 8.0% of the Original Series B Purchase Price per share per annum on the Series B Preferred shall have been paid for each fiscal year for which the Series B Preferred has been outstanding, and dividends in the total amount of 8.0% of the Original Series C Purchase Price per share per annum on the Series C Preferred shall have been paid for each fiscal year for which the Series C Preferred has been outstanding. After the payment of the dividends described in this Subsection 1(a), any additional dividends (other than dividends payable in Common Stock for which appropriate adjustment is made hereunder) declared or paid in any year shall be declared or paid on the Series A Preferred, Series B Preferred, Series C Preferred and Common Stock then outstanding on an as-converted to Common Stock basis.

(b) Any dividend or distribution which is declared by the Corporation and payable with assets of the Corporation other than cash or Common Stock shall be valued in accordance with the provisions of Subsection 2(c)(ii) below.

2 Liquidation Preference.

(a) Upon the occurrence of any Liquidation Event (as defined in Subsection 2(c)(i) below), the holders of Preferred Stock shall be entitled to receive on a *pari passu* basis, prior and in preference to any payment to or distribution of any of the assets of the Corporation to the holders of Common Stock or any other security ranking junior in priority to the Preferred Stock by reason of their ownership thereof, (i) with respect to the Series C Preferred, an amount per share of Series C Preferred then held by them equal to the sum of (A) $6.2705 (as adjusted to reflect stock dividends, stock splits, combinations, recapitalizations and the like with respect to such shares) (the "***Original Series C Purchase Price***") plus (B) an amount equal to any declared but unpaid dividends thereon (such sum, the "***Series C Liquidation Amount***"); (ii) with respect to the Series B Preferred, an amount per share of Series B Preferred then held by them equal to the sum of (A) $3.319 (as adjusted to reflect stock dividends, stock splits, combinations, recapitalizations and the like with respect to such shares) (the "***Original Series B Purchase Price***") plus (B) an amount equal to any declared but unpaid dividends thereon (such sum, the "***Series B Liquidation Amount***"), and (iii) with respect to the Series A Preferred, an amount per share of Series A Preferred then held by them equal to the sum of (A) $1.02 (as adjusted to reflect stock, dividends, stock splits, combinations, recapitalizations and the like with respect to such shares) (the "***Original Series A Purchase Price***") plus (B) an amount equal to any declared but unpaid dividends thereon (such sum, the "***Series A Liquidation Amount***"). The Original Series C Purchase Price, Original Series B Purchase Price, and the Original Series A Purchase Price are sometimes collectively referred to herein as an "***Original Issue Price***" If upon the occurrence of such event, the assets and funds thus distributed among the holders of the Preferred Stock shall be insufficient to permit the payment to such holders of the full Series C Liquidation Amount, Series B Liquidation Amount and

Series A Liquidation Amount, as applicable, then the entire assets and funds of the Corporation legally available for distribution shall be distributed ratably among the holders of the Series C Preferred Stock, Series B Preferred Stock, and Series A Preferred Stock in proportion to the relative preferential amounts that each such holder is otherwise entitled to receive.

(b) After payment to the holders of the Preferred Stock of the amounts set forth in Subsection 2(a), any additional remaining assets shall be distributed among the holders of the shares of Preferred Stock and Common Stock, pro rata based on the number of shares held by each such holder, treating for this purpose all such securities as if they had been converted to Common Stock pursuant to the terms of the Restated Certificate immediately prior to such Liquidation Event.

(c) (i) Unless waived in any specific instance by (i) the holders of at least 60% of the shares of Preferred Stock then outstanding, voting or acting together as a single class on an as-converted to Common Stock basis, and (ii) the holders of a majority of the shares of Series C Preferred Stock then outstanding, voting or acting together as a single class on an as-converted to Common Stock basis, in any specific instance a "***Liquidation Event***" shall be defined as any liquidation, dissolution or winding up of the Corporation, either voluntary or involuntary, and shall be deemed to be occasioned by, or to include, (A) the acquisition of the Corporation by another entity by means of any transaction or series of related transactions (including, without limitation, any stock acquisition, reorganization, merger or consolidation) unless the Corporation's stockholders of record as constituted immediately prior to such acquisition or sale will, immediately after such acquisition or sale (by virtue of securities issued as consideration for the Corporation's acquisition or sale or otherwise) hold at least a majority of the voting power of the surviving or acquiring entity, or its direct or indirect parent entity (except that the sale by the Corporation of shares of its capital stock to investors in bona fide equity financing transactions, or in a Qualified Public Offering, shall not be deemed a Liquidation Event for this purpose) or (B) a sale, exclusive license or other disposition or transfer of all or substantially all of the assets of the Corporation in any transaction or series of related transactions, including a sale, exclusive license or other disposition or transfer of all or substantially all of the assets of the Corporation's subsidiaries, if such assets constitute substantially all of the assets of the Corporation and such subsidiaries taken as a whole.

(ii) In any of such events, if the consideration received by or with respect to the Corporation is other than cash or securities, its value will be deemed its fair market value as determined in good faith by a majority of the Board of Directors. Any securities to be delivered to the holders of the Preferred Stock or Common Stock, as the case may be, shall be valued as follows:

(A) If traded on a national securities exchange, the value shall be deemed to be the average of the closing prices of the securities on such exchange over the ten (10) day period ending three (3) days prior to the closing;

(B) 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 ten (10) day period ending three (3) days prior to the closing; and

(C) If there is no active public market, the value shall be the fair market value thereof, as determined in good faith by a majority of the Board of Directors of the Corporation.

(iii) 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 valued at an appropriate discount from the value determined as provided in Subsection 2(c)(ii)(A) or (ii)(B) above to reflect the approximate fair market value thereof, as determined in good faith by a majority of the Board of Directors,

(d) (i) The Corporation shall give each holder of record of Preferred Stock written notice of any impending Liquidation Event not later than twenty (20) days prior to the stockholders' meeting called to approve such Liquidation Event, or twenty (20) days prior to the closing of such Liquidation Event, whichever is earlier, and shall also notify such holders in writing of the final approval of such Liquidation Event. The first of such notices shall describe the material terms and conditions of the impending Liquidation Event and the provisions of this Section B.2, and the Corporation shall thereafter give such holders prompt notice of any material changes. The consummation of the Liquidation Event shall in no event take place sooner than twenty (20) days after the Corporation has given the first notice provided for herein or sooner than twenty (20) days after the Corporation has given notice of any material changes provided for herein; *provided*, *however*, that such notice and other requirements may be shortened, modified or waived entirely upon the Corporation's receipt of written consent of (i) the holders of 60% of the Preferred Stock entitled to such notice rights or similar notice rights, voting or acting together as a single class on an as-converted to Common Stock basis, and (ii) the holders of a majority of the shares of Series C Preferred Stock then outstanding, voting or acting together as a single class on an as-converted to Common Stock basis.

(ii) In the event the requirements of this Subsection 2(d) are not complied with, the Corporation shall either:

(A) cause such closing to be postponed until such time as the requirements of this Section B.2 have been complied with; or

(B) cancel such Liquidation Event, in which event the respective 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(c)(i) above.

(e) Upon the consummation of a Liquidation Event pursuant to Section 2(c)(i) above, if any portion of the consideration payable to the stockholders of the Corporation is payable only upon satisfaction of contingencies (the "***Additional Consideration***"), the operative agreement for such transaction shall provide that (a) the portion of such consideration that is not Additional Consideration (such portion, the "***Initial Consideration***") shall be allocated among the holders of capital stock of the Corporation in accordance with Section 2(a) as if the Initial Consideration were the only consideration payable in connection with such Liquidation Event; and (b) any Additional Consideration which becomes payable to the stockholders of the Corporation upon satisfaction of such contingencies shall be allocated among the holders of capital stock

of the Corporation in accordance with Section 2(a) after taking into account the previous payment of the Initial Consideration as part of the same transaction. For the purposes of this Section 2(e), consideration placed into escrow or retained as holdback to be available for satisfaction of indemnification or similar obligations in connection with such Liquidation Event shall not be deemed to be Additional Consideration.

3. **Conversion**. The holders of Preferred Stock shall have conversion rights as follows (the "***Conversion Rights***"):

(a) Right to Convert. Each share of each series 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 the Corporation or any transfer agent for such stock, into such number of fully paid and nonassessable shares of Common Stock as is determined, with respect to each share of each series of Preferred Stock, by dividing (x) the applicable Original Purchase Price for such series of Preferred Stock by (y) the Conversion Price in effect for such series of Preferred Stock on the date the certificate is surrendered for conversion. The initial ***"Conversion Price"*** per share for the Series A Preferred shall be the Original Series A Purchase Price. The initial Conversion Price per share for the Series B Preferred shall be the Original Series B Purchase Price. The initial Conversion Price per share for the Series C Preferred shall be the Original Series C Purchase Price. The Conversion Price for the shares of each series of Preferred Stock shall be subject to adjustment as set forth in Subsection 3(d) below.

(b) Automatic Conversion. Each share of each series of Preferred Stock shall automatically be converted into shares of Common Stock at the applicable Conversion Price then in effect immediately upon the earlier of:

(i) immediately prior to the closing of the Corporation's sale of its Common Stock in a firm commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended (the ***"Securities Act"***): (A) at a public offering price (prior to underwriter's discounts or commissions and offering expenses) of not less than $9.40 per share (as adjusted to reflect stock dividends, stock splits, combinations, recapitalizations and the like with respect to the Common Stock); and (B) with aggregate gross proceeds to the Corporation of at least $30,000,000 (an offering meeting the conditions specified in this Subsection 3(b)(i), a "***Qualified Public Offering***"); or

(ii) the date specified by written consent or agreement of (x) the holders of at least 60% of the then outstanding shares of Preferred Stock, voting or acting together as a single class on an as-converted to Common Stock basis, and (y) the holders of a majority of the shares of Series C Preferred Stock then outstanding, voting or acting together as a single class on an as-converted to Common Stock basis.

(c) Mechanics of Conversion.

(i) Before any holder of any series of Preferred Stock shall be entitled to convert the same into shares of Common Stock pursuant to Subsection 3(a) above and upon the occurrence of the events specified in Subsection 3(b) above, as the

case may be, such holder shall surrender the certificate or certificates therefor (or lost stock affidavits therefor), duly endorsed, at the office of the Corporation or of any transfer agent for such series of Preferred Stock and if such conversion is to be effected pursuant to Subsection 3(a) above, shall give written notice to the 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 Common Stock are to be issued; *provided*, *however*, that any failure by a holder to comply with these provisions shall not have any effect on the automatic conversion of such holder's shares, which shall in any event be deemed to have converted, automatically and without any further action on the part of the holder or the Corporation, in accordance with Subsection 3(b) above. The Corporation shall, as soon as practicable thereafter, (i) 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 Common Stock to which such holder shall be entitled as aforesaid, and (ii) pay all declared but unpaid dividends on the shares of Preferred Stock converted. 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 (or lost stock affidavits therefor) to be converted (or on such later date requested by the holder or on such earlier date agreed to by the Corporation and the holder), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock as of such date.

(ii) If the conversion is in connection with an underwritten offering of securities registered pursuant to the Securities Act, or any event that would be deemed to be a Liquidation Event under Subsection 2(c)(i) above, the conversion may, at the election of the holder, be conditioned upon the closing with the underwriters of the sale of securities pursuant to such offering or the closing of such Liquidation Event, as the case may be, in which event the person(s) entitled to receive the 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 or of such Liquidation Event, as the case may be.

(d) Conversion Price Adjustments. The Conversion Price with respect to each series of Preferred Stock shall be subject to adjustment from time to time as follows:

(i) (A) If the Corporation shall issue, after the first issuance of Series C Preferred Stock following the filing of this Restated Certificate, any Additional Stock (as defined in Subsection 3(d)(ii) below) without consideration or for a consideration price per share less than the Conversion Price of the Series C Preferred, Series B Preferred or Series A Preferred, as applicable, in effect immediately prior to the issuance of such Additional Stock (a ***"Qualifying Dilutive Issuance"***), the Conversion Price for the Series C Preferred, Series B Preferred or the Series A Preferred, respectively, shall (except as otherwise provided for in Subsection 3(d)(1)(B)), concurrent with such Qualifying Dilutive Issuance, be adjusted to a price determined by multiplying the Conversion Price of the Series C Preferred, Series B Preferred or Series A Preferred, as applicable, in effect immediately prior to such Qualifying Dilutive Issuance by a fraction, (x) the numerator of which shall be the number of shares of Common Stock outstanding immediately prior to such issuance (including shares of Common Stock deemed to be issued pursuant to Subsection 3(d)(i)(E)(l) or (i)(E) plus the number of shares of Common Stock that the aggregate consideration

received by the Corporation for such issuance would purchase at such Conversion Price; and (y) the denominator of which shall be the number of shares of Common Stock outstanding immediately prior to such issuance (including shares of Common Stock deemed to be issued pursuant to Subsections 3(d)(i)(E)(l) and 3(d)(i)(E)(2)) plus the number of shares of Additional Stock being issued in such Qualifying Dilutive Issuance. For example, if after the filing of this Restated Certificate, the Corporation issues 1,000,000 shares of Common Stock for consideration per share of $0.75 and assuming there are 5,000,000 shares of Common Stock deemed outstanding immediately prior to such issuance (including shares of Common Stock deemed to be issued pursuant to Subsection 3(d)(i)(E)(1) or (i)(E)(2)), the Conversion Price of the Series C Preferred immediately would be reduced (and the Conversion Price of the Series A Preferred and Series B Preferred would be reduced in a similar manner based on the respective Conversion Price of the Series A Preferred and Series B Preferred) to the price determined by multiplying $6.2705, the Series C Conversion Price then in effect, by the following fraction:

$$\frac{5{,}000{,}000 + \frac{\$0.75 \times 1{,}000{,}000}{\$6{,}2705}}{5{,}000{,}000 + 1{,}000{,}000}$$

$$= \frac{5{,}119{,}607.69}{6{,}000{,}000.00}$$

$$= 0.8533$$

resulting in an adjusted Series C Conversion Price of $5.3504 (i.e., $6.2705 x 0.8533) and an adjusted conversion rate of 1.1720:1 *(i.e.*, $6.2705 / $5.3504. Notwithstanding the numerical illustration set forth above, to the extent there is any confusion between the written description of the Conversion Price adjustment and the numerical illustration of the same, the written description shall control.

(B) No adjustment of the Conversion Price with respect to a series of Preferred Stock shall be made if such adjustment would be in an amount less than one cent per share, but such adjustments shall be carried forward on a cumulative basis until an adjustment to such Conversion Price (together with all previous adjustments so carried forward) of at least one cent per share is made thereto. Except to the limited extent provided for in Subsection 3(d)(i)(E)(3) or (i)(E)(4), no adjustment of the Conversion Price for any series of Preferred Stock pursuant to this Subsection 3(d) shall have the effect of increasing any such 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 discounts, commissions or other similar expenses allowed, paid or incurred by the 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 value thereof as determined pursuant to Subsection 2(c)(ii) above.

(E) In the case of the issuance (whether before, on or after the filing of this Restated Certificate) of (i) options to purchase or rights to subscribe for Common Stock, (ii) securities by their terms convertible into or exchangeable for Common Stock or (iii) options to purchase or rights to subscribe for securities by their terms convertible into or exchangeable for Common Stock, the following provisions shall apply for all purposes of Subsection 3(d)(ii) and Subsection 3(d)(ii):

(1) The aggregate maximum number of shares of Common Stock deliverable upon exercise (whether or not then exercisable) 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 Subsection 3(d)(i)(C) and 3(d)(i)(D)), if any, received by the Corporation upon the issuance of such options or rights plus the minimum exercise price provided in such options or rights for the Common Stock covered thereby.

(2) The aggregate maximum number of shares of Common Stock deliverable upon conversion of (including, without limitation, shares issuable with respect to the payment of declared dividends on such conversion), or in exchange (whether or not then convertible or exchangeable) 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 the Corporation for any such securities and related options or rights (excluding any cash received on account of accrued interest), plus the minimum additional consideration, if any, to be received by the Corporation 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 Subsection 3(d)(i)(C) and 3(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 the Corporation upon exercise of such options or rights or upon conversion of or in exchange for such convertible or exchangeable securities, including, but not limited to, a change resulting from the antidilution provisions thereof (other than anti-dilution provisions substantially comparable to those included herein), the applicable Conversion Price, 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 applicable Conversion Price, 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 Common Stock deemed issued and the consideration deemed paid therefor pursuant to Subsection 3(d)(i)(E)(l) and (2) shall be appropriately adjusted to reflect any change, termination or expiration of the type described in either Subsection (3)(d)(i)(E)(3) or (4).

(ii) ***"Additional Stock"*** shall mean all shares of Common Stock issued (or deemed to have been issued pursuant to Subsection 3(d)(i)(E)(l) and (i)(E)(2)) by the Corporation after the filing of this Restated Certificate, other than shares of Common Stock (or options therefor) issued or issuable:

(A) upon conversion of any shares of Preferred Stock;

(B) to officers, directors or employees of, or consultants or other service providers to, the Corporation as compensation for services, pursuant to a stock option plan or an agreement approved by the Board of Directors (including the approval or consent of the majority of the Preferred Directors, as defined in Section 4(c)(ii), then in office);

(C) to banks, savings and loan associations, equipment lessors or other similar lending institutions in connection with such entities providing working capital credit facilities or equipment financing to the Corporation for a non-equity financing purpose, or commercial lessors in connection with lease transactions for the Corporation's offices, approved by the Board of Directors (including the approval or consent of the majority of the Preferred Directors then in office);

(D) pursuant to a transaction for which an adjustment of the Conversion Price is made pursuant to Subsection 3(d)(iii) below;

(E) pursuant to any dividend or distribution on the Preferred Stock and dividends payable in Common Stock for which appropriate adjustment is made hereunder;

(F) pursuant to bona fide business or technology acquisitions of or by the Corporation, whether by merger, consolidation, sale of assets, sale or exchange of stock, reorganization or otherwise, which is approved by the Board of Directors (including the approval or consent of the majority of the Preferred Directors then in office);

(G) pursuant to or in connection with collaboration, technology license, development, OEM, marketing or other similar agreements or strategic partnerships approved by the Board of Directors (including the approval or consent of the majority of the Preferred Directors then in office);

(H) pursuant to the sale of shares of the Corporation's capital stock in connection with a firm commitment underwritten public offering and any agreement allocating shares of capital stock in connection with such public offering;

(I) upon the exercise of warrants or other securities or rights exercisable to purchase the Corporation's capital stock that were outstanding as of the filing of this Restated Certificate;

(J) pursuant to the issuance of shares of the Corporation's capital stock or upon the exercise of options, warrants or other agreements to purchase the Corporation's capital stock, in each case that are issued for charitable purposes and that are approved by the Board of Directors (including the approval or consent of the majority of the Preferred Directors then in office); or

(K) by virtue of the operation of the anti-dilution provisions set forth in Subsection 3(d),

(iii) In the event the Corporation should at any time or from time to time after the filing of this Restated Certificate fix a record date for the effectuation of a split or a 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) without a corresponding adjustment to the Preferred Stock, 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 shall be appropriately decreased so that the number of shares of Common Stock issuable on conversion of each share of each series of Preferred Stock shall be increased in proportion to such increase of the aggregate number of shares of Common Stock outstanding and those issuable with respect to such Common Stock Equivalents.

(iv) If the number of shares of Common Stock deemed outstanding at any time after the filing of this Restated Certificate is decreased by a combination of the outstanding shares of Common Stock without a corresponding adjustment to the Preferred Stock, then, following the record date of such combination, the Conversion Price shall be appropriately increased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be decreased in proportion to such decrease in outstanding shares.

(v) In the event that the Corporation issues or sells, or is deemed to have issued or sold, Additional Stock in a Qualifying Dilutive Issuance (the "***First Dilutive Issuance***"), then in the event that the Corporation issues or sells, or is deemed to have issued or sold, Additional Stock in a Qualifying Dilutive Issuance other than the First Dilutive Issuance as a part of the same transaction or series of related transactions as the First Dilutive Issuance (a "***Subsequent Dilutive Issuance***"), and the dates of such Subsequent Dilutive Issuances occur within a period of no more than ninety (90) days after the First Dilutive Issuance, then and in each such case upon a Subsequent Dilutive Issuance the Conversion Price shall be adjusted to the Conversion Price that would have been in effect had the First Dilutive Issuance and each Subsequent Dilutive Issuance all occurred on the closing date of the First Dilutive Issuance.

(e) Other Distributions. Subject to Section B.1 above, in the event the Corporation shall declare a dividend or distribution payable in securities of other persons, evidences of indebtedness issued by the Corporation or other persons, assets (excluding cash dividends) or options or rights that are not Common Stock Equivalents, then, in each such case, the holders of 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 the 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 the Corporation entitled to receive such dividend or distribution.

(f) Recapitalizations. If at any time or from time to time after the filing of this Restated Certificate, there shall be a recapitalization of the Common Stock (other than a subdivision or combination provided for elsewhere in this Section B.3 or a Liquidation Event provided for in Section B.2 above) provision shall be made so that the holders of Preferred Stock shall thereafter be entitled to receive upon conversion of their shares of Preferred Stock the number of shares of stock or other securities or property of the Corporation or otherwise, to which a holder of 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 B.3 with respect to the rights of the holders of Preferred Stock after the recapitalization to the end that the provisions of this Section B.3 (including adjustment of the Conversion Price then in effect and the number of shares issuable upon conversion of the Preferred Stock) shall be applicable after that event as nearly equivalent as prior to that event as may be practicable.

(g) No Fractional Shares and Certificate as to Adjustments.

(i) No fractional shares shall be issued upon the conversion of any share or shares of Preferred Stock, and the number of shares of Common Stock to be issued shall be rounded to the nearest whole share (with 0.5 being rounded up). Whether or not fractional shares are issuable upon such conversion shall be determined on the basis of the total number of shares of Preferred Stock that the holder is at the time converting (or are being automatically converted) into Common Stock and the number of shares of Common Stock issuable upon such aggregate conversion (including, without limitation, shares issuable with respect to the payment of declared but unpaid dividends on the shares converted).

(ii) Upon the occurrence of each adjustment or readjustment of the Conversion Price pursuant to this Section B.3. the 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 such Preferred Stock, a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. The 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 at the time in effect, and (C) the number of shares of Common Stock and the amount, if any, of other property which at the time would be received upon the conversion of such holder's shares of Preferred Stock.

(h) Waiver of Adjustment of 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 consent or vote of the holders of 60% of the outstanding shares of such series of Preferred Stock that the downward adjustment is applicable to (voting together as a single class, on an as-converted basis). Any such waiver shall bind all future holders of shares of such series of Preferred Stock.

(i) Notices of Record Date. In the event of any taking by the 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, any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right, the Corporation shall mail to each holder of Preferred Stock, at least twenty (20) days prior to such record date, a notice specifying the date on which any such record is to be taken for the purpose of such dividend, distribution or right, and the amount and character of such dividend, distribution or right; *provided*, *however*, that such notice period may be shortened and the right to such notice (or any other notice hereunder) may be waived with the written consent of holders of 60% of the then outstanding shares of the Preferred Stock, voting together as a single class on an as-converted to Common Stock basis.

(j) Reservation of Stock Issuable Upon Conversion. The Corporation shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of Preferred Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of Preferred Stock, in addition to such other remedies as shall be available to the holder of such Preferred Stock, the Corporation will promptly take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of 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 Restated Certificate.

(k) Notices. Any notice required by the provisions of this Section B.3 to be given to the holders of shares of Preferred Stock shall be deemed given five (5) days after deposit in the United States mail, postage prepaid, and addressed to each holder of record at such holder's address appearing on the books of the Corporation.

4. **Voting Rights: Protective Provisions**.

(a) General Voting Rights. The holder of each share of each series of Preferred Stock shall have the right to one (1) vote for each share of Common Stock into which such holder's shares of Preferred Stock could then be converted, with full voting rights and powers equal to the voting rights and powers of the holders of Common Stock, except as required by law or as expressly provided herein, including the protective provisions in Subsection 4(d) below, and shall be entitled, notwithstanding any provision hereof, to notice of any stockholders' meeting in accordance with the Bylaws of the Corporation; and shall be entitled to vote, together with holders of Common Stock, with respect to any question upon which holders of Common Stock have the right to vote, provided that except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to (or waiver of any provision of) this Restated Certificate that relates solely to the terms of the Preferred Stock, if the holders of Preferred Stock are entitled to vote thereon pursuant to this Restated Certificate or pursuant to the DGCL. 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 0.5 being rounded upward).

(b) Adjustment in Authorized Common Stock. The authorized number of shares of Common Stock may be increased or decreased (but not below the number of shares of Common Stock then outstanding or reserved for the exercise of options or warrants or the conversion of Preferred Stock) by (in addition to the vote of the holders of Preferred Stock that may be required by the terms of this Restated Certificate) the affirmative vote of the holders of a majority of the shares of capital stock of the Corporation entitled to vote, voting as a single class on an as-converted to Common Stock basis, irrespective of the provisions of Section 242(b)(2) of the DGCL.

(c) Board of Directors.

(i) Series C Directors. The holders of the Series C Preferred, voting or acting as a separate class, shall be entitled to elect two (2) members (the "***Series C Preferred Directors***") of the Board of Directors at each meeting or pursuant to each consent of the Corporation's stockholders or of the holders of the Series C Preferred for the election of directors.

(ii) Series A/B Directors. The holders of the Series B Preferred and Series A Preferred, voting or acting together as a single class on an as-converted basis, shall be entitled to elect two (2) members (the "***Series A/B Directors***" together with the Series C Preferred Directors, the "***Preferred Directors***") of the Board of Directors at each meeting or pursuant to each consent of the Corporation's stockholders or of the holders of the Series B Preferred and Series A Preferred for the election of directors,

(iii) Preferred and Common. The holders of Common Stock and Preferred Stock, voting together as a single class on an as-converted to Common Stock basis, shall be entitled to elect the remaining members of the Board of Directors at

each meeting or pursuant to each consent of the Corporation's stockholders for the election of directors, and to remove from office such director and to fill any vacancy caused by the resignation, death or removal of such director.

(iv) To the maximum extent allowed by the DGCL, any director who was elected by a specified series, class or classes of shares may be removed during his or her term of office, either for or without cause, by, and only by, the affirmative vote of the holders of the shares of the series, class or classes of shares which initially elected such director. Such vote may be given at a special meeting of such stockholders duly called or by an action by written consent for that purpose. Each director so elected shall hold office until the next annual meeting of shareholders or until a successor has been elected and qualified. The stockholders of the specified series or class entitled to vote upon the election of any director from which a vacancy arose may elect a director at any time to fill such vacancy not filled by the directors.

(v) The provisions of this subsection B.4(c) are subject to that certain Fourth Amended and Restated Voting Agreement, dated on or about the date of the filing of this Restated Certificate, by and among the Corporation and certain holders of Common Stock and Preferred Stock, as such agreement may be restated, amended, supplemented or otherwise modified from time to time.

(d) Protective Provisions. In addition to any other vote required by law or the Restated Certificate with respect to any matter that affects the powers, preferences or special rights of the Preferred Stock or a series thereof, the Corporation shall not (whether by merger, consolidation, reorganization, recapitalization, transfer of assets or otherwise), without first obtaining the approval (by vote or written consent, as permitted by law) of the holders of at least 60% of the then-outstanding shares of the Preferred Stock, voting or acting together as a single class on an as-converted to Common Stock basis, and any such act or transaction entered into without such consent or vote shall be null and void ab initio, and of no force or effect:

(i) take any action, including by way of amendment to the Restated Certificate or the Company's Bylaws, to amend or change the rights, preferences, privileges or powers of the Preferred Stock;

(ii) take any action, including amending, altering or repealing any provision of the Restated Certificate or Bylaws by way of merger, consolidation or otherwise, that would adversely affect the rights, powers, preferences or privileges of the Preferred Stock;

(iii) amend, alter or repeal any provision of the Restated Certificate or Bylaws;

(iv) increase or decrease (other than by conversion or redemption) the authorized shares of Common Stock or any series of Preferred Stock;

(v) authorize, create or issue any shares of any class of capital stock having, or reclassify any existing shares of equity securities into shares having, any rights, preferences or privileges superior to or on parity with the Preferred Stock, in right of redemption, liquidation preference, voting or dividends, or increase the authorized or designated number of shares of any such new class or series;

(vi) authorize or consummate any Liquidation Event or effect any merger or consolidation with another entity, sell, exclusively license or otherwise dispose of a critical asset or technology, or sell, exclusively license or otherwise dispose of more than fifty-one percent (51%) of its assets or properties in any single transaction or series of related transactions;

(vii) redeem, repurchase or otherwise acquire for value (or pay into or set aside for a sinking fund for such purpose) any shares of Common Stock or Preferred Stock or options to purchase capital stock, other than (x) the repurchase of shares of Common Stock from employees, officers, directors, consultants or other service providers pursuant to agreements to repurchase such stock at cost (or, if lower, fair market value, if so provided in the agreement) in connection with the occurrence of certain events, such as the termination of services by the Corporation, (y) redemptions, repurchases or acquisitions of shares of Common Stock, Preferred Stock or options to purchase capital stock approved by the Board of Directors, including a majority of the Preferred Directors then in office, or (z) the exercise of rights of first refusal;

(viii) increase or decrease the number of authorized directors of the Corporation's Board of Directors to a number less than five (5) or more than seven (7);

(ix) declare a dividend or distribute cash or property to holders of Common Stock through dividends (other than a stock split effected in the form of a stock dividend for which appropriate adjustment is made to the Preferred Stock);

(x) incur, create, assume, become liable in any manner with respect to, or permit to exist any indebtedness for borrowed money (including without limitation, capitalized leases), except for indebtedness not exceeding $500,000 in the aggregate or otherwise approved by the Board of Directors (including the approval or consent of the majority of the Preferred Directors then in office);

(xi) amend or modify any existing stock option plan or stock ownership plan or adopt any new stock option plan or stock ownership plan, other than an amendment, modification or adoption approved by the Board of Directors (including the approval or consent of the majority of the Preferred Directors then in office);

(xii) enter into or be a party to any transaction with any director, officer, or employee of the Corporation or any "associate" (as defined in Rule 12b-2 promulgated under the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder) of any such person, except for transactions made in the ordinary course of business and pursuant to reasonable requirements of the Corporation's business and upon fair and reasonable terms that are approved by the Board of Directors (including the approval or consent of the majority of the Preferred Directors then in office);

(xiii) create any subsidiary or make any investment in any other entity, or dispose of the stock of such a subsidiary, or all or a material portion of the assets of any such subsidiary if such assets represent a critical asset or technology of the Corporation, in each case unless approved by the Board of Directors (including the approval or consent of the majority of the Preferred Directors); or

(xiv) amend this Subsection 4(d).

(e) Status of Converted Stock. In the event any shares of Preferred Stock should be converted pursuant to Section B.3 above or otherwise repurchased by the Corporation, the shares so converted or repurchased shall be canceled and shall not be issuable by this Corporation. The Restated Certificate shall be amended at such time or times as the Corporation deems it reasonably practicable to effect the corresponding reduction in the Corporation's authorized stock.

C. Common Stock. Except as otherwise provided herein, the rights granted to the Common Stock are as set forth below:

1. Dividend Rights. Subject to the provisions of Section B.l and Subsections B.3(e) and B.4(d) of this Article IV, 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 the Corporation legally available therefor, such dividends as may be declared from time to time by the Board of Directors.

2. Liquidation Rights. Upon a Liquidation Event, the assets of the Corporation shall be distributed as provided in Section B.2 of this Article IV.

3. Voting Rights. In addition to the voting rights for the election of directors set forth in Section B.4 of this Article IV, the holder of each share of Common Stock shall have the right to one vote, and shall be entitled to notice of any stockholders' meeting in accordance with the Restated Certificate and Bylaws of the Corporation; *provided, however,* that, except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to this Restated Certificate that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to this Restated Certificate or pursuant to the DGCL. There shall be no cumulative voting. Notwithstanding anything to the contrary contained herein, the number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares of Common Stock then outstanding or reserved for the exercise of options or warrants or the conversion of Preferred Stock) as set forth in Subsection B.4(b) of this Article IV.

ARTICLE V

To the fullest extent permitted by law, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the DGCL or any other law of the State of Delaware is amended after approval by the stockholders of this Article V to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL as so amended.

Any repeal or modification of the foregoing provisions of this Article V by the stockholders of the Corporation or by operation of law shall not adversely affect any right or protection of a director of the Corporation existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

ARTICLE VI

To the fullest extent permitted by applicable law, the Corporation is authorized to provide indemnification of (and advancement of expenses to) directors, officers, employees and agents of the Corporation (and any other persons to which the DGCL permits the Corporation to provide indemnification) through bylaw provisions, agreements with such agents or other persons, vote of stockholders or disinterested directors or otherwise, in excess of indemnification and advancement otherwise permitted by Section 145 of the DGCL, subject only to limits created by applicable law (statutory or non-statutory), with respect to actions for breach of duty to the Corporation, its stockholders, and others.

Any amendment, repeal or modification of the foregoing provisions of this Article VI by the stockholders of the Corporation or by operation of law shall not adversely affect any right or protection of a director, officer, employee, agent, or other person existing at the time of, or increase the liability of any director, officer, employee, agent or other person with respect to, any acts or omissions of such director, officer, employee, agent or other person occurring prior to, such amendment, repeal or modification.

ARTICLE VII

The management of the business and the conduct of the affairs of the Corporation shall be vested in its Board of Directors.

Subject to the provisions of Subsections B.4(c) and B.4(d) of Article IV hereof, the number of directors of this Corporation shall be set from time to time by resolution of the Board of Directors.

ARTICLE VIII

Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws may provide. The books of the 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 the Corporation.

ARTICLE IX

Election of directors at an annual or special meeting of stockholders need not be by written ballot unless the Bylaws of the Corporation shall so provide.

ARTICLE X

Subject to any additional vote required by the Restated Certificate or Bylaws, in furtherance and not in limitation of the powers conformed by statute, the Board of Directors of the Corporation is expressly authorized to adopt, amend or repeal the Bylaws of the Corporation.

ARTICLE XI

To the fullest extent permitted by law, the Corporation renounces any expectancy that a Covered Person offer the Corporation an opportunity to participate in a Specified Opportunity and waives any claim that the Specified Opportunity constitutes a corporate opportunity that should have been presented by the Covered Person to the Corporation. A "***Covered Person***" is (i) any director of the Corporation who is not an employee of the Corporation or any of its subsidiaries, or (ii) any entity that is a holder of Preferred Stock and that is principally in the business of investing and reinvesting in other entities, including any partner, member, director, stockholder, employee or agent of any such entity. The definition of "***Covered Person***" excludes any person who is an employee of the Corporation or any of its subsidiaries. A "***Specified 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 a Covered Person, 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 the Corporation. Any repeal or modification of this ARTICLE XI will only be prospective and will not affect the rights under this ARTICLE XI in effect at the time of the occurrence of any actions or omissions to act giving rise to liability.

AMENDED AND RESTATED BYLAWS

OF

XERIS PHARMACEUTICALS, INC.

a Delaware corporation

(initially adopted on March 10, 2011)

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ARTICLE I
OFFICES

1.1 ***Registered Office***. The initial registered office of Xeris Pharmaceuticals, Inc. (the "***Corporation***") in the State of Delaware shall be fixed in the Corporation's certificate of incorporation, as the same may be amended from time to time (the "***Certificate of Incorporation***"), and may be changed from time to time in the discretion of the Board of Directors of the Corporation.

1.2 ***Other Offices***. The Corporation 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 ***Annual Meeting***. Meetings of stockholders may be held at such place, either within or without the State of Delaware, as shall be determined by the Board of Directors and stated in the notice of the meeting. 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 2.13 of these Bylaws. Unless directors are elected by written consent in lieu of an annual meeting as permitted by Section 2.13 of these Bylaws, an annual meeting of the stockholders for the election of directors shall be held on a date and at a time as shall be designated by the Board of Directors and stated in the notice of the meeting. Any other proper business may be transacted at the annual meeting.

2.2 ***Special Meetings***. Unless otherwise prescribed by statute or by the Certificate of Incorporation, special meetings of the stockholders of the Corporation may be called for any purpose or purposes by the (i) Chief Executive Officer, if any; (ii) President, in the absence of a Chief Executive Officer; or (iii) Secretary at the request in writing of (A) a majority of the members of the Board of Directors or (B) holders of at least twenty percent (20%) of the total voting power of all outstanding shares of stock of the Corporation then entitled to vote, and may not be called by the stockholders absent such a request. Any such request shall state the purpose or purposes of the proposed meeting.

If any person or persons other than the Board calls a special meeting, the request shall: (i) be in writing; (ii) specify the date and time of such meeting and the general nature of the business proposed to be transacted; and (iii) be delivered personally or sent by registered mail or by facsimile transmission to the Corporation's Chairperson of the Board, Chief Executive Officer, President (in the absence of a Chief Executive Officer) or Secretary. The officer(s) receiving the request shall cause notice to be promptly given to the stockholders entitled to vote at such meeting, in accordance with the provisions of Section 2.3 and Section 4.1 of these Bylaws, that a meeting will be held at the time requested by the person or persons calling the meeting. No business may be transacted at such special meeting other than business specified in such notice to stockholders.

2.3 ***Notice of Stockholders' Meetings***. All notices of meetings of stockholders shall be sent or otherwise given in accordance with Section 4.1 of these Bylaws not less 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 notice shall specify the place, if any, date and hour of the meeting, the means of remote communication, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called.

2.4 ***Voting List***. 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 of each stockholder and the number of shares registered in the name of each stockholder. The Corporation shall not be required to include electronic mail addresses or other electronic contact information on such list. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting for a period of at least ten (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 Corporation's principal executive office. 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. Such list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

2.5 ***Quorum***. 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 chairman of the meeting or 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 which might have been transacted at the meeting as originally notified.

2.6 ***Adjourned Meeting; Notice***. When a meeting is adjourned to another time or place, unless these Bylaws otherwise require, notice need not be given of the adjourned meeting if the time, place, if any, thereof and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken. At the continuation of the adjourned meeting, the Corporation may transact any business that might have been transacted at the original meeting. 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.

2.7 ***Conduct of Business***. The chairman of any meeting of stockholders shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of business.

2.8 ***Voting***. The stockholders of record on the books of the Corporation at the close of business on the record date as determined by the Board of Directors and only such stockholders shall be entitled to vote at any meeting of stockholders or any adjournment thereof, subject to Section 217 (relating to voting rights of fiduciaries, pledgors and joint owners of stock) and Section 218 (relating to voting trusts and other voting agreements) of the Delaware General Corporation Law (the "***DGCL***"). Except as may be otherwise provided in the Certificate of Incorporation or these Bylaws, each stockholder shall be entitled to one vote for each share of capital stock held by such stockholder.

2.9 ***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 entitled 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 may fix, in advance, a record date, which record date shall not precede the date on which the resolution fixing the record date is adopted and 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 such action. If no record date is fixed by the Board of Directors, then: (i) the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or if notice is waived, at the close of business on the day next preceding the day on which the meeting is held; (ii) the record date for determining stockholders entitled to express consent to corporate action in writing without a meeting, when no prior action by the Board is necessary, shall be the day on which the first written consent is expressed and (iii) the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board adopts the resolution relating thereto. 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.

2.10 ***Action at Meetings***. When a quorum is present at any meeting, the vote of the holders of a majority of the shares of 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 applicable law 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.

2.11 ***Proxies***. Each stockholder entitled to vote at a meeting of stockholders or to express consent or dissent to corporate action in writing without a meeting may authorize another person or persons to act for such stockholder by proxy authorized by an instrument in writing or by a transmission permitted by the DGCL filed in accordance with the procedure established for the meeting, but no such proxy shall be voted or acted upon after three (3) years from its date, unless the proxy provides for a longer period. The provisions of Section 212 of the DGCL shall govern the revocability of any proxy that states on its face that it is irrevocable.

2.12 ***Action by Stockholders Without a Meeting***. Unless otherwise provided in the Certificate of Incorporation, any action required by the DGCL to be taken at any annual or special meeting of stockholders of the Corporation, or any action which may be taken at any annual or special meeting of such stockholders, may be taken without a meeting, without prior notice and without a vote, if a consent or consents in writing, setting forth the action so taken, shall be signed by the holders of outstanding stock having not less than the minimum 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 and shall be delivered to the Corporation by delivery to its registered office in Delaware (by hand or by certified or registered mail, return receipt requested), to its principal place of business, or to an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Prompt notice of the taking of corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for such meeting had been the date that written consents signed by a sufficient number of stockholders to take the action were delivered to the Corporation as provided in Section 228 of the DGCL. In the event that the action which is consented to is such as would have required the filing of a certificate under any provision of the DGCL if such action had been voted on by stockholders at a meeting thereof, the certificate filed under such provision shall state, in lieu of any statement required by such provision concerning any vote of stockholders, that written consent has been given in accordance with Section 228 of the DGCL.

A telegram, cablegram or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or by a person authorized to act for a stockholder, shall be deemed to be written, signed and dated for the purposes of this Section 2.13, provided that any such telegram, cablegram or other electronic transmission sets forth or is delivered with information from which the Corporation can determine (i) that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or by a person authorized to act for the stockholder and (ii) the date on which such stockholder or authorized person 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 (i) such consent is reproduced in paper form and until such paper form is delivered to the Corporation by delivery to its registered office in Delaware (by hand or by certified mail, return receipt requested), its principal place of business or an officer or agent of the Corporation having custody of the books in which proceedings of meetings of stockholders are recorded or (ii) such consent is delivered to the Corporation's principal place of business or to an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders, if delivered to the extent and in the manner provided by resolution of the Board of Directors.

2.13 ***Meeting by Remote Communication***. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, as authorized by Section 211(a)(2) of the DGCL the Board may in its sole discretion permit stockholders to participate in a meeting of stockholders by means of remote communication and shall be deemed present in person and permitted to vote at such meeting, provided that (i) the Corporation shall implement reasonable measures to verify that each person deemed present and permitted to vote at such 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 such meeting and to vote on matters submitted to the stockholders, including an opportunity to read or hear the proceedings of such meeting substantially concurrently with such proceedings, and (iii) if such any stockholder or proxyholder votes or takes other action at such meeting by means of remote communication, a record of such vote or other action shall be maintained by the Corporation.

ARTICLE III
DIRECTORS

3.1 ***Powers***. The business and affairs of the Corporation shall be managed by or under the direction of its Board of Directors, except as may be otherwise provided in the DGCL, the Certificate of Incorporation or these Bylaws.

3.2 ***Number; Election; Tenure and Qualification***. The number of directors which shall constitute the whole board shall be fixed from time to time by resolution of the Board of Directors or by the stockholders at an annual meeting of the stockholders (unless the directors are elected by written consent in lieu of an annual meeting as provided in Section 2.12); provided that the number of directors shall be not less than one (1). With the exception of the first Board of Directors, which shall be elected by the incorporator, and except as provided in the Corporation's Certificate of Incorporation or in Section 3.3, the directors shall be elected (i) at the annual meeting of the stockholders by a plurality vote of the shares represented in person or by proxy or (ii) by written consent of the Corporation's stockholders pursuant to Section 2.12, and each director elected shall hold office until his successor is elected and qualified or until such director's earlier resignation, removal or death. Directors need not be stockholders unless so required by the Certificate of Incorporation.

3.3 ***Vacancies and Newly Created Directorships***. Unless otherwise provided in the Certificate of Incorporation, 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. Each director so chosen shall serve until his successor is elected and qualified or until such director's earlier resignation, removal or death. If there are no directors in office, then an election of directors may be held in the manner provided by statute.

If at any time, by reason of death or resignation or other cause, the Corporation should have no directors in office, then any officer or any stockholder or an executor, administrator, trustee or guardian of a stockholder, or other fiduciary entrusted with like responsibility for the person or estate of a stockholder, may call a special meeting of stockholders in accordance with the provisions of the Certificate of Incorporation or these Bylaws, or may apply to the Court of Chancery for a decree summarily ordering an election as provided in Section 211 of the DGCL.

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 (as constituted immediately prior to any such increase), the Court of Chancery may, upon application of any stockholder or stockholders holding at least ten (10%) percent of the total number of 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 as aforesaid, which election shall be governed by the provisions of Section 211 of the DGCL as far as applicable.

3.4 ***Location of Meetings; Meetings By Telephone***. The Board of Directors of the Corporation may hold meetings, both regular and special, either within or without the State of Delaware. 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 communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

3.5 ***Meeting of Newly Elected Board of Directors***. The first meeting of each newly elected Board of Directors shall be held immediately following the annual meeting of stockholders and no notice of such meeting shall be necessary to the newly elected directors in order legally to constitute the meeting, provided a quorum shall be present. In the event such meeting is not held at such time, 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; provided that any director who is absent when such a determination is made shall be given notice of such location.

3.7 ***Special Meetings***. Special meetings of the Board of Directors may be called at any time by a person authorized to call a meeting under this Section 3.7. Special meetings may be called by the (i) Chief Executive Officer, if any, (ii) President, in the absence of a Chief Executive Officer, or (iii) Secretary, upon the written request of two directors unless the Board of Directors consists of only one director, in which case special meetings may be called by the Secretary upon the written request of the sole director. Notice may be waived in accordance with Section 229 of the DGCL, or any successor thereto. If the notice is (i) delivered personally by hand, by courier or by telephone, (ii) sent by facsimile or (iii) sent by electronic mail, it shall be delivered or sent at least twenty-four (24) hours before the time of the holding of the meeting. If the notice is sent by United States mail, it shall be deposited in the United States mail at least four (4) days before the time of the holding of the meeting. Any oral notice may be communicated to the director. The notice need not specify the place of the meeting (if the meeting is to be held at the Corporation's principal executive office) nor the purpose of the meeting.

3.8 ***Quorum and Action at Meetings***. At all meetings of the Board of Directors, a majority of the directors then in office shall constitute a quorum for the transaction of business, and the act of a majority of the directors present at any meeting at which there is a quorum shall be the act of the Board of Directors, except as may be otherwise specifically provided by statute or by the Certificate of Incorporation. If a quorum shall not be 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. A meeting at which a quorum is initially present may continue to transact business notwithstanding the withdrawal of directors, if any action taken is approved by at least a majority of the required quorum for that meeting.

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 or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

3.10 ***Committees***. The Board of Directors may, by resolution passed by a majority of the whole board, 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 such member or members constitute a quorum, may unanimously appoint another member of the Board 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, but no such committee shall have the power or authority in reference to (i) approving, 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 Bylaw of the Corporation. Such committee or committees shall have such name or names as may be determined from time to time by resolution adopted by the Board of Directors.

3.11 ***Committee Minutes***. Each committee shall keep regular minutes of its meetings and report the same to the Board of Directors when required to do so by the Board of Directors.

3.12 ***Meetings and Action of Committees***. Meetings and actions of committees shall be governed by, and held and taken in accordance with, the provisions of: (i) Section 3.4 (Location of Meetings; Meetings By Telephone); (ii) Section 3.6 (Regular Meetings); (iii) Section 3.7 (Special Meetings); (iv) Section 3.8 (Quorum and Action at Meetings); (v) Section 3.9 (Action Without a Meeting) and (vi) Section 4.4 (Waiver of Notice); with such changes in the context of those Bylaws as are necessary to substitute the committee and its members for the Board and its members; *provided*, *however*, that (a) the time of regular meetings of committees may be determined either by resolution of the Board or by resolution of the committee, (b) special meetings of committees may also be called by resolution of the Board and (c) notice of special meetings of committees shall also be given to all alternate members, who shall have the right to attend all meetings of the committee. The Board may adopt rules for the government of any committee not inconsistent with the provisions of these Bylaws.

3.13 ***Director Compensation***. 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 ***Resignation***. Any director or officer of the Corporation may resign at any time. Each such resignation shall be made in writing or by electronic transmission and shall take effect at the time specified therein, or, if no time is specified, at the time of its receipt by either the Board of Directors, the President or the Secretary. The acceptance of a resignation shall not be necessary to make it effective unless expressly so provided in the resignation.

3.15 ***Removal***. Unless otherwise restricted by the Certificate of Incorporation, these Bylaws or the DGCL, any director or the entire Board of Directors may be removed, with or without cause, by the holders of a majority of shares then entitled to vote at an election of directors.

ARTICLE IV
NOTICES

4.1 ***Notice to Directors***. Whenever, under the provisions of the DGCL or of the Certificate of Incorporation or of these Bylaws, notice is required to be given to any director such notice shall be (i) delivered personally by hand, by courier or by telephone; (ii) sent by United States first-class mail, postage prepaid; (iii) sent by facsimile; or (iv) sent by electronic mail, directed to each director at that director's address, telephone number, facsimile number or electronic mail address, as the case may be, as shown on the Corporation's records.

4.2 ***Notice to Stockholders***. Without limiting the manner by which notice otherwise may be given effectively to stockholders pursuant to the DGCL, the Certificate of Incorporation or these Bylaws, any notice to stockholders 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 to whom the notice is given. Any such consent shall be revocable by the stockholder 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. Notice given by electronic transmission shall be deemed given: (a) if by facsimile telecommunication, when directed to a number at which the stockholder has consented to receive notice; (b) if by electronic mail, when directed to an electronic mail address at which the stockholder has consented to receive notice; (c) if by a posting on an electronic network together with separate notice to the stockholder of such specific posting, upon the later of (x) such posting and (y) the giving of such separate notice; and (d) if by any other form of electronic transmission, when directed to the stockholder. As used in 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. Notice by a form of electronic transmission shall not apply to Sections 164, 296, 311, 312 or 324 of the DGCL.

4.3 ***Affidavit of Notice***. 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.

4.4 ***Waiver of Notice***. Whenever any notice is required to be given under any provision of the DGCL or the Certificate of Incorporation or these Bylaws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to such notice, whether before or after the time stated therein, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders, directors or members of a committee of directors need by specified in any written waiver of notice or any waiver by electronic transmission unless so required by the Certificate of Incorporation or these Bylaws.

ARTICLE V
OFFICERS

5.1 ***Enumeration***. The officers of the Corporation shall be chosen by the Board of Directors and shall include a President and a Secretary and such other officers with such other titles as the Board of Directors shall determine from time to time. Among the officers the Board of Directors may designate are a Chief Executive Officer, Chief Operating Officer, Chief Financial Officer and Treasurer. The Board of Directors also may 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. The Board of Directors may elect from among its members a Chairman of the Board and a Vice Chairman of the Board.

5.2 ***Appointment of Officers***. The Board of Directors shall appoint the officers of the Corporation, except such officers as may be appointed in accordance with the provisions of Section 5.3 of these Bylaws, subject to the rights, if any, of an officer under any contract of employment. Any vacancy occurring in any office of the Corporation shall be filled by the Board, or as provided in Section 5.3.

5.3 ***Appointment of Other Officers and Agents***. The Board of Directors may appoint, or empower the Chief Executive Officer or, in the absence of a Chief Executive Officer, the President to appoint, such other officers and agents as the business of the Corporation may require. Each of such officers and agents shall hold office for such period, have such authority and perform such duties as are provided in these Bylaws or as the Board of Directors may from time to time determine.

5.4 ***Removal and Resignation of Officers***.

(a) Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, either with or without cause, by an affirmative vote of the majority of the Board of Directors at any regular or special meeting of the Board of Directors or, except in the case of an officer chosen by the Board of Directors, by any officer upon whom such power of removal may be conferred by the Board of Directors.

(b) Any officer may resign at any time by giving written notice to the Corporation. Any resignation shall take effect at the date of the receipt of that notice or at any later time specified in that notice. Unless otherwise specified in the notice of resignation, the acceptance of the resignation shall not be necessary to make it effective. Any resignation is without prejudice to the rights, if any, of the Corporation under any contract to which the officer is a party.

5.5 ***Chairman of the Board and Vice Chairman of the Board***. The Chairman of the Board, if any, shall preside at all meetings of the Board of Directors and of the stockholders at which the Chairman shall be present. The Chairman shall have and may exercise such powers as are, from time to time, assigned to the Chairman by the Board of Directors and as may be provided by law. 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 the Vice Chairman shall be present. The Vice Chairman shall have and may exercise such powers as are, from time to time, assigned to such person by the Board of Directors and as may be provided by law.

5.6 ***Chief Executive Officer***. In the absence of a Chairman and/or Vice Chairman of the Board, the Chief Executive Officer shall preside as the chairman of meetings of the stockholders and the Board of Directors. The Chief Executive Officer shall, subject to the control of the Board of Directors, 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. All other officers, officials, employees and agents shall report directly or indirectly to the Chief Executive Officer. The Chief Executive Officer, President or any executive Vice President shall execute bonds, mortgages and other contracts on behalf 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.

5.7 ***President***. In the absence or disability of the Chief Executive Officer, the President shall perform all the duties of the Chief Executive Officer. When acting as the Chief Executive Officer, the President shall have all the powers of, and be subject to all the restrictions upon, the Chief Executive Officer. The President shall have such other powers and perform such other duties as from time to time may be prescribed by the Board of Directors, these Bylaws, the Chief Executive Officer or the Chairman of the Board.

5.8 ***Vice Presidents***. In the absence of the President or in the event of the President's 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 Board of 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. Vice Presidents, by virtue of their appointment as such, shall not necessarily be deemed to be executive officers of the Corporation, such status as an executive officer only being conferred if and to the extent determined by the Board of Directors when such Vice President is placed in charge of a principal business unit, division or function (*e.g.*, sales, administration or finance) or performs a policy-making function for the Corporation. Each executive Vice President shall at all times possess, and upon the authority of the President or the Chief Executive Officer any non-executive Vice President shall from time to time possess, power to sign all certificates, contracts and other instruments of the Corporation, except as otherwise limited by the Chairman of the Board, the President, Chief Executive Officer or the Vice Chairman of the Board. The Vice Presidents shall perform other duties commonly incident to their office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

5.9 ***Secretary***. The Secretary shall keep the minutes of all meetings of the Board of Directors, committees of the Board of Directors and the stockholders, in books provided for that purpose; shall attend to the giving and serving of all notices; may in the name of the Corporation affix the seal of the Corporation to all contracts and attest the affixation of the seal of the Corporation thereto; may sign with the other appointed officers all certificates for shares of capital stock of the Corporation; and shall have charge of the certificate books, transfer books and stock ledgers, and such other books and papers as the Board of Directors may direct, all of which shall at all reasonable times be open to inspection of any director upon application at the office of the Corporation during business hours. The Secretary shall perform all other duties given in these Bylaws and other duties commonly incident to such office and shall also perform such other duties and have such other powers as the Board of Directors shall designate from time to time. The chief

executive officer may direct any Assistant Secretary to assume and perform the duties of the Secretary in the absence or disability of the Secretary, and each Assistant Secretary shall perform other duties commonly incident to such office and shall also perform such other duties and have such other powers as the Board of Directors or the chief executive officer, shall designate from time to time.

5.10 ***Assistant Secretary***. Each Assistant Secretary shall have the usual powers and duties pertaining to such offices, together with such other powers and duties as designated in these Bylaws and as from time to time may be assigned to an Assistant Secretary by the Board of Directors, the Chairman of the Board, the President, the Vice Chairman of the Board, or the Secretary. The Assistant Secretaries shall exercise the powers of the Secretary during that officer's absence or inability or refusal to act.

5.11 ***Treasurer***. The Treasurer shall keep or cause to be kept the books of account of the Corporation in a thorough and proper manner and shall render statements of the financial affairs of the Corporation in such form and as often as required by the Board of Directors, the Chairman of the Board, the Vice Chairman of the Board, chief executive officer, if one be designated, or the Chief Financial Officer. The Treasurer, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the Corporation. The Treasurer shall perform other duties commonly incident to such office and shall also perform such other duties and have such other powers as the Board of Directors, the Chairman of the Board, the Vice Chairman of the Board or the President shall designate from time to time. In absence of a designated Chief Financial Officer, unless otherwise determined by the Board of Directors or chief executive officer, the Treasurer shall serve as the chief financial officer subject to control of the chief executive officer. The Chief Financial Officer, if any be designated, may, but need not serve as the Treasurer.

5.12 ***Assistant Treasurer***. The Assistant Treasurer, or if there 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.

5.13 ***Voting and Exercise of Rights of Shares of Other Corporations***. The Chairman of the Board, the Chief Executive Officer, the President or any other person authorized by the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President, is authorized to vote, represent, and exercise on behalf of the Corporation all rights incident to any and all shares of any other corporation or corporations standing in the name of the Corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

ARTICLE VI
CAPITAL STOCK

6.1 ***Certificates***. The shares of the Corporation shall be represented by certificates, provided that the Board may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the Corporation. Every holder of stock represented by certificates shall be entitled to have a certificate signed by, or in the name of the Corporation by the chairperson or vice

chairperson of the Board, or the president or vice president, and by the treasurer or an assistant treasurer, or the secretary or an assistant secretary of the Corporation representing the number of shares registered in certificate form. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate has ceased to be an officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if such person were an officer, transfer agent or registrar at the date of issue.

6.2 ***Special Designation on Certificates***. 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 qualifications, 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. Within a reasonable time after the issuance or transfer of uncertificated stock, the Corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to Sections 151, 156, 202(a) or 218(a) of the DGCL or 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.

6.3 ***Lost Certificates***. Except as provided in this Section 6.3, no new certificates for shares shall be issued to replace a previously issued certificate unless the latter is surrendered to the Corporation and cancelled at the same time. The Corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the Corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to give the Corporation a bond sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

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 in its books. Upon receipt of proper transfer instructions from the registered owner of uncertificated shares such uncertificated shares shall be canceled and issuance of new equivalent uncertificated shares or certificated shares shall be made to the person entitled thereto and the transaction shall be recorded upon the books of the Corporation.

6.5 ***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, and to vote as such owner, and 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***. The Board, subject to any restrictions contained in the DGCL or the Certificate of Incorporation, may declare and pay dividends upon the shares of its capital stock. Dividends may be paid in cash, in property or in shares of capital stock, subject to the provisions of the Certificate of Incorporation. 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 Board of Directors from time to time, in their absolute 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 Board of Directors shall think conducive to the interest of the Corporation, and the Board of Directors may modify or abolish any such reserve in the manner in which it was created.

7.2 ***Checks***. From time to time, the Board shall determine by resolution which person or persons may sign or endorse all checks, drafts, other orders for payment of money, notes or other evidences of indebtedness that are issued in the name of or payable to the Corporation, and only the persons so authorized shall sign or endorse those instruments.

7.3 ***Execution of Corporate Contracts and Instruments***. The Board of Directors, except as otherwise provided in these Bylaws, may authorize any officer or officers, or agent or agents, to enter into any contract or execute any instrument in the name of and on behalf of the Corporation; such authority may be general or confined to specific instances. Unless so authorized or ratified by the Board or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the Corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

7.4 ***Fiscal Year***. The fiscal year of the Corporation shall be fixed by resolution of the Board of Directors.

7.5 ***Seal***. The Corporation may adopt a corporate seal, which shall be adopted and which may be altered by the Board. The Corporation may use the corporate seal by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

7.6 ***Loans***. The Board of Directors of the Corporation may, without stockholder approval, authorize loans to, or guaranty obligations of, or otherwise assist any officer or other employee of the Corporation or of its subsidiary, including any officer or employee who is a director of the Corporation or its subsidiary, whenever, in the judgment of the Board of Directors, such loan, guaranty or assistance may reasonably be expected to benefit the Corporation. The loan, guaranty or other assistance includes, without limitation, the adoption of employee benefit plans under which loans and guarantees may be made, and 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.

7.7 ***Stock Transfer Agreements***. The Corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the Corporation to restrict the transfer of shares of stock of the Corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

7.8 ***Construction; Definitions***. Unless the context requires otherwise, the general provisions, rules of construction, and definitions in the DGCL shall govern the construction of these Bylaws. Without limiting the generality of this provision, the singular number includes the plural, the plural number includes the singular, and the term "***person***" includes both a corporation and a natural person.

ARTICLE VIII
INDEMNIFICATION

8.1 ***Scope***. The Corporation shall, to the fullest extent permitted by Section 145 of the DGCL, as that Section may be amended and supplemented from time to time, indemnify any director, officer, employee or agent of the Corporation, against expenses (including attorneys' fees), judgments, fines, amounts paid in settlement and/or other matters referred to in or covered by that Section and reasonably incurred by the person in connection with such action, suit or proceeding, by reason of the fact that such person is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise.

8.2 ***Advancing Expenses***. Expenses (including attorneys' fees) incurred by a present or former director or officer of the Corporation in defending a civil, criminal, administrative or investigative action, suit or proceeding by reason of the fact that such person is or was a director, officer, employee or agent of the Corporation (or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise) 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 or officer to repay such amount if it shall ultimately be determined that such person is not entitled to be indemnified by the Corporation as authorized by relevant provisions of the DGCL; *provided*, *however*, the Corporation shall not be required to advance such expenses to a director (i) who commences any action, suit or proceeding as a plaintiff unless such advance is specifically approved by a majority of the Board of Directors or (ii) who is a party to an action, suit or proceeding brought by the Corporation and approved by a majority of the Board of Directors which alleges willful misappropriation of corporate assets by such director, disclosure of confidential information in violation of such director's fiduciary or contractual obligations to the Corporation, or any other willful and deliberate breach in bad faith of such director's duty to the Corporation or its stockholders.

8.3 ***Liability Offset***. The Corporation's obligation to provide indemnification under this Article VIII shall be offset to the extent the indemnified party is indemnified by any other source including, but not limited to, any applicable insurance coverage under a policy maintained by the Corporation, the indemnified party or any other person.

8.4 ***Continuing Obligation***. The provisions of this Article VIII shall be deemed to be a contract between the Corporation and each director of the Corporation 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.

8.5 ***Non-exclusivity of Rights***. The indemnification and advancement of expenses provided for in this Article VIII shall (i) not be deemed exclusive of any other rights to which those indemnified may be entitled under any bylaw, 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 such a person.

8.6 ***Insurance***. The Corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the Corporation would have the power to indemnify such person against such liability under applicable law.

8.7 ***Other Persons***. In addition to the indemnification rights of directors, officers, employees or agents of the Corporation, the Board of Directors in its discretion shall have the power on behalf of the Corporation to indemnify any other person made a party to any action, suit or proceeding who the Corporation may indemnify under Section 145 of the DGCL.

8.8 ***Definitions***. The phrases and terms set forth in this Article VIII shall be given the same meaning as the identical terms and phrases are given in Section 145 of the DGCL, as that Section may be amended and supplemented from time to time.

ARTICLE IX
AMENDMENTS

Except as otherwise provided in the Certificate of Incorporation, these Bylaws may be altered, amended or repealed, or new Bylaws may be adopted, by the holders of a majority of the outstanding voting shares 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.

*** * * * ***

CERTIFICATE OF SECRETARY

OF

XERIS PHARMACEUTICALS, INC.

The undersigned certifies:

1. That the undersigned is the duly elected and acting Secretary of Xeris Pharmaceuticals, Inc., a Delaware corporation (the "***Corporation***"); and

2. That the foregoing Amended and Restated Bylaws constitute the Bylaws of the Corporation as duly adopted by the Board of Directors of the Corporation on March 10, 2011.

IN WITNESS WHEREOF, I have hereunto subscribed my name as of March 10, 2011.

/s/ Yash Sabharwal
Yash Sabharwal
Secretary

XERIS PHARMACEUTICALS, INC.

SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

December 31, 2015

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XERIS PHARMACEUTICALS, INC.

SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

THIS SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (the "***Agreement***") is made as of December 31, 2015 by and among (i) Xeris Pharmaceuticals, Inc., a Delaware corporation (the "***Company***")**,** (ii) the holders of the Preferred Stock (as defined herein) listed on **Schedule A** hereto (each, an "***Investor***" and collectively, the "***Investors***"), (iii) certain holders of the Company's Common Stock listed on **Schedule B** hereto (each, a "***Key Holder***" and collectively, the "***Key Holders***"), and (iv) certain Lending Institutions (as defined herein) that may become a party hereto from time to time. Capitalized terms not defined herein shall have the meanings ascribed to such terms in the Series C Preferred Stock Purchase Agreement of even date herewith (the "***Purchase Agreement***") by and among the Company and the Investors. This Agreement amends, supersedes and replaces the Company's Amended and Restated Investors' Rights Agreement, dated September 17, 2015 (the "***Prior Agreement***").

RECITALS

WHEREAS, the Company and certain Investors are parties to the Purchase Agreement pursuant to which the Company has agreed to sell, and such Investors have agreed to purchase, shares of the Company's Series C Convertible Preferred Stock, par value $0.0001 per share (the "***Series C Preferred Stock***");

WHEREAS, certain of the Investors (the "***Existing Investors***") hold shares of the Company's Series A Convertible Preferred Stock, par value $0.0001 per share (the "***Series A Preferred Stock***") and shares of the Company's Series B Convertible Preferred Stock, par value $0.0001 per share (the "***Series B Preferred Stock***") and/or may hold shares of Common Stock issued upon conversion thereof after the date of this Agreement and possess registration rights, information rights, preemptive rights and other rights pursuant to the Prior Agreement;

WHEREAS, pursuant to Section 4.6 of the Prior Agreement, the approval of (i) the Company and (ii) Investors (as that term is defined in the Prior Agreement) holding at least two-thirds of the Registrable Securities (as that term is defined in the Prior Agreement) then held by all the Investors (as that term is defined in the Prior Agreement) (the "***Requisite Consent***") is required to alter, amend, waive or modify the Prior Agreement;

WHEREAS, the undersigned Existing Investors constitute the Requisite Consent and such Existing Investors desire to amend and restate the Prior Agreement and to accept the rights created pursuant to this Agreement in lieu of the rights granted to them under the Prior Agreement, and to irrevocably waive any and all preemptive rights, rights of first offer, notice rights or other similar rights under the Prior Agreement to purchase any portion of the Company's Series C Preferred Stock, including any of the Company's Common Stock issued upon conversion thereof;

WHEREAS, the Company's and such Investors' respective obligations under the Purchase Agreement are conditioned on the execution and delivery of this Agreement;

WHEREAS, in order to induce the Company to enter into the Purchase Agreement and to induce such Investors to invest in the Company's Series C Preferred Stock pursuant to the Purchase Agreement, the parties hereto hereby agree that this Agreement shall govern the rights of the Investors and the Key Holders to cause the Company to register shares of Common Stock and certain other matters as set forth herein; and

WHEREAS, certain of the Investors' obligations under the Purchase Agreement are conditioned upon the execution and delivery of this Agreement by such Investors and those parties to the Prior Agreement necessary to effect an amendment and restatement of the Prior Agreement pursuant to Section 4.6 of the Prior Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual promises and covenants set forth herein, the Existing Investors 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:

ARTICLE I
REGISTRATION RIGHTS

1.1 ***Definitions***. For purposes of this Article I:

"***Certificate of Incorporation***" shall mean the Company's Fourth Amended and Restated Certificate of Incorporation as in effect as of the date hereof and as amended and restated from time to time.

"***Common Stock***" shall mean the Company's Common Stock, par value $0.0001 per share.

"***Exchange Act***" shall mean the Securities Exchange Act of 1934, as amended.

"***Form S-3***" shall mean such form under the Securities Act as in effect on the date hereof or any registration forms under the Securities Act subsequently adopted by the SEC that permit inclusion or incorporation of substantial information by reference to other documents filed by the Company with the SEC.

"***Holder***" shall mean (i) any person owning or having the right to acquire Registrable Securities or any assignee thereof in accordance with Section 1.12 hereof and (ii) each Key Holder; *provided*, *however*, that neither the Key Holders nor any Lending Institution shall be considered Holders for the purposes of initiating a demand for filing a Registration Statement pursuant to Sections 1.2 and 1.11.

"***IPO***" means the Company's first underwritten public offering of its Common Stock under the Securities Act.

"***Lending Institution***" shall mean a bank, savings and loan association or other similar lending institution that lends funds to the Company, and in connection therewith receives equity securities of the Company, all on terms approved by the Board of Directors, including the approval or consent of a majority of the Preferred Directors then in office.

"***Preferred Director***" shall have the meaning given to such term in the Certificate of Incorporation.

"***Preferred Stock***" shall mean the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock.

"***Qualified Public Offering***" shall have the meaning set forth in the Certificate of Incorporation.

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 Securities Act, and the declaration or ordering of effectiveness of such registration statement or document.

"***Registrable Securities***" shall mean:

(i) shares of the Common Stock now held or hereafter acquired by the Investors (including shares of Common Stock issued or issuable upon conversion of the Preferred Stock of the Company) and any shares of Common Stock of the Company issued as (or issuable upon the conversion or exercise of any warrant, right or other security which is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of such shares;

(ii) the shares of Common Stock now held or hereafter acquired by Key Holders (provided such shares are issued to the Key Holders before or in connection with a Qualified Public Offering and provided that shares of Common Stock identified in (i) shall not be categorized under (ii)) and any shares of Common Stock of the Company issued as (or issuable upon the conversion or exercise of any warrant, right or other security which is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of such shares; *provided*, *however*, that such shares of Common Stock described in this clause (ii) shall not be deemed Registrable Securities for the purposes of Sections 1.2 (except for purposes of 1.2(a)(iii)), and 1.11 (except for purposes of Sections 1.11(d)), 1.14 and 4.6 herein (the "***Key Holder Registrable Securities***"); and

(iii) shares of Common Stock issued or issuable upon exercise of any warrants or convertible securities issued to a Lending Institution after the date hereof upon the approval by the Board of Directors (including the approval or consent of a majority of the Preferred Directors then in office) of such shares constituting Registrable Securities hereunder (provided such shares are issued to the Lending Institutions before or in connection with a Qualified Public Offering and provided that shares of Common Stock identified in clause (i) above shall not be categorized under this clause (iii)) and any shares of Common Stock of the Company issued as (or issuable upon the conversion or exercise of any warrant, right or other security which is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of such shares; *provided*, *however*, that such shares of Common Stock shall not be deemed Registrable Securities for purposes of Sections 1.2 (except for purposes of Section 1.2(a)(iii)) 1.11 (except for purposes of Sections 1.11(d)), 1.14 and 4.6 herein, *provided further*, *however*, that Registrable Securities shall not include any shares of Common Stock described in clause (i), (ii) or (iii) above which have previously been registered or which have been sold to the public pursuant to a registration statement or Rule 144, or which have been sold in a private transaction in which the transferor's rights under this Article I are not validly assigned in accordance with this Agreement.

The number of shares of "***Registrable Securities then outstanding***" at any given time and from time to time shall be equal to the number of shares of Common Stock outstanding which are, and the number of shares of Common Stock issuable pursuant to then exercisable or convertible securities which are, Registrable Securities.

"***Rule 144***" shall mean Rule 144 as promulgated by the Securities and Exchange Commission under the Securities Act, as such Rule may be amended from time to time, or any similar successor rule that may be promulgated by the SEC.

"***SEC***" shall mean the Securities and Exchange Commission.

"***Securities Act***" shall mean the Securities Act of 1933, as amended.

1.2 ***Request for Registration***.

(a) At any time after the earlier of (i) December 31, 2020 or (ii) one hundred eighty (180) days after the effective date of the first registration statement for a firm commitment underwritten public offering of the Company's Common Stock, the Investors holding at least a majority of the shares of Registrable Securities issued or issuable upon conversion of the Preferred Stock may request that the Company effect a registration under the Securities Act of all or part of their Registrable Securities (each, a "***Demand Registration***"), subject to the terms and conditions of this Agreement. Any request (a "***Registration Request***") for a Demand Registration shall specify (A) the approximate number of shares of Registrable Securities requested to be registered and (B) the intended method of distribution of such shares. Within twenty (20) days of the receipt of the Registration Request, the Company will give written notice of such requested registration to all other holders of Registrable Securities and will use its best efforts to effect as soon as practicable (and in any event within ninety (90) days of the date such request is given) the registration under the Securities Act requested and will include in such registration all shares of Registrable Securities that holders of Registrable Securities request the Company to include in such registration by written notice given to the Company within twenty (20) days after the Company's sends such notice (subject to underwriter cut-backs as provided in this Agreement).

(i) The Company shall not be required to effect more than two (2) Demand Registrations that have been declared or ordered effective and shall have the deferral rights set forth in Section 1.2(c) below.

(ii) The Company shall not be required to effect a Demand Registration unless at least 20% of the then outstanding Registrable Securities shall be included in such registration (or any lesser percentage if the anticipated offering would exceed an aggregate offering price to the public, net of discounts and commissions, of $10,000,000).

(iii) Without the prior written consent of the holders of a majority of the shares of Registrable Securities held by the Investors included in such registration, the Company will not include in any Demand Registration any securities other than (a) Registrable Securities, (b) shares of stock pursuant to Section 1.3 hereof, and (c) securities to be registered for offering and sale on behalf of the Company. If the managing underwriter(s) advise the Company in writing that in their opinion the number of shares of Registrable Securities and, if permitted hereunder, other securities in such offering, exceeds the number of shares of Registrable Securities and other securities, if any, which can be sold in an orderly manner in such offering within a price range acceptable to the holders of a majority of the shares of Registrable Securities held by Investors initially requesting registration,

the Company will include in such registration, prior to the inclusion of any securities which are not shares of Registrable Securities, the number of shares of Registrable Securities requested to be included that in the opinion of such underwriters can be sold in an orderly manner within the price range of such offering, subject to the following order of priority: (A) first, the securities requested to be included therein by the Investors, pro rata among the holders thereof on the basis of the number of shares of Registrable Securities held by such holders at the time of the demand for such registration; (B) second, the securities requested to be included therein by the Company; (C) third, the Registrable Securities requested to be included in such registration by Lending Institutions, allocated pro rata among such holders on the basis of the number of Registrable Securities such holder requested to be included in such registration; (D) fourth, the Registrable Securities requested to be included in such registration by the Key Holders on a pro rata basis based on the number of Registrable Securities the Key Holders requested to be included in such registration; and (E) fifth, among persons not contractually entitled to registration rights under this Agreement *provided*, *however*, that the number of shares of Registrable Securities to be included by the Investors in such underwriting shall not be reduced unless all other securities are first entirely excluded from the underwriting.

(b) If the Investors initiating the Registration Request hereunder (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 Section 1.2(a) and the Company shall include such information in the written notice referred to in Section 1.2(a). The underwriter will be selected by the Company and shall be reasonably acceptable to a majority in interest of the Initiating Holders (based on Registrable Securities requested to be included in such registration), which approval shall not be unreasonably withheld or delayed; *provided*, *however*, that if the managing underwriter or underwriters shall be the firm or firms that managed the Company's most recently completed underwritten public offering of Common Stock, such firm or firms shall be deemed acceptable unless a majority in interest of the Initiating Holders (based on Registrable Securities requested to be included in such registration) shall object to such firm or firms for reasons related to the ability of such firm or firms to effectively manage the offering. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Section 1.4(e)) enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting.

(c) Notwithstanding the foregoing, if the Company shall furnish to Holders requesting a registration statement pursuant to this Section 1.2 a certificate signed by the Chief Executive Officer of the Company stating that in the good faith judgment of the Board of Directors of the Company (the "***Board of Directors***") it would be seriously detrimental to the Company and its stockholders for such registration statement to be filed and it is therefore essential to defer the filing of such registration statement, the Company shall have the right to defer taking action with respect to such filing for one period of not more than ninety (90) days after the date of such Registration Request during any twelve-month period.

(d) In addition, the Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to this Section 1.2:

(i) after the Company has effected two (2) Demand Registrations pursuant to this Section 1.2 and such registrations have been declared or ordered effective;

(ii) if the Company delivers notice to the Holders of Registrable Securities within thirty (30) days of any Registration Request of its intent to file a registration subject to Section 1.3 or Section 1.11 hereof within ninety (90) days of such Registration Request, provided that the Company is actively employing its best efforts to cause such registration statement to become effective;

(iii) within one hundred eighty (180) days after the effective date of a registration subject to Section 1.3 or Section 1.11 hereof; *provided*, *however*, that the Company may not utilize the rights in subsections (ii) and (iii) more than twice in any twelve-month period;

(iv) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Section 1.11 below.

(e) For purposes of this Section 1.2, a registration shall not be counted as "effected" if, as a result of an exercise of the underwriter's cutback provisions in Section 1.2(a)(iii), fewer than fifty percent (50%) of the total number of Registrable Securities that Investors have requested to be included in such registration statement are actually included.

1.3 ***Company Registration***.

(a) If, but without any obligation to do so, the Company proposes to register (including for this purpose a registration initiated by the Company for itself or for the Holders or stockholders other than the Holders) any of its stock or other securities under the Securities Act in connection with the public offering of such securities solely for cash (other than a registration relating solely to employee benefit plans, or a registration relating solely to a SEC Rule 145 transaction, or a registration on any registration form which does not permit secondary sales (an "***Excluded Registration***")) the Company shall, at such time, promptly give each Holder written notice of such registration. Upon the written request of each Holder given within fifteen (15) days after delivery of such notice by the Company, the Company shall, subject to the provisions of Section 1.8, cause to be registered under the Securities Act all of the Registrable Securities that each such Holder has requested to be registered.

(b) If a registration subject to Subsection (a) above relates to an underwritten public offering of equity securities and the managing underwriters advise the Company that in their opinion the number of securities requested to be included in such registration exceeds the number that can be sold in an orderly manner in such offering within a price range acceptable to the Holders initially requesting such registration, the Company will include in such registration (i) first, the securities requested to be included therein by the Company if the Company has initiated the registration; (ii) second, the Registrable Securities requested to be included in such registration by Investors, allocated pro rata among the holders thereof on the basis of the number of shares of Registrable Securities held by each such holder; (iii) third, the Registrable Securities requested to be included in such registration by Lending Institutions, allocated pro rata among such holders on the basis of the number of Registrable Securities such holder requested to be included in such registration; (iv) fourth, the Key Holder Registrable Securities requested to be included in such registration by Key Holders, allocated pro rata among such holders on the basis of the number of Key Holder Registrable Securities such holder requested to be included in such registration; and (v) fifth, among persons not contractually entitled to registration rights under this Agreement. Notwithstanding the foregoing, the amount of securities of the Investors included in the offering shall not be reduced below thirty percent (30%) of

the total amount of securities included in such offering. Notwithstanding the preceding sentence, in the event of a Qualified Public Offering by the Company, the number of selling Holders included in the offering may be reduced to zero (as long as no Key Holders or other selling stockholders are permitted to participate in such offering). In connection with any offering involving an underwriting of shares of the Company's capital stock, the Company shall not be required 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 it (or by other persons entitled to select the underwriters).

1.4 ***Obligations of the Company.*** Whenever required under this Article I 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 its best 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 ninety (90) days or until the distribution contemplated in the Registration Statement has been completed; *provided*, *however*, that such ninety (90) day period shall be extended for a period of time equal to the period the Holder refrains from selling any securities included in such registration at the request of an underwriter of Common Stock (or other securities) of the Company.

(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 Securities Act with respect to the disposition of all securities covered by such registration statement.

(c) Furnish to the Holders such numbers of copies of a prospectus, including a preliminary prospectus, in conformity with the requirements of the Securities Act, and such other documents as they may reasonably request in order to facilitate the disposition of Registrable Securities owned by them.

(d) Use its best 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*, *however*, 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 underwriters of such offering. Each Holder participating in such underwriting shall also enter into and perform its obligations under such an agreement.

(f) Notify each Holder of Registrable Securities covered by such registration statement at any time when a prospectus relating thereto is required to be delivered under the Securities 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.

(g) Cause all such Registrable Securities registered pursuant to this Agreement to be listed on each securities exchange on which similar securities issued by the Company are then listed.

(h) Provide a transfer agent and registrar for all Registrable Securities registered pursuant hereunder and a CUSIP number for all such Registrable Securities not later than the effective date of such registration.

(i) Use its best efforts to cause to be furnished, at the request of at least a majority of the Holders participating in the registration, on the date that such Registrable Securities are delivered to the underwriters for sale, if such securities are being sold through underwriters, or, if such securities are not being sold through underwriters, on the date that the registration statement with respect to such securities becomes effective, (i) an opinion, dated such date, of the counsel representing the Company for purposes of such registration, in form and substance as is customarily given to underwriters in an underwritten public offering, addressed to the underwriters, if any, and (ii) a letter dated such date, from the independent certified public accountants of the Company, in form and substance as is customarily given by independent certified public accountants to underwriters in connection with an underwritten public offering, addressed to the underwriters, if any.

1.5 ***Furnish Information***.

(a) It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Article I 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 required to effect the registration of such Holder's Registrable Securities.

(b) The Company shall have no obligation with respect to any registration requested pursuant to Section 1.2 or Section 1.11 or if, due to the operation of Section 1.5(a), the number of shares or the anticipated aggregate offering price of the Registrable Securities to be included in the registration does not equal or exceed the anticipated aggregate offering price required to originally trigger the Company's obligation to initiate such registration as specified in Section 1.2 or Subsection 1.11(b)(2), whichever is applicable.

1.6 ***Expenses of Demand Registration***. All expenses other than underwriting discounts and commissions incurred in connection with registrations, filings or qualifications pursuant to Section 1.2, 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 not to exceed $25,000 shall be borne by the Company; *provided*, *however*, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 1.2 if the registration request is subsequently withdrawn on the written 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 on the number of Registrable Securities proposed to be registered by each such Holder) unless the Holders of a majority of the Registrable Securities agree to forfeit their right to one demand registration pursuant to Section 1.2; *provided further*, *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 the 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 full rights pursuant to Section 1.2.

1.7 ***Expenses of Company Registration***. The Company shall bear and pay all expenses incurred in connection with any registration, filing or qualification of Registrable Securities with respect to the registrations pursuant to Section 1.3 for each Holder (which right may be assigned as provided in Section 1.12), including (without limitation) all registration, filing, and qualification fees, printers and accounting fees relating or apportionable thereto and the reasonable fees and disbursements of one counsel for the selling Holders not to exceed $25,000, but excluding underwriting discounts and commissions relating to Registrable Securities.

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 Article I.

1.9 ***Indemnification***. In the event any Registrable Securities are included in a registration statement under this Article I:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each Holder, the partners, members, officers, directors, employees and agents of each Holder, any underwriter (as defined in the Securities Act) for such Holder and each person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any losses, claims, damages, or liabilities (joint or several) to which they may become subject under the Securities Act, the Exchange Act or other federal or state law, insofar as such losses, claims, damages, or liabilities (or actions in respect thereto) arise out of or are based upon any of the following statements, omissions or violations (each, a "***Violation***"): (i) any untrue statement or alleged untrue statement of a material fact contained in such registration statement, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto, (ii) the omission or alleged omission to state therein 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 Securities Act, the Exchange Act, any state securities law or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities law; and the Company will pay to each such Holder, underwriter or controlling person, as incurred, any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability, or action; *provided*, *however*, that the indemnity agreement contained in this Section 1.9(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, conditioned or delayed), 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 which occurs in reliance upon and in conformity with written information furnished to the Company by any such Holder, underwriter or controlling person expressly for use in connection with such registration.

(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 Securities Act, 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 Securities Act, the Exchange Act or other federal or state law,

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 the registrations statement in connection with such registration; and each such Holder will pay, as incurred, any legal or other expenses reasonably incurred by any person intended to be indemnified pursuant to this Section 1.9(b), in connection with investigating or defending any such loss, claim, damage, liability, or action; *provided*, *however*, that the indemnity agreement contained in this Section 1.9(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, conditioned or delayed); *provided further*, *however*, that in no event shall any indemnity under this Section 1.9(b) exceed the net proceeds from the offering received by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 1.9 of notice of the commencement of any action (including any governmental action), such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 1.9, 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 which may be represented without conflict by one counsel) shall have the right to retain one 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 materially prejudicial to its ability to defend such action, shall relieve such indemnifying party of any liability to the indemnified party under this Section 1.9 but the omission so to 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 1.9.

(d) If the indemnification provided for in this Section 1.9 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 therein, 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 of 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 in no event shall any contribution by a Holder under this Section 1.9(d) exceed the net proceeds from the offering received by such Holder. The relative fault of the indemnifying party and of 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 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 as to any Holder that is a party thereto.

(f) The obligations of the Company and Holders under this Section 1.9 shall survive the completion of any offering of Registrable Securities in a registration statement under this Article I, the termination of this Agreement, and otherwise. No indemnifying party, in the defense of any such claim or litigation, shall, except with the consent of each other indemnified party, consent to entry of any judgment or enter into any settlement that does not include as an unconditional term thereof the giving by the claimant or plaintiff to such indemnified party of a release from all liability in respect to such claim or litigation.

1.10 ***Reports Under Securities Exchange 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 90 days after the effective date of the first registration statement filed by the Company for the offering of its securities to the general public;

(b) take such action, including the voluntary registration of its Common Stock under Section 12 of the Exchange Act, as is necessary to enable the Holders to utilize Form S-3 for the sale of their Registrable Securities, such action to be taken as soon as practicable after the end of the fiscal year in which the first registration statement filed by the Company for the offering of its securities to the general public is declared effective;

(c) file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act; and

(d) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request from such Holder (i) a written statement by the Company that it has complied with the reporting requirements of Rule 144 (at any time after 90 days after the effective date of the first registration statement filed by the Company), the Securities Act and the Exchange 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 in availing any Holder of any rule or regulation of the SEC which permits the selling of any such securities without registration or pursuant to such form.

1.11 ***Form S-3 Registrations***. In case the Company shall receive a written request from any Holder or Holders of Registrable Securities 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 will:

(a) promptly give written notice of the proposed registration, and any related qualification or compliance, to all other Holders; and

(b) use its best efforts to, as soon as practicable, effect 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 Holder's or Holders' Registrable Securities as are specified in such request, together with all or such portion of the Registrable Securities of any other Holder or

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 1.11: (1) if Form S-3 is not available for such offering by the Holders; (2) if the Holders, together with the holders of any other securities of the Company entitled to inclusion in such Form S-3, propose to sell Registrable Securities at an aggregate price to the public of less than $1,000,000; (3) if the Company shall furnish to the Holders a certificate signed by the chief executive officer of the Company 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 Form S-3 registration to be effected at such time, in which event the Company shall have the right to defer the filing of the Form S-3 registration statement for a period of not more than thirty (30) days after receipt of the request of the Holder or Holders under this Section 1.11; *provided*, *however*, that the Company shall not utilize this right more than once in any twelve (12) month period; or (4) 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; and provided further that the Company shall not register any securities for its own account or that of any other stockholder during such thirty (30) day period other than an Excluded Registration.

(c) 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 Holders. All expenses incurred in connection with a registration requested pursuant to this Section 1.11, including, without limitation, all registration, filing, qualification, printer's and accounting fees and the reasonable fees and disbursements of counsel for the selling Holder or Holders not to exceed $25,000 and counsel for the Company, shall be borne by the Company. Registrations effected pursuant to this Section 1.11 shall not be counted as demands for registration or registrations effected pursuant to Sections 1.2 or Section 1.3, respectively.

(d) If the Holders initiating a registration pursuant to this Section 1.11 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 1.11 and the Company shall include such information in the written notice referred to in Section 1.11(a). The underwriter will be selected by the Company and shall be reasonably acceptable to a majority in interest of the Initiating Holders. In such event, the right of any Holder to include such Holder's 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 (together with the Company as provided in Section 1.4(e)) enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting. Notwithstanding any other provision of this Section 1.11, if the underwriter advises the Initiating Holders in writing that marketing factors require a limitation of the number of shares to be underwritten, then the Company shall so advise all Holders of Registrable Securities which would otherwise be underwritten pursuant hereto, and the number of shares of Registrable Securities that may be included in the underwriting shall be allocated (i) first, among all Investors requesting registration hereunder, including the Initiating Holders, in proportion (as nearly as practicable) to the number of shares of Registrable Securities of the Company held by such Investors at the time of such demand for registration, (ii) second, to Lending Institutions who have requested inclusion in such registration pursuant to Section 1.3 in

proportion to the Registrable Securities which such Lending Institutions request to be included in such registration, (iii) third, to Key Holders who have requested inclusion in such registration pursuant to Section 1.3 in proportion to the Key Holder Registrable Securities held by such Key Holders at the time of such demand for registration, and (iv) fourth, to the Company and any other persons entitled to inclusion in such registration; *provided*, *however*, that the number of shares of Registrable Securities to be included by the Investors in such underwriting shall not be reduced unless all other securities are first entirely excluded from the underwriting.

1.12 ***Assignment of Registration Rights***. The rights to cause the Company to register Registrable Securities pursuant to this Article I may be assigned (but only with all related obligations) by a Holder to a transferee or assignee of such securities that is (i) a partner, retired partner or affiliated fund of any Holder that is a partnership, (ii) any member or former member of any Holder that is a limited liability company, (iii) any family member or trust for the benefit of any individual Holder, or any estate planning vehicle of such Holder, or (iv) any transferee that holds or would hold greater than 100,000 shares of Preferred Stock (subject to appropriate adjustment for stock splits, stock dividends, combinations and other recapitalizations with respect to such shares); *provided* that: (a) 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; (b) 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 1.13 below, including the execution of an Adoption Agreement in the form attached hereto as Annex A; and (c) 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 Securities Act. For the purposes of determining the number of shares of Registrable Securities held by a transferee or assignee, the holdings of transferees and assignees of a partnership who are partners or retired partners of such partnership (including spouses and ancestors, lineal descendants and siblings of such partners or spouses who acquire Registrable Securities by gift, will or intestate succession) shall be aggregated together and with the partnership and the provisions of Section 4.9 below shall be applicable; *provided*, *however*, that all assignees and transferees who would not qualify individually for assignment of registration rights shall have a single attorney-in-fact for the purpose of exercising any rights, receiving notices or taking any action under this Article I.

1.13 ***"Market Stand-Off" Agreement***.

(a) In connection with the Company's IPO, the Holders and all subsequent holders of the Registrable Securities who derive their chain of ownership through a permitted transfer from a Holder (each an "Owner") shall not (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 securities of the Company, including (without limitation) shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock, held immediately before the effective date 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 any securities of the Company, including (without limitation) shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock, held immediately before the effective date of the registration statement for such offering, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of securities, in cash or otherwise without the prior written consent of the Company or its underwriters. Such

restriction (the "***Market Stand-Off***") shall be in effect for such period of time from and after the effective date of the final prospectus for such offering as may be requested by the Company or such underwriters. In no event, however, shall such period exceed one hundred eighty (180) days following the effective date of the registration statement (the "***Lock-Up Period***"), and the Market Stand-Off shall in no event be applicable to any underwritten public offering effected after the effective date of the Company's IPO. Notwithstanding the foregoing, to the extent required by applicable rules of the Financial Industry Regulatory Authority, if (y) during the period that begins on the date that is seventeen (17) days before the last day of the Lock-Up Period and ends on the last day of the Lock-Up Period, the Company issues an earnings release or material news or a material event relating to the Company occurs; or (z) prior to the expiration of the Lock-Up Period the Company announces that it will release earnings results during the sixteen (16) day period beginning on the last day of the Lock-Up Period, then the restrictions imposed herein shall continue to apply until the expiration of the date that is eighteen (18) days after the date on which the issuance of the earnings release or material news or material event occurs.

(b) Owner shall be subject to the Market Stand-Off provided and only if the executive officers and directors of the Company and all holders of at least 1% of the Company's voting securities (on an as-converted basis) are also subject to similar restrictions.

(c) Any new, substituted or additional securities which are by reason of any recapitalization or reorganization distributed with respect to the Registrable Securities shall be immediately subject to the Market Stand-Off, to the same extent the Registrable Securities are at such time covered by such provisions.

(d) In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to the equity securities of the Company (or any security convertible into or exercisable for the same) held by each Holder (and the shares or securities of every other person subject to the foregoing restriction) until the end of such period. Each Holder agrees to execute a market stand-off agreement with the underwriters in customary form consistent with the provisions of this Section 1.13.

(e) Any discretionary waiver or termination of the restrictions contained in this Section 1.13 by the Company or the underwriters shall apply pro rata to all Holders subject to such restrictions, based on the number of shares subject to such restrictions, except that, notwithstanding the foregoing, the Company and the underwriters may, in their sole discretion, waive or terminate such restrictions with respect to 250,000 shares of Common Stock (subject to appropriate adjustment for stock splits, stock dividends, combinations and other recapitalizations with respect to such shares).

(f) The restrictions in this Section 1.13 shall not apply to transfers to affiliates of Holders, any offering of securities of the Company other than the IPO, purchases of Common Stock in the Company's IPO, purchases made in the open market following the completion of any offering covered by this Section 1.13, or, as to each Holder, to any resale public offerings in which such Holder is not selling shares of Common Stock for its own account.

(g) Notwithstanding the foregoing, the obligations described in this Section 1.13 shall not apply (i) to a registration relating solely to employee benefit plans on Form S-1, Form S-8 or similar forms which may be promulgated in the future, or (ii) a registration relating solely to an SEC Rule 145 transaction on Form S-4 or similar form which may be promulgated in the future.

1.14 ***Limitations on Subsequent Registration Rights***. From and after the date of this Agreement, the Company shall not, without the prior written consent of Holder(s) of at least a majority of the then outstanding Registrable Securities, enter into any agreement with any holder or prospective holder of any securities of the Company (a) giving such holder or prospective holder any registration rights the terms of which are more favorable in any material respect than or *pari passu* with the registration rights granted to the Holders hereunder or (b) that requires the Company to effect a registration earlier than the date on which Holders can first require registration under Section 1.2.

1.15 ***Termination of Registration Rights***.

(a) No Holder shall be entitled to exercise any right provided for in this Article I after five (5) years following the consummation of a Qualified Public Offering.

(b) In addition, the right of any Holder to request registration or inclusion in any registration pursuant to this Article I shall terminate on such date after the closing of the first Company-initiated registered public offering of Common Stock of the Company at which the Company is subject to the reporting requirements of the Exchange Act and as all shares of Registrable Securities held or entitled to be held upon conversion by such Holder may be sold under Rule 144 during any 90-day period.

ARTICLE II
COVENANTS OF THE COMPANY

2.1 ***Delivery of Financial Information***. The Company shall deliver (or make available through appropriate electronic means): to each Investor holding at least 100,000 shares of Preferred Stock (subject to appropriate adjustment for stock splits, stock dividends, stock combinations and the like) (each, a "***Major Investor***"), within one hundred twenty (120) days after the end of each fiscal year of the Company, a consolidated balance sheet of the Company and a consolidated statement of stockholders' equity as of the end of such year, and a consolidated statement of operations and a consolidated 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***"), and audited and certified by an independent public accounting firm of recognized standing selected by the Company;

(a) to each Major Investor, within forty-five (45) calendar days after the end of each of the first three (3) quarters of each fiscal year of the Company, unaudited consolidated balance sheets of the Company and its subsidiaries, if any, as of the end of such quarter, and unaudited consolidated statements of operations and consolidated statements of cash flows of the Company and its subsidiaries, if any, for such quarter prepared in accordance with GAAP, all in reasonable detail with comparisons of the financial results against the Company's budget for that financial period and the Company's financial results for the corresponding period of the previous year;

(b) to each Major Investor, as soon as practicable, but in any event within thirty (30) days prior to the beginning of each fiscal year, a copy of the Company's annual operating plan for such fiscal year; and

(c) to each Major Investor, such other information relating to the financial condition, business, prospects or corporate affairs of the Company as an Investor may from time to time reasonably request; provided, however, that the Company shall not be obligated under this Section 2.1(c) to provide information which it reasonably considers to be a trade secret or similar confidential information.

(d) Notwithstanding the foregoing, with the approval of the majority of the Preferred Directors, the requirement for the Company to have audited financial statements may be deferred. All such financial statements will contain a certification by the CEO, President or chief financial officer of the Company that such financial statements fairly represent in all material respects the financial condition, results of operations and cash flows of the Company as of the dates, and for the periods presented, therein.

2.2 ***Inspection***. The Company shall permit each Major Investor, at such 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 and during normal business hours as may be requested by such Investor; *provided*, *however*, that the Company shall not be obligated pursuant to this Section 2.2 to provide access to any information which it reasonably considers to be a trade secret or similar confidential information or the disclosure of which would adversely affect the attorney-client privilege. The Company shall not be required to disclose details of contracts with or work performed for specific customers and other business partners where to do so would violate confidentiality obligations to those parties. Investors may exercise their rights under this Section 2.2 only for purposes reasonably related to their interests under this Agreement and related agreements.

2.3 ***Proprietary Information and Inventions Assignment Agreement***. The Company will cause each officer and person now or hereafter employed by it or any subsidiary with access to confidential information to enter into a proprietary information and inventions assignment agreement in the form approved by the Investors' counsel, which agreement shall contain covenants of non-competition and non-solicitation of employees and customers during and for a one-year period following the termination of such employment for any reason. The Company will cause each consultant now or hereafter engaged by it or any subsidiary with access to confidential information to enter into an agreement containing provisions protecting the confidentiality of the Company's confidential information and providing for the assignment to the Company of all inventions and intellectual property developed by such consultant pursuant to such engagement.

2.4 ***Market Stand-Off Agreements***. The Company shall cause each current and future stockholder of the Company to enter into a market stand-off agreement substantially the same as Section 1.13.

2.5 ***Employee and Other Stock Arrangements***. Each acquisition of any shares of the Company's capital stock or any option or right to acquire any shares of the Company's capital stock by an employee, consultant, officer or director of the Company will be conditioned upon the execution and delivery by the Company and such employee, consultant, officer or director of an agreement substantially in the form approved by the Board of Directors. Unless otherwise determined by the Board of Directors, any such option or right to acquire shares of the Company's capital stock shall vest at the rate of twenty-five percent (25%) of the shares granted after one year from the date of grant, with the remaining seventy-five percent (75%) to vest monthly over the next three (3) years. Unless otherwise determined by the Company's Board of Directors, any stock sold shall be subject to the Company's right to repurchase such stock at its original purchase price and such stock shall vest on the same schedule as set forth in the preceding sentence.

2.6 ***Liability Insurance***. The Company shall use its best efforts to cause to be maintained general liability insurance from financially sound and reputable insurers in amounts and on terms customary for similarly situated companies, except as otherwise decided in accordance with the policies adopted by the Board of Directors. Such policy shall name the Company as loss payee and shall not be cancelable by the Company without prior approval of the Board of Directors.

2.7 ***Key Person Insurance***. The Company will use commercially reasonable efforts to cause to be maintained in full force and effect, term life insurance on the lives of each of the then-serving Chief Executive Officer, Chief Financial Officer, Chief Operating Officer and Chief Scientific Officer, naming the Company as beneficiary, in an amount and on terms approved by the Board.

2.8 ***Reserved***.

2.9 ***Confidentiality and Non-Disclosure***.

(a) Each Investor acknowledges that the information received by it from the Company pursuant to this Agreement or otherwise (the "***Information***") is confidential and that it will only use such Information in its evaluation of the decisions it faces by virtue of being a stockholder of the Company. Each Investor agrees that in any event, it shall not use such Information in violation of the Exchange Act. Each Investor may include summary financial information concerning the Company and general statements concerning the nature and progress of the Company's business in an Investor's reports to its limited partners and affiliates and provided that the Investors may provide information to potential purchasers of its securities that are subject to confidentiality obligations comparable to this Section 2.9(a). An investor shall be liable to the Company for any violation of this Section 2.9 by itself or any related person, including its representatives.

(b) Except as otherwise required by law, the Company may disclose to third parties the identity of an Investor as an investor in or interested party to the Company, but the Company shall not publicly disclose any information concerning such Investor's ownership amounts or percentages or the terms of any Investor's investment in the Company, other than to prospective investors (and the Company's stockholders to the extent necessary or appropriate), prospective acquirors who are under a duty of confidentiality, governmental agencies and the like, without the prior written consent of such Investor, which consent shall be at that Investor's sole discretion.

(c) The Company shall enter into Indemnification Agreements (in a form reasonably acceptable to the Company's Board of Directors) with the directors and executive officers of the Company. The Company will indemnify the Board of Directors to the broadest extent permitted by applicable law.

(d) In the event of a change of control of the Company, proper provision shall be made so that the successors and assigns of the Company assume the obligations of the Company with respect to indemnification of members of the Board of Directors as in effect immediately prior to such transaction, whether in the Company's Bylaws, Certificate of Incorporation, or elsewhere, as the case may be, and, unless otherwise affirmatively determined by the Board of Directors, for the purchase of "tail" D&O insurance coverage.

2.10 ***Indemnification Agreements***.

(a) The Company shall enter into Indemnification Agreements (in a form reasonably acceptable to the Company's Board of Directors) with the directors and executive officers of the Company. The Company will indemnify the Board of Directors to the broadest extent permitted by applicable law.

(b) In the event of a change of control of the Company, proper provision shall be made so that the successors and assigns of the Company assume the obligations of the Company with respect to indemnification of members of the Board of Directors as in effect immediately prior to such transaction, whether in the Company's Bylaws, Certificate of Incorporation, or elsewhere, as the case may be, and, unless otherwise affirmatively determined by the Board of Directors, for the purchase of "tail" D&O insurance coverage.

2.11 ***Right to Conduct Activities***. The Company hereby agrees and acknowledges that the Funds (as defined below) invest in numerous portfolio companies, some of which may be deemed competitive with the Company's business (as currently conducted or as currently propose to be conducted). The Company hereby agrees that, to the extent permitted under applicable law, such Funds shall not be liable to the Company for any claim arising out of, or based upon, (i) the investment by such Funds in any entity competitive with the Company, or (ii) actions taken by any partner, officer or other representative of such Funds to assist any such competitive company, whether or not such action was taken as a member of the board of directors of such competitive company or otherwise, and whether or not such action has a detrimental effect on the Company; *provided*, *however*, that the foregoing shall not relieve (x) any of the Funds from liability associated with the unauthorized disclosure of the Company's confidential information obtained pursuant to this Agreement, or (y) any director or officer of the Company from any liability associated with his or her fiduciary duties to the Company. For the purposes of this Section 2.11, "***Funds***" means Deerfield Private Design Fund III, L.P., Deerfield Special Situations Fund, L.P., Palmetto Partners 2014, LP, Palmetto Partners 2015, LP, Redmile Private Investments II, LP, and Sabby Healthcare Master Fund, Ltd., together with their respective affiliates.

2.12 ***Termination of Covenants***. As set forth below, certain covenants shall terminate upon the earliest to occur of (i) the time at which the sale of securities pursuant to a Qualified Public Offering is consummated, with respect to Sections 2.1, 2.2 and 2.4; (ii) the time at which the Company first becomes subject to the periodic reporting requirements of Sections 3 or 15(d) of the Exchange Act, with respect to Sections 2.1 and 2.2; or (iii) upon (A) the acquisition of the Company by another entity by means of any transaction or series of related transactions (including, without limitation, any stock acquisition, reorganization, merger or consolidation) unless the Company's stockholders of record as constituted immediately prior to such acquisition or sale will, immediately after such acquisition or sale (by virtue of securities issued as consideration for the Company's acquisition or sale or otherwise) hold at least a majority of the voting power of the surviving or acquiring entity, or its direct or indirect parent entity (except that the sale by the Company of shares of its capital stock to investors in bona fide equity financing transactions, or in a Qualified Public Offering, shall not be deemed a Liquidation Event for this purpose), with respect to Sections 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, and 2.11 and (B) a sale, exclusive license or other disposition of all or substantially all of the assets of the Company, including a sale, exclusive license or other disposition of all or substantially all of the assets of the Company's subsidiaries, if such assets constitute substantially all of the assets of the Company and such subsidiaries taken as a whole, with respect to Sections 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, and 2.11, or (C) the dissolution of the Company with respect to all such covenants set forth in this Article II other than Section 2.9. In addition, the covenants in Sections 2.1 and 2.2 will terminate with respect to any Investor that is or was an employee or consultant of the Company if the Board of Directors determines in good faith that such Investor has entered into a business or employment relationship with a competitor of the Company.

ARTICLE III
FUTURE OFFERINGS

3.1 ***Preemptive Right***.

(a) ***Grant of Preemptive Right***. If the Company shall issue any equity securities, options therefor or securities convertible into or exercisable for equity securities (each an "***Equity Security***" and together, "***Equity Securities***"), each Investor shall be entitled to purchase the Pro-rata Portion (as defined below) of such Equity Securities to be issued; *provided*, *however*, that this contractual

preemptive right shall not apply to issuances of Equity Securities: (a) upon conversion of the Preferred Stock; (b) upon the exercise of the warrants or options outstanding as of the date hereof or the conversion of the shares of Preferred Stock issued pursuant to any such warrants; (c) pursuant to the conversion or exercise of convertible securities provided the issuance of the convertible securities was (i) approved by the Board of Directors; and (ii) subject to the preemptive rights granted herein; (d) to officers, directors or employees of, or consultants or other service providers to, the Company as compensation for services, pursuant to a stock option plan or an agreement approved by the Board of Directors (including the approval or consent of a majority of the Preferred Directors then in office), (e) to banks, savings and loan associations, equipment lessors or other similar lending institutions in connection with such entities providing working capital credit facilities or equipment financing to the Company pursuant to a plan or arrangement approved by the Board of Directors (including the approval or consent of a majority of the Preferred Directors then in office); (f) as a result of a stock split or dividend or distribution on Common Stock, Preferred Stock or to all stockholders of the Company generally, and as a result of which appropriate adjustment is made to the conversion price of the Preferred Stock; (g) approved by the Board of Directors (including the approval or consent of a majority of the Preferred Directors then in office) in connection with bona fide business or technology acquisitions (or licenses) of, or by, the Company, whether by merger, consolidation, sale of assets, sale or exchange of stock, reorganization, or otherwise; (h) in, or after a Qualified Public Offering; (i) issued for charitable purposes and approved by the Board of Directors (including the approval or consent of a majority of the Preferred Directors then in office); or (j) pursuant to or in connection with technology license, development, OEM, marketing or other similar agreements or strategic partnerships approved by the Board of Directors (including the approval or consent of a majority of the Preferred Directors then in office); or (k) to commercial lessors in connection with lease transactions for the Company's offices pursuant to a plan or arrangement approved by the Board of Directors (including the approval or consent of a majority of the Preferred Directors then in office). For purposes of this preemptive right, an Investor's "Pro-rata Portion" will be a fraction, (x) the numerator of which is the number of shares of Common Stock held, or issuable upon conversion of the Preferred Stock held (assuming full conversion and exercise of all outstanding convertible or exercisable securities held by such Investor) by such Investor immediately prior to the issuance of the Equity Securities, and the (y) denominator of which is the total number of shares of Common Stock outstanding (assuming full conversion and exercise of all outstanding convertible or exercisable securities) immediately prior to the issuance of new securities (the "***Pro-rata Portion***").

(b) ***Over-Allotment Option***. Each Investor electing to purchase their full *Pro-rata* Portion of Equity Securities pursuant to Section 3.1(a) shall also be entitled to purchase (on a pro rata basis according to their relative holdings of Common Stock among each Investor electing to exercise such over-allotment option, assuming full conversion of shares of Preferred Stock and full exercise of convertible or equity securities then outstanding) Equity Securities that the other Investors decline to purchase.

(c) ***Procedures for Exercise***. The price of Equity Securities that each Investor is entitled to purchase under this Article III shall be the same price at which such Equity Securities are offered to others. Each Investor may exercise its preemptive rights under Section 3.1(a) to purchase Equity Securities by paying the purchase price therefor at the principal office of the Company within thirty (30) days after receipt of notice from the Company stating the number or amount of Equity Securities it intends to issue and the price and characteristics thereof, and each Investor may exercise any over-allotment option pursuant to Section 3.1(b), with respect to shares which other Investors elect not to purchase, in the same manner provided above within ten (10) days after receiving notice from

the Company of such over-allotment shares, which shall be delivered within five (5) days after the expiration of such initial thirty (30) day period. Each Investor shall pay such purchase price in cash, check, cancellation of indebtedness or wire transfer of immediately available funds or any combination of the foregoing. As promptly as practicable on or after the purchase date, the Company shall issue and deliver at its principal office a certificate or certificates for the number of full shares or amount, whichever is applicable, of Equity Securities.

(d) ***Assignability of Preemptive Rights***. The preemptive rights pursuant to this Section 3.1 may only be assigned by an Investor to a transferee or assignee to whom or which the rights to cause the Company to register Registrable Securities are transferable or assignable pursuant to Article I hereof.

(e) ***Preemptive Rights Waiver***. Each Existing Investor hereby (i) consents to the Company issuing shares of its Series C Preferred Stock pursuant to the Purchase Agreement, as the same may be amended from time to time, (ii) irrevocably waives any and all preemptive rights, rights of first offer, notice rights or other similar rights under the Prior Agreement to purchase any portion of the Company's Series C Preferred Stock, including any of the Company's Common Stock issued upon conversion thereof and (iii) acknowledges that such Existing Investor has received adequate notice of the Company's intention to issue shares of its Series C Preferred Stock. The waiver set forth in this Section 3.1(e) shall become effective and binding on all Existing Investors upon the execution of this Agreement by the Company and by Existing Investors holding at least two-thirds of the Company's Registrable Securities (as defined in the Prior Agreement).

3.2 ***Termination of Article III***. The covenants set forth in this Article III shall terminate upon the earliest to occur of (i) a Qualified Public Offering (as defined in the Certificate of Incorporation), (ii) the time at which the Company first becomes subject to the periodic reporting requirements of Sections 13 or 15(d) of the Exchange Act, or (iii) upon the closing of a Liquidation Event.

ARTICLE IV
MISCELLANEOUS

4.1 ***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 Registrable 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. For the avoidance of doubt, the rights and obligations of an Investor hereunder may be assigned to a transferee or assignee to whom or which the rights to cause the Company to register Registrable Securities are transferable or assignable pursuant to Article I hereof.

4.2 ***Governing Law***. This Agreement shall be governed by and construed under the laws of the State of Delaware, without giving effect to conflicts of laws principles.

4.3 ***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.

4.4 ***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.

4.5 ***Notices***. All notices and other communications hereunder shall be in writing and shall be deemed given if delivered personally or by commercial delivery service, or mailed by registered or certified mail (return receipt requested) or sent via facsimile (with confirmation of receipt) to the parties at the address for each party set forth herein (or at such other address for a party as shall be specified by like notice):

(i) If to the Company:

Xeris Pharmaceuticals, Inc.
3208 Red River St.
Suite 300
Austin, Texas 78705
Attn: Chief Executive Officer

with a copy (which shall not constitute notice) to:

Andrews Kurth LLP
111 Congress Avenue, Suite 1700
Austin, Texas 78701
Fax:(512)320-9292
Attn: J. Matthew Lyons

(ii) If to an Investor, at the addresses set forth below such Investor's name on Schedule A hereto.

(iii) If to the Key Holders at the respective address set forth below such Key Holder's name on Schedule B hereto.

Notice given by personal delivery, courier service or mail shall be effective upon actual receipt. Notice given by facsimile shall be confirmed by appropriate answer back and shall be effective upon actual receipt if received during the recipient's normal business hours, or at the beginning of the recipient's next business day after receipt if not received during the recipient's normal business hours. All notices by facsimile shall be confirmed promptly after transmission in writing by certified mail or personal delivery. Any party may change any address to which notice is to be given to it by giving notice as provided above of such change of address.

An electronic communication ("***Electronic Notice***") shall be deemed written notice for purposes of this Section 4.5 if sent with return receipt requested to the electronic mail address specified by the receiving party in a signed writing in a nonelectronic form. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives verification of receipt by the receiving party. Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("***Nonelectronic Notice***") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

Each Investor and each Key Holder generally consents to the delivery of any stockholder notice pursuant to the Delaware General Corporation Law (the "***DGCL***"), as amended or superseded from time to time, by electronic transmission pursuant to Section 232 of

the DGCL at the electronic mail address or the facsimile number set forth below such Investor or Key Holder's name on the applicable Schedules hereto, as updated from time to time by notice to the company, or as set forth in the books of the Company. To the extent that any notice given via electronic transmission is returned or undeliverable for any reason, the foregoing consent shall be deemed to have been revoked until a new or corrected electronic mail address has been provided.

4.6 ***Amendments and Waivers***. Any term of this Agreement 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 Investors holding at least two-thirds of the Preferred Stock then held by all Investors; *provided*, *however*, that in the event such amendment or waiver adversely affects the rights and/or obligations of the Key Holders under Article I of this Agreement in a different manner than all other Holders, such amendment or waiver shall also require the written consent of the holders of at least a majority of the Common Stock then held by all of the Key Holders, except that the grant of subsequent registration rights that are more favorable than or pari passu with the Key Holders' rights shall not require their consent; *provided*, *further* that Holders purchasing shares of Series C Preferred Stock in a Closing after the Initial Closing (each as defined in the Purchase Agreement) may become parties to this Agreement, by executing a counterpart of this Agreement without any amendment of this Agreement pursuant to this paragraph or any consent or approval of any other Holder. Notwithstanding the foregoing, (i) for so long as Deerfield Private Design Fund III, L.P. and Deerfield Special Situations Fund, L.P. (together, "***Deerfield***") holds any shares of Preferred Stock, the definition of "Deerfield," Sections 1.13 and 3.1, solely as they relate to Deerfield and its Affiliates, and this sentence of Section 4.6 of this Agreement may not be amended, waived or discharged to reduce or terminate the rights of Deerfield or its Affiliates hereunder and thereunder without Deerfield's prior written consent and (ii) a Lending Institution may become a party to this Agreement as the holder of Registrable Securities by executing a counterpart signature page to this Agreement, and such addition of a Lending Institution in such capacity shall not be deemed to constitute an amendment hereof. An amendment to this Agreement shall not require the approval of such Lending Institution. Any amendment or waiver effected in accordance with this Section 4.6 shall be binding upon each holder of any Registrable Securities then outstanding, each future holder of all such Registrable Securities and the Company.

4.7 ***Additional Holders***. Upon the grant or award of Common Stock or options to purchase Common Stock on or after the date hereof under any equity incentive plan, restricted stock plan or other arrangement of the Company (collectively, the "***Plans***"), to any employee or consultant of the Company who, after such grant or award, would hold Common Stock and/or options to purchase Common Stock equal to or in excess of one percent (1%) of the Company's capital stock on a fully-diluted as-converted to Common Stock basis (assuming the conversion of all outstanding Preferred Stock to Common Stock and assuming the exercise of all then outstanding options and warrants to purchase shares of Common Stock) (the "***Key Holder Threshold***"), such employee or consultant may become a "Key Holder" under this Agreement upon the execution and delivery of an Adoption Agreement by such employee or consultant (subject to the consent of the Company), and the addition of such employee or consultant to Schedule B shall not be deemed an amendment of this Agreement. The Company may update Schedule B from time to time to remove any Key Holder who holds Common Stock and/or options to purchase Common Stock less than the Key Holder Threshold or who is no longer employed with the Company, and such removed Key Holder shall no longer have the rights or obligations of a Key Holder hereunder.

4.8 ***Severability***. If one or more provisions of this Agreement are held to be unenforceable under applicable law, such provision shall be excluded from this Agreement and the balance of the Agreement shall be interpreted as if such provision were so excluded and shall be enforceable in accordance with its terms.

4.9 ***Aggregation of Stock***. All shares of Registrable Securities or other Securities of the Company held or acquired by affiliated entities or persons shall be aggregated together for the purpose of determining the availability of any rights under this Agreement; *provided*, that the Preferred Stock (and Common Stock issued or issuable upon conversion thereof) held by John Kinzell, Yash Sabharwal, Steve Prestrelski, Phillip Johnson and Douglas Baum (or their transferees or assignees), shall not be aggregated with other Registrable Securities (the "***Key Holder Shares***") held by them (or their transferees or assignees), such that they shall be deemed Investors hereunder with respect to their (or their transferees' or assignees') shares of Preferred Stock (and Common Stock issued or issuable upon conversion thereof) and Key Holders hereunder with respect to their (or their transferees' or assignees') Key Holder Shares. For the purposes of determining the availability of any rights under this Agreement, the holdings of transferees and assignees of an individual, a partnership or trust who are spouses, ancestors, lineal descendants or siblings of such individual, partners or retired partners of such partnership or partnerships affiliated with such transferring or assigning partnership (including spouses and ancestors, lineal descendants and siblings of such partners or spouses who acquire Common Stock by gift, will or intestate succession) or grantors of such trust shall be aggregated together with the individual or partnership, as the case may be, for the purpose of exercising any rights or taking any action under this Agreement. Notwithstanding the foregoing, in the event that the holders of a particular series of Preferred Stock are entitled to exercise a right hereunder, the holders of that particular series of Preferred Stock who are a party to this Agreement shall not be permitted to aggregate any other shares of stock other than shares of that particular series of Preferred Stock for the purposes of determining the availability of such right under this Agreement.

4.10 ***Entire Agreement***. This Agreement (including the Schedules hereto, if any) constitutes the full and entire understanding and agreement between the parties with regard to the subject matter hereof and thereof and supersedes any and all prior agreements relating to the subject matter hereof.

4.11 ***Attorneys' Fees***. In the event of any dispute involving the terms hereof, the prevailing party shall be entitled to collect legal fees and expenses from the other party to the dispute.

4.12 ***Joint Product***. This Agreement is the joint product of the Company and the other parties hereto and each provision hereof and thereof has been subject to the mutual consultation, negotiation and agreement of the Company and the other parties hereto and shall not be construed against any party hereto.

4.13 ***Amendment and Restatement of Prior Agreement***. Pursuant to Section 4.6 of the Prior Agreement, the Existing Investors constituting the Requisite Consent hereby amend and restate the Prior Agreement on behalf of all Investors (as that term is defined in the Prior Agreement) and replace the Prior Agreement on behalf of all Investors (as that term is defined in the Prior Agreement) with this Agreement, and any Investor (as that term is defined in the Prior Agreement) who does not sign this Agreement shall be bound by the terms and conditions of this Agreement pursuant to Section 4.6 of the Prior Agreement as if that Investor (as that term is defined in the Prior Agreement) had signed this Agreement.

[Signature pages follow]

IN WITNESS WHEREOF, the undersigned party has executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

COMPANY:

XERIS PHARMACEUTICALS, INC.

By: /s/ Douglas Baum
Name: Douglas Baum
Title: President & CEO

KEY HOLDERS

By: /s/ John Kinzell
John Kinzell

By: _____
Yash Sabharwal

By: _____
Steven Prestrelski

By: _____
Douglas Baum

By: _____
Phillip Johnson

THE SABHARWAL 2015 FAMILY TRUST

By: _____
Name: _____
Title: _____

KEY HOLDERS

By: _____
John Kinzell

By: /s/ Yash Sabharwal
Yash Sabharwal

By: _____
Steven Prestrelski

By: _____
Douglas Baum

By: _____
Phillip Johnson

THE SABHARWAL 2015 FAMILY TRUST

By: _____
Name: _____
Title: _____

KEY HOLDERS

By: _____
John Kinzell

By: _____
Yash Sabharwal

By: /s/ Steven Prestrelski
Steven Prestrelski

By: _____
Douglas Baum

By: _____
Phillip Johnson

THE SABHARWAL 2015 FAMILY TRUST

By: _____
Name: _____
Title: _____

KEY HOLDERS

By: _____
John Kinzell

By: _____
Yash Sabharwal

By: _____
Steven Prestrelski

By: /s/ Douglas Baum
Douglas Baum

By: _____
Phillip Johnson

THE SABHARWAL 2015 FAMILY TRUST

By: _____
Name: _____
Title: _____

KEY HOLDERS

By: _____
John Kinzell

By: _____
Yash Sabharwal

By: _____
Steven Prestrelski

By: _____
Douglas Baum

By: /s/ Phillip Johnson
Phillip Johnson

THE SABHARWAL 2015 FAMILY TRUST

By: _____
Name: _____
Title: _____

KEY HOLDERS

By: _____
John Kinzell

By: _____
Yash Sabharwal

By: _____
Steven Prestrelski

By: _____
Douglas Baum

By: _____
Phillip Johnson

THE SABHARWAL 2015 FAMILY TRUST

By: /s/ Jessica Caplan Sabharwal
Name: Jessica Caplan Sabharwal
Title: trustee

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

AB Xeris Investments, LLC
(Print Name of Entity)
DocuSigned by:

By: /s/ John Arizpe
1EB557F242EA452…
Name: John Arizpe
Title: Manager

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Andrew Kurtzig Trust

(Print Name of Entity)

DocuSigned by:

By: /s/ Andrew Kurtzig
7C5E9900632940E…

Name: Andrew Kurtzig

Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Ann Kinzell
(Signature)

Ann Kinzell
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Bahman Sharifian
(Signature)

Bahman Sharifian
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Bernhard Hampl
(Signature)

Bernhard Hampl
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Brisbin Family 2005 Trust
(Print Name of Entity)

By: /s/ Shane Brisbin
Name: Shane Brisbin
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

C & P Bouligny Revocable Trust
(Print Name of Entity)

By: /s/ Patricia Bouligny
Name: Patricia Bouligny
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Calden Holdings LP
(Print Name of Entity)

By: /s/ Roger Harden
Name: Roger Harden
Title: President

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Cedarledge Enterprises LLC
(Print Name of Entity)

By: /s/ Christopher Codeanne
Name: Christopher Codeanne
Title: Member

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Craig R. Dubois MD
(Signature)

Craig R. Dubois MD
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

DANA PARTNERSHIP LLP
(Print Name of Entity)

By: /s/ Arun Agarwal
Name: Arun Agarwal
Title: MANAGING AGENT

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ David and Tripti Burt
(Signature)

David and Tripti Burt
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Deepak and Jackie Sharma
(Signature)

Deepak and Jackie Sharma
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Deepak K. Sharma
(Signature)

Deepak K. Sharma
(Print Name of Individual)

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated First Refusal and Co-Sale Agreement as of the date first set forth above.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Deepak K. Sharma
(Signature)

Deepak K. Sharma
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

DEERFIELD SPECIAL SITUATIONS FUND, L.P.

By: Deerfield Mgmt, L.P., General Partner

By: J.E. Flynn Capital, LLC, General Partner

By: /s/ David J. Clark
Name: David J. Clark
Title: Authorized Signatory

DEERFIELD PRIVATE DESIGN FUND III, L.P.

By: Deerfield Mgmt III, L.P., General Partner

By: J.E. Flynn Capital III, LLC, General Partner

By: /s/ David J. Clark
Name: David J. Clark
Title: Authorized Signatory

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS:

[signature block for entities]

DiPerna Family Trust
(Print Name of Entity)

By: /s/ Paul Diperna
Name: Paul Diperna
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Douglas Baum
(Signature)

Douglas Baum
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Dr. Bikramjit Singh
(Signature)

Dr. Bikramjit Singh
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Dr. Thayyullathil and Dhanalakshmi Bharathan
(Signature)

Dr. Thayyullathil and Dhanalakshmi Bharathan
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Eduardo Mestre
(Signature)

Eduardo Mestre
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Equity Trust Company, Custodian FBO Roger Harden IRA
(Print Name of Entity)

By: /s/ Roger Harden
Name: Roger Harden
Title: Self

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Evercore Wealth Management LLC as nominee for HSBC Trust Company (Delaware), N.A., Trustee of the Ketty Maisonrouge 2006 Trust

(Print Name of Entity)

By: /s/ Kathleen H. Mulvany

Name: Kathleen H. Mulvany

Title: Managing Director

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Evercore Wealth Management LLC as nominee for HSBC Trust Company (Delaware), N.A., Trustee of the Maisonrouge Descendants' Trust

(Print Name of Entity)

By: /s/ Kathleen H. Mulvany

Name: Kathleen H. Mulvany

Title: Managing Director

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Evercore Wealth Management LLC as nominee for HSBC Trust Company (Delaware), N.A., Trustee of the Maisonrouge Family Trust

(Print Name of Entity)

By: /s/ Kathleen H. Mulvany

Name: Kathleen H. Mulvany

Title: Managing Director

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

FAB Long-Term Trust
(Print Name of Entity)

By: /s/ Flora A. Brewer
Name: Flora A. Brewer
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS:

FOGHORN FUND I, LP

By: Foghorn Fund GP, LLC, General Partner

By: /s/ Harris Brody
Name: Harris Brody
Title: Partner

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Gene Marshall Betts Revocable Trust DATED 12/18/2001
(Print Name of Entity)

By: /s/ Gene M. Betts
Name: Gene M. Betts
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

GHI, Ltd.
(Print Name of Entity)

By: /s/ Eric Rabbanian
Name: Eric Rabbanian
Title: Pres. of Corp Gen'l Partner of GHI, Ltd.

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ George Ackert
(Signature)

George Ackert
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Hugo E. Schaeffer, Jr. & Sally M. Schaeffer
(Signature)

Hugo E. Schaeffer, Jr. & Sally M. Schaeffer
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Hunter Shadburne
(Signature)

Hunter Shadburne
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

IAEBM, LLC
(Print Name of Entity)

By: /s/ Doug Baum
Name: Doug Baum
Title: Owner/Managing Member

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Jan M. Betts Irrevocable Trust of 2012
(Print Name of Entity)

By: /s/ Gene M. Betts
Name: Gene M. Betts
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Jan M. Betts Revocable Trust Dated 12-18-2001
(Print Name of Entity)

By: /s/ Jan Betts
Name: Jan Betts
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Jay Caplan
(Signature)

Jay Caplan
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Jeffrey C. Edman Trust Dated 10/27/03
(Print Name of Entity)

By: /s/ Jeffrey C. Edman
Name: Jeffrey C. Edman
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Jessica Collett
(Signature)

Jessica Collett
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

JJP Long-Term Trust
(Print Name of Entity)

By: /s/ John Paulos
Name: John Paulos
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ John Honts
(Signature)

John Honts
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ John Kinzell
(Signature)

John Kinzell
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

JS Diamond Capital LLC
(Print Name of Entity)

By: /s/ John Kastner
Name: John Kastner
Title: CFO

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ John Paulos
(Signature)

John Paulos
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Ken Shifrin
(Signature)

Ken Shifrin
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Kumar Trivedi
(Signature)

Kumar Trivedi
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Laurence Stewart
(Signature)

Laurence Stewart
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Leonard Samuels and Leah Kaplan-Samuels, jointly
(Signature)

Leonard Samuels and Leah Kaplan-Samuels, jointly
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Mark and Terri Friedman, Joint Tenants
(Signature)

Mark and Terri Friedman, Joint Tenants
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Matula Family, LP - Class 1
(Print Name of Entity)

By: /s/ Michael Matula
Name: Michael Matula
Title: Manager

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Melissa Foster
(Signature)

Melissa Foster
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

MH Investment Partners LLC
(Print Name of Entity)

By: /s/ Michael Hooley
Name: Michael Hooley
Title: Mgr

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Michael J. McGrath
(Signature)

Michael J. McGrath
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Michael Misikoff
(Signature)

Michael Misikoff
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Nandana and Chandu Bhakta
(Signature)

Nandana and Chandu Bhakta
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Navneet Puri
(Signature)

Navneet Puri
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Nishant Saxena
(Signature)

Nishant Saxena
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

P. Jagan Reddy, Roth IRA
(Print Name of Entity)

By: /s/ P. Jagan Reddy
Name: P. Jagan Reddy
Title:

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

PALMETTO PARTNERS 2014, LP

By: Palmetto Partners GP, LLC,
its general partner

By: /s/ Greg Watson
Name: Greg Watson
Title: Senior Vice President

PALMETTO PARTNERS 2015, LP

By: Palmetto Partners GP, LLC,
its general partner

By: /s/ Greg Watson
Name: Greg Watson
Title: Senior Vice President

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Patrick & Jamie Spellacy
(Signature)

Patrick & Jamie Spellacy
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Paulos Holdings, Ltd.
(Print Name of Entity)

By: /s/ John Paulos
Name: John Paulos
Title: V.P. AJG Management Inc., G.P.

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Phillip A. Sanger MD
(Signature)

Phillip A. Sanger MD
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Phillip Johnson
(Signature)

Phillip Johnson
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Qazi Fazal
(Signature)

Qazi Fazal
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Ram and Sudha Potti
(Signature)

Ram and Sudha Potti
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Ramdas and Purnima Nayak
(Signature)

Ramdas and Purnima Nayak
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Robb and Sandra Miller
(Signature)

Robb and Sandra Miller
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

REDMILE CAPITAL FUND, LP

By: /s/ Jeremy Green
Name: Jeremy Green
Title: Managing Member of the General Partner and the Investment Manager

REDMILE CAPITAL OFFSHORE FUND, LTD.

By: /s/ Jeremy Green
Name: Jeremy Green
Title: Managing Member of the Investment Manager

REDMILE CAPITAL OFFSHORE FUND II, LTD.

By: /s/ Jeremy Green
Name: Jeremy Green
Title: Managing Member of the Investment Manager

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

REDMILE SPECIAL OPPORTUNITIES FUND, LTD.

By: /s/ Jeremy Green
Name: Jeremy Green
Title: Managing Member of the Investment Manager

REDMILE PRIVATE INVESTMENTS II, LP

By: /s/ Jeremy Green
Name: Jeremy Green
Title: Managing Member of Investment Mngr./Mngt. Company (the Managing Member of the GP)

REDMILE BIOTECHNOLOGIES INVESTMENTS I AF, LP

By: /s/ Jeremy Green
Name: Jeremy Green
Title: Managing Member of the Investment Mngr./Mngt. Company (the Managing Member of the GP)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Robert and Donna Hollingsworth
(Signature)

Robert and Donna Hollingsworth
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS:

SABBY HEALTHCARE MASTER FUND, LTD.

By: Sabby Management, LLC as investment manager

By: /s/ Robert Grundstein
Name: Robert Grundstein
Title: COO and General Counsel

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Sean C. Guerin and Jennifer M Guerin
(Signature)

Sean C. Guerin and Jennifer M Guerin
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Shudan Zhang
(Signature)

Shudan Zhang
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Star Vista Capital, LLC
(Print Name of Entity)

By: /s/ Tom Rogers
Name: Tom Rogers
Title: manager

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Steven Prestrelski
(Signature)

Steven Prestrelski
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Thomas and Susan Nelms
(Signature)

Thomas and Susan Nelms
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Thomas E. Blaser
(Signature)

Thomas E. Blaser
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Timmins Living Trust
(Print Name of Entity)

By: /s/ Rick Timmins
Name: Rick Timmins
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Timothy Sullivan
(Signature)

Timothy Sullivan
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Tommy and Susan Nelms
(Signature)

Tommy and Susan Nelms
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Tracy Yeo and Steven J. Prestrelski
(Signature)

Tracy Yeo and Steven J. Prestrelski
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

URMEET KAUR & TIMOTHY MICHAEL ARCURI 2002 REV TR 11/20/02

(Print Name of Entity)

By: /s/ Timothy Arcuri

Name: Timothy Arcuri

Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Wild Basin Investments LLC
(Print Name of Entity)

By: /s/ Rosa L. McCormick
Name: Rosa L. McCormick
Title: President

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Will Hiltz
(Signature)

Will Hiltz
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ William Ritger
(Signature)

William Ritger
(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

Xiaohong Sun Living Trust
(Print Name of Entity)

By: /s/ Diana Sun
Name: Diana Sun
Title: Trustee

[signature block for individuals]

(Signature)

(Print Name of Individual)

IN WITNESS WHEREOF, the undersigned have executed this Second Amended and Restated Investors' Rights Agreement as of the date first above written.

INVESTORS

[signature block for entities]

_____
(Print Name of Entity)

By: _____
Name: _____
Title: _____

[signature block for individuals]

/s/ Yash Sabharwal
(Signature)

Yash Sabharwal
(Print Name of Individual)

ANNEX A

ADOPTION AGREEMENT

This Adoption Agreement ("***Adoption Agreement***") is executed by the undersigned (the "***Transferee***") pursuant to the terms of that certain Second Amended and Restated Investors' Rights Agreement dated as of December 31, 2015 (the "***Agreement***") by and among Xeris Pharmaceuticals, Inc. (the "***Company***") and certain of its Stockholders. Capitalized terms used but not defined herein shall have the respective meanings ascribed to such terms in the Agreement. By the execution of this Adoption Agreement, the Transferee agrees as follows:

1. Acknowledgement. Transferee acknowledges that Transferee is acquiring certain shares of the capital stock of the Company (the "***Stock***"), which shares are subject to the terms and conditions of the Agreement, including, but not limited to, the terms of the Market-Stand Off under Section 1.13 of the Agreement.

2. Agreement. As partial consideration for such transfer, Transferee (i) agrees that the Stock acquired by Transferee shall be bound by and subject to the terms of the Agreement, to the same extent and with the same rights and obligations as the person(s) from which such Stock is received and (ii) hereby agrees to become a party to the Agreement with the same force and effect as if Transferee were originally a party thereto.

3. Notice. Any notice required or permitted by the Agreement shall be given to Transferee at the address listed beside Transferee's signature below.

4. Joinder. The spouse of the undersigned Transferee, if applicable, executes this Adoption to acknowledge its fairness and that it is in such spouse's best interests and to bind to the terms of the Agreement such spouse's community interest, if any, in the Stock.

EXECUTED AND DATED this _____ day of _____, _____.

TRANSFEREE:

Title: _____
Address: _____
Fax: _____
Spouse: (if applicable):

Name: _____

Acknowledged and accepted on _____, _____.

XERIS PHARMACEUTICALS, INC.

By: _____
Name: _____
Title: _____

Exhibit 10.6

LEASE AGREEMENT

THIS LEASE AGREEMENT (this "**Lease**") is made this 29 day of September, 2017, between **ARE-SD REGION NO. 30, LLC**, a Delaware limited liability company ("**Landlord**"), and **XERIS PHARMACEUTICALS, INC**., a Delaware corporation ("**Tenant**").

Building: 3985 Sorrento Valley Boulevard, San Diego, California

Premises: That portion of the Project containing approximately 17,105 rentable square feet ("**rsf**"), as determined by Landlord, as shown on Exhibit A.

Project: The real property on which the Building in which the Premises are located, together with all improvements thereon and appurtenances thereto as described on Exhibit B.

Base Rent: $3.40 per rsf of the Premises per month, subject to adjustment pursuant to Section 4 hereof.

Rentable Area of Premises: 17,105 rsf

Rentable Area of Project: 56,035 rsf

Tenant's Share of Operating Expenses: 30.52% (subject to adjustment pursuant to Section 5 hereof)

Security Deposit: $58,157.00 **Target Commencement Date:** June 1, 2018

Rent Adjustment Percentage: 3%

Base Term: Beginning on the Commencement Date and ending, subject to the terms Section 40 hereof, 60 months from the first day of the first full month of the Term (as defined in Section 2) hereof. For clarity, if the Commencement Date occurs on the first day of a month, the Base Term shall be measured from that date. If the Commencement Date occurs on a day other than the first day of a month, the Base Term shall be measured from the first day of the following month.

Permitted Use: Research and development laboratory, related office and other related uses consistent with the character of the Project and otherwise in compliance with the provisions of Section 7 hereof.

Address for Rent Payment:
Alexandria Real Estate Equities, Inc.
Dept LA 23447
Pasadena, CA 91185-3447

Landlord's Notice Address:
385 E. Colorado Boulevard, Suite 299
Pasadena, CA 91101
Attention: Corporate Secretary

Tenant's Notice Address:
180 North LaSalle Street, Suite 1800 Chicago,
Illinois 60601 Attn: Steve Pieper

The following Exhibits and Addenda are attached hereto and incorporated herein by this reference:

☒ **EXHIBIT A** - PREMISES DESCRIPTION
☒ **EXHIBIT B** - DESCRIPTION OF PROJECT
☒ **EXHIBIT C** - WORK LETTER
☒ **EXHIBIT D** - COMMENCEMENT DATE
☒ **EXHIBIT E** - RULES AND REGULATIONS
☒ **EXHIBIT F** - TENANT'S PERSONAL PROPERTY
☒ **EXHIBIT G** - MAINTENANCE OBLIGATIONS
☒ **EXHIBIT H** - ASBESTOS DISCLOSURE

1. **Lease of Premises**. Upon and subject to all of the terms and conditions hereof, Landlord hereby leases the Premises to Tenant and Tenant hereby leases the Premises from Landlord. The portions of the Project which are for the non-exclusive use of tenants of the Project are collectively referred to herein as the "**Common Areas**." Landlord reserves the right to modify Common Areas, provided that such modifications do not materially adversely affect Tenant's access to (other than on a temporary basis) or use of the Premises for the Permitted Use or Tenant's parking rights hereunder (other than on a temporary basis). From and after the Commencement Date through the expiration of the Term, Tenant shall have access to the Building, the Premises and the parking areas serving the Project 24 hours a day, 7 days a week, except in the case of emergencies, as the result of Legal Requirements, the performance by Landlord of any installation, maintenance or repairs, or any other temporary interruptions, and otherwise subject to the terms of this Lease.

2. **Delivery; Acceptance of Premises; Commencement Date**. Landlord shall use reasonable efforts to deliver the Premises to Tenant on or before the Target Commencement Date, with Landlord's Work Substantially Completed ("**Delivery**" or "**Deliver**"). If Landlord fails to timely Deliver the Premises, Landlord shall not be liable to Tenant for any loss or damage resulting therefrom, and this Lease shall not be void or voidable except as provided herein. If Landlord does not Deliver the Premises within 90 days of the Target Commencement Date for any reason other than Force Majeure delays and Tenant Delays, this Lease may be terminated by Tenant by written notice to Landlord, and if so terminated by Tenant: (a) the Security Deposit, or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of this Lease), and any prepaid Base Rent shall be returned to Tenant within 30 days thereafter, and (b) neither Landlord nor Tenant shall have any further rights, duties or obligations under this Lease, except with respect to provisions which expressly survive termination of this Lease. As used herein, the terms "**Landlord's Work**," "**Tenant Delays**" and "**Substantially Completed**" shall have the meanings set forth for such terms in the Work Letter. If Tenant does not elect to void this Lease within 10 business days of the lapse of such 90 day period, such right to void this Lease shall be waived and this Lease shall remain in full force and effect.

The "**Commencement Date**" shall be the earlier of: (i) the date Landlord Delivers the Premises to Tenant; and (ii) the date Landlord could have Delivered the Premises but for Tenant Delays. Upon the request of either Landlord or Tenant, Landlord and Tenant shall execute and deliver a written acknowledgment of the Commencement Date, and the expiration date of the Term when such are established in the form of the "Acknowledgement of Commencement Date" attached to this Lease as **Exhibit D**; provided, however, the failure by either party to execute and deliver such acknowledgment shall not affect either party's rights hereunder. The "**Term**" of this Lease shall be the Base Term, as defined above on the first page of this Lease and, if elected by Tenant, the Extension Term which Tenant may elect pursuant to Section 39 hereof.

Except as set forth in the Work Letter or as otherwise expressly set forth in this Lease: (i) Tenant shall accept the Premises in their condition as of the Commencement Date; (ii) Landlord shall have no obligation for any defects in the Premises; and (iii) Tenant's taking possession of the Premises shall be conclusive evidence that Tenant accepts the Premises and that the Premises were in good condition at the time possession was taken.

For the period of 30 consecutive days after the Commencement Date, Landlord shall, at its sole cost and expense (which shall not constitute an Operating Expense), be responsible for any repairs that are required to be made to the Building Systems (as defined in Section 13) serving the Premises, unless Tenant or any Tenant Party was responsible for the cause of such repair, in which case Tenant shall pay the cost.

Subject to the provisions of Section 6 of the Work Letter, Landlord shall permit Tenant access to the Premises for a period of 30 days prior to the Commencement Date for Tenant's installation and setup of furniture, fixtures and equipment ("**FF&E Installation**"), provided that such FF&E Installation is coordinated with Landlord, and Tenant complies with the Lease and all other reasonable restrictions and conditions Landlord may impose. All such access shall be during normal business hours. Any access to the Premises by Tenant before the Commencement Date shall be subject to all of the terms and conditions of this Lease, excluding the obligation to pay Base Rent or Operating Expenses.

Tenant agrees and acknowledges that, except as otherwise expressly provided in this Lease, neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the condition of all or any portion of the Premises or the Project, and/or the suitability of the Premises or the Project for the conduct of Tenant's business, and Tenant waives any implied warranty that the Premises or the Project are suitable for the Permitted Use. This Lease constitutes the complete agreement of Landlord and Tenant with respect to the subject matter hereof and supersedes any and all prior representations, inducements, promises, agreements, understandings and negotiations which are not contained herein. Landlord in executing this Lease does so in reliance upon Tenant's representations, warranties, acknowledgments and agreements contained herein.

3. **Rent**.

(a) **Base Rent**. The first month's Base Rent shall be due and payable on delivery of an executed copy of this Lease to Landlord. The Security Deposit shall be due on the date that is 5 days after the mutual execution and delivery of this Lease by the parties. Tenant shall pay to Landlord in advance, without demand, abatement, deduction or set-off, monthly installments of Base Rent on or before the first day of each calendar month during the Term hereof, in lawful money of the United States of America, at the office of Landlord for payment of Rent set forth above, or to such other person or at such other place as Landlord may from time to time designate in writing. Payments of Base Rent for any fractional calendar month shall be prorated. The obligation of Tenant to pay Base Rent and other sums to Landlord and the obligations of Landlord under this Lease are independent obligations. Tenant shall have no right at any time to abate, reduce, or set-off any Rent (as defined in Section 5) due hereunder except for any abatement as may be expressly provided in this Lease.

Notwithstanding anything to the contrary contain herein, so long as Tenant is not in Default under this Lease, for the period commencing on the Commencement Date through the last day of the 30th full month after the Commencement Date (the "**Partial Abatement Period**"), Tenant shall only be required to pay Base Rent with respect to 11,000 rentable square feet of the Premises. Commencing on the first day of the 31st full month after the Commencement Date, Tenant shall commence paying Base Rent with respect to the entire Premises.

(b) **Additional Rent**. In addition to Base Rent, Tenant agrees to pay to Landlord as additional rent ("**Additional Rent**"): (i) commencing on the Commencement Date, Tenant's Share of "Operating Expenses" (as defined in Section 5). and (ii) any and all other amounts Tenant assumes or agrees to pay under the provisions of this Lease, including, without limitation, any and all other sums that may become due by reason of any default of Tenant or failure to comply with the agreements, terms, covenants and conditions of this Lease to be performed by Tenant, after any applicable notice and cure period.

4. **Base Rent Adjustments**. Base Rent shall be increased on each annual anniversary of the first day of the first full month during the Term of this Lease (each an "**Adjustment Date**") by multiplying the Base Rent payable immediately before such Adjustment Date by the Rent Adjustment Percentage and adding the resulting amount to the Base Rent payable immediately before such Adjustment Date. Base Rent, as so adjusted, shall thereafter be due as provided herein. Base Rent adjustments for any fractional calendar month shall be prorated.

5. **Operating Expense Payments**. Landlord shall deliver to Tenant, not later than April 1st of each calendar year, a written estimate of Operating Expenses for such calendar year during the Term (the "**Annual Estimate**"), which may be revised by Landlord from time to time during such calendar year. Commencing on the Commencement Date and continuing thereafter on the first day of each month during the Term, Tenant shall pay Landlord an amount equal to 1/12th of Tenant's Share of the Annual Estimate. Payments for any fractional calendar month shall be prorated.

Notwithstanding anything to the contrary contained herein, during the Partial Abatement Period, so long as Tenant is not in Default under this Lease, other than with respect to Utilities (as defined in Section H) provided to the Premises which Tenant shall pay with respect to the entire Premises commencing on the Commencement Date, Tenant shall only be required to pay Operating Expenses (including the administration rent provided for below) with respect to 11,000 rentable square feet of the Premises (i.e., Tenant Share of Operating Expenses shall be equal to 19.63%). Commencing on the first day of the 31st month after the Commencement Date, Tenant shall commence paying Operating Expenses (including the administration rent) with respect to the entire Premises.

The term "**Operating Expenses**" means all costs and expenses of any kind or description whatsoever incurred or accrued each calendar year during the Term by Landlord with respect to the Project (including, without duplication, Taxes (as defined in Section 9). capital repairs and improvements amortized over the lesser of 10 years and the useful life of such capital items, and the costs of Landlord's third party property manager or, if there is no third party property manager, administration rent in the amount of 3.0% of Base Rent), excluding only the following:

(a) the original construction costs of the Project and renovation prior to the date of the Lease and costs of correcting defects in such original construction or renovation;

(b) capital expenditures for expansion of the Project including, without limitation, the original costs incurred (i) to construct another building at the Project, (ii) to expand the Building, or (iii) to construct a bridge or walkway to connect the Building with any other building at the Project;

(c) interest, principal payments of Mortgage (as defined in Section *27)* debts of Landlord, financing costs and amortization of funds borrowed by Landlord, whether secured or unsecured, and all payments of rent (but not taxes or operating expenses) under any ground lease or other underlying lease of all or any portion of the Project;

(d) depreciation of the Project (except for capital improvements, the cost of which are includable in Operating Expenses);

(e) advertising, marketing, solicitation, legal and space planning expenses and leasing commissions and other costs and expenses incurred in procuring and leasing space to tenants for the Project, including any leasing office maintained in the Project, free rent and construction allowances for tenants;

(f) legal and other expenses incurred in the negotiation or enforcement of leases;

(g) completing, fixturing, improving, renovating, painting, redecorating or other work, which Landlord pays for or performs for other tenants within their premises, and costs of correcting defects in such work;

(h) costs to be reimbursed by other tenants of the Project or Taxes to be paid directly by Tenant or other tenants of the Project, whether or not actually paid;

(i) salaries, wages, benefits and other compensation paid to (i) personnel of Landlord or its agents or contractors above the position of the person, regardless of title, who has day-to-day management responsibility for the Project or (ii) officers and employees of Landlord or its affiliates who are not assigned in whole or in part to the operation, management, maintenance or repair of the Project; provided, however, that with respect to any such person who does not devote substantially all of his or her employed time to the Project, the salaries, wages, benefits and other compensation of such person shall be prorated to reflect time spent on matters related to operating, managing, maintaining or repairing the Project in comparison to the time spent on matters unrelated to operating, managing, maintaining or repairing the Project;

(j) general organizational, administrative and overhead costs relating to maintaining Landlord's existence, either as a corporation, partnership, or other entity, including general corporate, legal and accounting expenses;

(k) costs (including attorneys' fees and costs of settlement, judgments and payments in lieu thereof) incurred in connection with disputes with tenants, other occupants, or prospective tenants, and costs and expenses, including legal fees, incurred in connection with negotiations or disputes with employees, consultants, management agents, leasing agents, purchasers or mortgagees of the Building;

(l) costs incurred by Landlord due to the violation by Landlord, its employees, agents or contractors or any tenant of the terms and conditions of any lease of space in the Project or any Legal Requirement (as defined in Section 7);

(m) penalties, fines or interest incurred as a result of Landlord's inability or failure to make payment of Taxes and/or to file any tax or informational returns when due, or from Landlord's failure to make any payment of Taxes required to be made by Landlord hereunder before delinquency;

(n) overhead and profit increment paid to Landlord or to subsidiaries or affiliates of Landlord for goods and/or services in or to the Project to the extent the same exceeds the costs of such goods and/or services rendered by unaffiliated third parties on a competitive basis;

(o) costs, fees, dues, contributions or similar expenses for Landlord's charitable or political contributions, or for sculptures, paintings, fountains or other objects of fine art maintained at the Project;

(p) costs in connection with services (including electricity), items or other benefits of a type which are not standard for the Project and which are not available to Tenant without specific charges therefor, but which are provided to another tenant or occupant of the Project, whether or not such other tenant or occupant is specifically charged therefor by Landlord;

(q) costs incurred in the sale or refinancing of the Project;

(r) net income taxes of Landlord or the owner of any interest in the Project, franchise, capital stock, gift, estate or inheritance taxes or any federal, state or local documentary taxes imposed against the Project or any portion thereof or interest therein;

(s) any costs, fees, dues, contributions or similar expenses for political, charitable, industry association or similar organizations, as well as the cost of any newspaper, magazine, trade or other subscriptions, excepting the Building's/Project's annual membership dues in the local Building Owners and Managers Association;

(t) rentals and other related expenses incurred for systems or equipment, the cost of which if purchased would be required under the other terms of this Lease to be excluded from Operating Expenses as a capital cost, excepting from this exclusion equipment not affixed to the Project which is used in providing janitorial or similar services and, further excepting from this exclusion such equipment rented or leased to remedy or ameliorate an emergency condition at the Project;

(u) any cost of any service or items made available to tenants or other occupants at the Project other than Tenant for which Landlord or Landlord's managing agent has been or is entitled to be reimbursed by such tenants or other occupants for such service or has been reimbursed by insurance or otherwise compensated by parties other than tenants of the Project to include replacement of any item to the extent covered by a warranty;

(v) fines, costs, late charges, liquidated damages, penalties, tax penalties or related interest charges imposed on Landlord or Landlord's managing agent for failure by Landlord to comply with Legal Requirements except to the extent attributable to any acts or omissions of Tenant or any Tenant Party;

(w) commercial concessions operated at the Project by or on behalf of the Landlord;

(x) any flowers, gifts, balloons, etc. provided to any entity including, but not limited to, Tenant, other tenants, employees, vendors, contractors, prospective tenants and agents;

(y) interest reserves or reserves of any kind;

(z) any cost incurred in or properly attributable to a year prior to the year in which the Commencement Date occurs, including, but not limited to, amortization of capital expenditures and real estate taxes incurred for prior years but billed and paid after the Commencement Date;

(aa) any costs incurred to remove, study, test or remediate Hazardous Materials in or about the Premises, the Building or the Project for which Tenant is not responsible under Section 30 hereof; and

(bb) any expenses otherwise includable within Operating Expenses to the extent actually reimbursed by persons other than tenants of the Project under leases for space in the Project.

In addition, notwithstanding anything to the contrary contained in this Lease, Operating Expenses incurred or accrued by Landlord with respect to any capital improvements which are reasonably expected by Landlord to reduce overall Operating Expenses (for example, without limitation, by reducing energy usage at the Project) (the "**Energy Savings Costs**") shall be amortized over a period of years equal to the least of (A) 7 years, (B) the useful life of such capital items, or (C) the quotient of (i) the Energy Savings Costs, divided by (ii) the annual amount of Operating Expenses reasonably expected by Landlord to be saved as a result of such capital improvements.

Following the date that is 18 months after Landlord's delivery of an Annual Statement (as defined below) to Tenant, Tenant shall not be responsible for the payment of items of Operating Expenses not reflected in such Annual Statement, except for Taxes for which Tenant is responsible under this Lease and/or any costs for which Landlord is billed after the expiration of such 18 month period.

Within 90 days after the end of each calendar year (or such longer period as may be reasonably required), Landlord shall furnish to Tenant a statement (an "**Annual Statement**") showing in reasonable detail: (a) the total and Tenant's Share of actual Operating Expenses for the previous calendar year, and (b) the total of Tenant's payments in respect of Operating Expenses for such year. If Tenant's Share of actual Operating Expenses for such year exceeds Tenant's payments of Operating Expenses for such year, the excess shall be due and payable by Tenant as Rent within 30 days after delivery of such Annual Statement to Tenant. If Tenant's payments of Operating Expenses for such year exceed Tenant's Share of actual Operating Expenses for such year Landlord shall pay the excess to Tenant within 30 days after delivery of such Annual Statement, except that after the expiration, or earlier termination of the Term or if Tenant is delinquent in its obligation to pay Rent, Landlord shall pay the excess to Tenant after deducting all other amounts due Landlord. Landlord's and Tenant's obligations to pay any overpayments or deficiencies due pursuant to this paragraph shall survive the expiration or earlier termination of this Lease.

The Annual Statement shall be final and binding upon Tenant unless Tenant, within 90 days after Tenant's receipt thereof, shall contest any item therein by giving written notice to Landlord, specifying each item contested and the reason therefor. If, during such 90 day period, Tenant reasonably and in good faith questions or contests the accuracy of Landlord's statement of Tenant's Share of Operating Expenses, Landlord will provide Tenant with access to Landlord's books and records relating to the operation of the Project, Landlord's calculation of Operating Expenses and such other information reasonably requested by Tenant relating thereto (the "**Expense Information**"). If after Tenant's review of such Expense Information, Landlord and Tenant cannot agree upon the amount of

Tenant's Share of Operating Expenses, then Tenant shall have the right to have an independent public accounting firm selected by Tenant from among the 4 largest in the United States, working pursuant to a fee arrangement other than a contingent fee (at Tenant's sole cost and expense) and approved by Landlord (which approval shall not be unreasonably withheld, conditioned or delayed), audit and/or review the Expense Information for the year in question (the "**Independent Review**"). The results of any such Independent Review shall be binding on Landlord and Tenant. If the Independent Review shows that the payments actually made by Tenant with respect to Operating Expenses for the calendar year in question exceeded Tenant's Share of Operating Expenses for such calendar year, Landlord shall at Landlord's option either (i) credit the excess amount to the next succeeding installments of estimated Operating Expenses or (ii) pay the excess to Tenant within 30 days after delivery of such statement, except that after the expiration or earlier termination of this Lease or if Tenant is delinquent in its obligation to pay Rent, Landlord shall pay the excess to Tenant after deducting all other amounts due Landlord. If the Independent Review shows that Tenant's payments with respect to Operating Expenses for such calendar year were less than Tenant's Share of Operating Expenses for the calendar year, Tenant shall pay the deficiency to Landlord within 30 days after delivery of such statement. If the Independent Review shows that Tenant has overpaid with respect to Operating Expenses by more than 5% then Landlord shall reimburse Tenant for all costs incurred by Tenant for the Independent Review. Operating Expenses for the calendar years in which Tenant's obligation to share therein begins and ends shall be prorated. Notwithstanding anything set forth herein to the contrary, if the Project is not at least 95% occupied on average during any year of the Term, Tenant's Share of Operating Expenses for such year shall be computed as though the Project had been 95% occupied on average during such year.

"**Tenant's Share**" shall be the percentage set forth on the first page of this Lease as Tenant's Share as reasonably adjusted by Landlord for changes in the physical size of the Premises or the Project occurring thereafter. To the extent that Landlord has a reasonable basis for doing so, Landlord may increase on an equitable and reasonable basis Tenant's Share for any item of expense or cost reimbursable by Tenant that relates to a repair, replacement, or service that benefits only the Premises or only a portion of the Project that includes the Premises or that varies with occupancy or use. Base Rent, Tenant's Share of Operating Expenses and all other amounts payable by Tenant to Landlord hereunder are collectively referred to herein as "**Rent**."

6. **Security Deposit**. Tenant shall deposit with Landlord, within 5 days after the mutual execution and delivery of this Lease by the parties, a security deposit (the "**Security Deposit**") for the performance of all of Tenant's obligations hereunder in the amount set forth on page 1 of this Lease, which Security Deposit shall be in the form of an unconditional and irrevocable letter of credit (the "**Letter of Credit**"): (i) in form and substance reasonably satisfactory to Landlord, (ii) naming Landlord as beneficiary, (iii) expressly allowing Landlord to draw upon it at any time from time to time by delivering to the issuer notice that Landlord Is entitled to draw thereunder, (iv) issued by an FDIC-insured financial institution reasonably satisfactory to Landlord, and (v) redeemable by presentation of a sight draft in the State of California. If Tenant does not provide Landlord with a substitute Letter of Credit complying with all of the requirements hereof at least 10 days before the stated expiration date of any then current Letter of Credit, Landlord shall have the right to draw the full amount of the current Letter of Credit and hold the funds drawn in cash without obligation for interest thereon as the Security Deposit. The Security Deposit shall be held by Landlord as security for the performance of Tenant's obligations under this Lease. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Upon each occurrence of a Default (as defined in Section 20), Landlord may use all or any part of the Security Deposit to pay delinquent

payments due under this Lease, future rent damages under California Civil Code Section 1951.2, and the cost of any damage, injury, expense or liability caused by such Default, without prejudice to any other remedy provided herein or provided by law. Landlord's right to use the Security Deposit under this Section 6 includes the right to use the Security Deposit to pay future rent damages following the termination of this Lease pursuant to Section 21(c) below. Upon any use of all or any portion of the Security Deposit, Tenant shall pay Landlord on demand the amount that will restore the Security Deposit to the amount set forth on Page 1 of this Lease. Tenant hereby waives the provisions of any law, now or hereafter in force, including, without limitation, California Civil Code Section 1950.7, which provide that Landlord may claim from a security deposit only those sums reasonably necessary to remedy defaults in the payment of Rent, to repair damage caused by Tenant or to clean the Premises, it being agreed that Landlord may, in addition, claim those sums reasonably necessary to compensate Landlord for any other loss or damage, foreseeable or unforeseeable, caused by the act or omission of Tenant or any officer, employee, agent or invitee of Tenant. Upon bankruptcy or other debtor-creditor proceedings against Tenant, the Security Deposit shall be deemed to be applied first to the payment of Rent and other charges due Landlord for periods prior to the filing of such proceedings. If Tenant shall fully perform every provision of this Lease to be performed by Tenant, the Security Deposit, or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of this Lease), shall be returned to Tenant (or, at Landlord's option, to the last assignee of Tenant's interest hereunder) within 60 days after the expiration or earlier termination of this Lease.

If Landlord transfers its interest in the Project or this Lease, Landlord shall either (a) transfer any Security Deposit then held by Landlord to a person or entity assuming in writing Landlord's obligations under this Section 6. or (b) return to Tenant any Security Deposit then held by Landlord and remaining after the deductions permitted herein. Upon such transfer to such transferee or the return of the Security Deposit to Tenant, Landlord shall have no further obligation with respect to the Security Deposit, and Tenant's right to the return of the Security Deposit shall apply solely against Landlord's transferee. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Landlord's obligation respecting the Security Deposit is that of a debtor, not a trustee, and no interest shall accrue thereon.

7. **Use**. The Premises shall be used solely for the Permitted Use set forth in the basic lease provisions on page 1 of this Lease, and in compliance with all laws, orders, judgments, ordinances, regulations, codes, directives, permits, licenses, covenants and restrictions now or hereafter applicable to the Premises, and to the use and occupancy thereof, including, without limitation, the Americans With Disabilities Act, 42 U.S.C. § 12101, et seq. (together with the regulations promulgated pursuant thereto, "**ADA**") (collectively, "**Legal Requirements**" and each, a "**Legal Requirement**"). Tenant shall, upon 5 days' written notice from Landlord, discontinue any use of the Premises which is declared by any Governmental Authority (as defined in Section 9) having jurisdiction to be a violation of a Legal Requirement Tenant will not use or permit the Premises to be used for any purpose or in any manner that would void Tenant's or Landlord's insurance, increase the insurance risk, or cause the disallowance of any sprinkler or other credits. Tenant shall not permit any part of the Premises to be used as a "place of public accommodation", as defined in the ADA or any similar legal requirement. Tenant shall reimburse Landlord promptly upon demand for any additional premium charged for any such insurance policy by reason of Tenant's failure to comply with the provisions of this Section or otherwise caused by Tenant's particular use and/or occupancy of the Premises. Tenant will use the Premises in a careful, safe and proper manner and will not commit or permit waste, overload the floor or

structure of the Premises, subject the Premises to use that is reasonably likely to damage to the Premises or obstruct or interfere with the rights of Landlord or other tenants or occupants of the Project, including conducting or giving notice of any auction, liquidation, or going out of business sale on the Premises, or using or allowing the Premises to be used for any unlawful purpose. Tenant shall cause any equipment or machinery to be installed in the Premises so as to reasonably prevent sounds or vibrations from the Premises from extending into Common Areas, or other space in the Project. Tenant shall not place any machinery or equipment weighing 500 pounds or more in or upon the Premises or transport or move such items through the Common Areas of the Project or in the Project elevators without the prior written consent of Landlord. Except as may be provided under the Work Letter, Tenant shall not, without the prior written consent of Landlord, use the Premises in any manner which will require ventilation, air exchange, heating, gas, steam, electricity or water beyond the existing capacity of the Project as proportionately allocated to the Premises based upon Tenant's Share (as set forth on Page 1 without adjustment pursuant to Section 5) as usually furnished for the Permitted Use.

Landlord shall be responsible, at Landlord's cost and not as part of Operating Expenses, for the compliance of the Premises and the Common Areas of the Project with Legal Requirements as of the Commencement Date. Following the Commencement Date, Landlord shall, as an Operating Expense (to the extent such Legal Requirement is generally applicable to similar buildings in the area in which the Project is located) and at Tenant's expense (to the extent such Legal Requirement is triggered by reason of Tenant's, as compared to other tenants of the Project, particular use of the Premises or Tenant's Alterations) make any alterations or modifications to the Common Areas or the exterior of the Building that are required by Legal Requirements. Except as provided in the 2 immediately preceding sentences, Tenant, at its sole expense, shall make any alterations or modifications to the interior of the Premises that are required by Legal Requirements (including, without limitation, compliance of the Premises with the ADA) related to Tenant's particular use or occupancy of the Premises. Notwithstanding any other provision herein to the contrary, Tenant shall be responsible for any and all demands, claims, liabilities, losses, costs, expenses, actions, causes of action, damages or judgments, and ail reasonable expenses incurred in investigating or resisting the same (including, without limitation, reasonable attorneys' fees, charges and disbursements and costs of suit) (collectively, "**Claims**") arising out of or in connection with Legal Requirements related to Tenant's particular use or occupancy of the Premises or Tenant's Alterations (not including the Tenant Improvements (as defined in the Work Letter) constructed pursuant to the Work Letter), and Tenant shall indemnify, defend, hold and save Landlord harmless from and against any and all Claims arising out of or in connection with any failure of the Premises to comply with any Legal Requirement related to Tenant's particular use or occupancy of the Premises or Tenant's Alterations (not including the Tenant Improvements constructed pursuant to the Work Letter).

Tenant acknowledges that Landlord may, but shall not be obligated to, seek to obtain Leadership in Energy and Environmental Design (LEED), WELL Building Standard, or other similar "green" certification with respect to the Project and/or the Premises, and Tenant agrees, at no material cost to Tenant, to reasonably cooperate with Landlord, and to provide such information and/or documentation as Landlord may reasonably request, in connection therewith.

8. **Holding Over**. If, with Landlord's express written consent, Tenant retains possession of the Premises after the termination of the Term, (i) unless otherwise agreed in such written consent, such possession shall be subject to immediate termination by Landlord at any time, (ii) all of the other terms and provisions of this Lease (including, without limitation, the adjustment of Base Rent pursuant to Section 4 hereof) shall remain in full force and effect (excluding any expansion or renewal option or other similar right or option)

during such holdover period, (iii) Tenant shall continue to pay Base Rent in the amount payable upon the date of the expiration or earlier termination of this Lease or such other amount as Landlord and Tenant may agree in such written consent, and (iv) all other payments shall continue under the terms of this Lease. If Tenant remains in possession of the Premises after the expiration or earlier termination of the Term without the express written consent of Landlord, (A) Tenant shall become a tenant at sufferance upon the terms of this Lease except that the monthly rental shall be equal to 150% of Rent in effect during the last 30 days of the Term, and (B) Tenant shall be responsible for all damages suffered by Landlord resulting from or occasioned by Tenant's holding over, including consequential damages; provided, however, that if Tenant delivers a written inquiry to Landlord within 30 days prior to the expiration or earlier termination of the Term, Landlord will notify Tenant whether the potential exists for consequential damages. No holding over by Tenant, whether with or without consent of Landlord, shall operate to extend this Lease except as otherwise expressly provided, and this Section 8 shall not be construed as consent for Tenant to retain possession of the Premises. Acceptance by Landlord of Rent after the expiration of the Term or earlier termination of this Lease shall not result in a renewal or reinstatement of this Lease.

9. **Taxes**. Landlord shall pay, as part of Operating Expenses, all real property taxes, levies, fees, assessments and governmental charges of any kind, existing as of the Commencement Date or thereafter enacted (collectively referred to as "**Taxes**"), imposed on the Project by any federal, state, regional, municipal, local or other governmental authority or agency, including, without limitation, quasi-public agencies (collectively, "**Governmental Authority**") during the Term, including, without limitation, all Taxes; (i) imposed on or measured by or based, in whole or in part, on rent payable to (or gross receipts received by) Landlord under this Lease and/or from the rental by Landlord of the Project or any portion thereof, or (ii) based on the square footage, assessed value or other measure or evaluation of any kind of the Premises or the Project, or (iii) assessed or imposed by or on the operation or maintenance of any portion of the Premises or the Project, including parking, or (iv) assessed or imposed by, or at the direction of, or resulting from Legal Requirements, or interpretations thereof, promulgated by any Governmental Authority, or (v) imposed as a license or other fee, charge, tax, or assessment on Landlord's business or occupation of leasing space in the Project. Landlord may contest by appropriate legal proceedings the amount, validity, or application of any Taxes or liens securing Taxes. Taxes shall not include any net income taxes, franchise, estate, inheritance, succession, capital levy, transfer or excess profits taxes imposed on Landlord except to the extent such net income taxes are in substitution for any Taxes payable hereunder. If any such Tax is levied or assessed directly against Tenant, then Tenant shall be responsible for and shall pay for Tenant's Share of the same at such times and in such manner as the taxing authority shall require. Tenant shall pay, prior to delinquency, any and all Taxes levied or assessed against any personal property or trade fixtures placed by Tenant in the Premises, whether levied or assessed against Landlord or Tenant. If any Taxes on Tenant's personal property or trade fixtures are levied against Landlord or Landlord's property, or if the assessed valuation of the Project is increased by a value attributable to improvements in or alterations to the Premises, whether owned by Landlord or Tenant and whether or not affixed to the real property so as to become a part thereof, higher than the base valuation on which Landlord from time-to-time allocates Taxes to all tenants in the Project, Landlord shall have the right, but not the obligation, to pay such Taxes. Landlord's reasonable determination of any excess assessed valuation shall be binding and conclusive, absent manifest error. The amount of any such payment by Landlord shall constitute Additional Rent due from Tenant to Landlord immediately upon demand.

10. **Parking**. Subject to all applicable Legal Requirements, Force Majeure, a Taking (as defined in and governed by Section 19 below) and the exercise by Landlord of its rights hereunder, Tenant shall have the right, at no additional charge during the Base Term, in common with other tenants of the Project to use 2.5 parking spaces per 1,000 rentable square feet of the Premises, in those areas designated for non-reserved parking, subject in each case to Landlord's reasonable and non-discriminatory rules and regulations. Four (4) of the parking spaces which Tenant is entitled to use pursuant to the first sentence of this Section 10, which shall be located in front of the Premises and otherwise in a location determined by Landlord, shall be marked as reserved for Tenant and its visitors. Landlord shall not be responsible for enforcing Tenant's parking rights against any third parties, including other tenants of the Project, or for enforcing any reservation of parking spaces.

11. **Utilities, Services**. Landlord shall provide, subject to the terms of this Section 11. water, electricity, heat, light, power, sewer, and other utilities (including gas and fire sprinklers to the extent the Project is plumbed for such services) to the Premises and the Project, and, with respect to the Common Areas only, refuse and trash collection and janitorial services (collectively, "**Utilities**"). Landlord shall pay, as Operating Expenses or subject to Tenant's reimbursement obligation, for all Utilities used on the Premises, all maintenance charges for Utilities, and any storm sewer charges or other similar charges for Utilities imposed by any Governmental Authority or Utility provider, and any taxes, penalties, surcharges or similar charges thereon. Landlord may cause any Utilities to be separately metered or charged directly to Tenant by the provider. Tenant shall pay directly to the Utility provider, prior to delinquency, any separately metered Utilities and services which may be furnished to Tenant or the Premises during the Term. Tenant shall pay, as part of Operating Expenses, its share of all charges for jointly metered Utilities based upon consumption, as reasonably determined by Landlord. No interruption or failure of Utilities, from any cause whatsoever other than Landlord's willful misconduct, shall result in eviction or constructive eviction of Tenant, termination of this Lease or the abatement of Rent. Tenant agrees to limit use of water and sewer with respect to Common Areas to normal restroom use. Tenant shall be responsible for obtaining and paying for its own refuse and trash collection services and janitorial services for the Premises.

Notwithstanding anything to the contrary set forth herein, if (i) a stoppage of an Essential Service (as defined below) to the Premises shall occur and such stoppage is due solely to the gross negligence or willful misconduct of Landlord and not due in any part to any act or omission on the part of Tenant or any Tenant Party or any matter beyond Landlord's reasonable control (any such stoppage of an Essential Service being hereinafter referred to as a "**Service Interruption**"), and (ii) such Service Interruption continues for more than 5 consecutive business days after Landlord shall have received written notice thereof from Tenant, and (iii) as a result of such Service Interruption, the conduct of Tenant's normal operations in the Premises are materially and adversely affected, then, there shall be an abatement of one day's Base Rent for each day during which such Service Interruption continues after such 5 business day period; provided, however, that if any part of the Premises is reasonably useable for Tenant's normal business operations or if Tenant conducts all or any part of its operations in any portion of the Premises notwithstanding such Service Interruption, then the amount of each daily abatement of Base Rent shall only be proportionate to the nature and extent of the interruption of Tenant's normal operations or ability to use the Premises. The rights granted to Tenant under this paragraph shall be Tenant's sole and exclusive remedy resulting from a failure of Landlord to provide services, and Landlord shall not otherwise be liable for any loss or damage suffered or sustained by Tenant resulting from any failure or cessation of services. For purposes hereof, the term "**Essential Services**" shall mean the following services: HVAC service, water, sewer and electricity, but in each case only to the extent that Landlord has an obligation to provide

same to Tenant under this Lease. The provisions of this paragraph shall only apply as long as the original Tenant is the tenant occupying the Premises under this Lease and shall not apply to any assignee or sublessee.

Tenant agrees to provide Landlord with reasonable access to Tenant's water and/or energy usage data on a monthly basis, either by providing Tenant's applicable utility login credentials to Landlord's Measurable online portal, or by another delivery method reasonably agreed to by Landlord and Tenant. The costs and expenses incurred by Landlord in connection with receiving and analyzing such water and/or energy usage data (including, without limitation, as may be required pursuant to applicable Legal Requirements) shall be included as part of Operating Expenses.

12. **Alterations and Tenant's Property**. Any alterations, additions, or improvements made to the Premises by or on behalf of Tenant, including additional locks or bolts of any kind or nature upon any doors or windows in the Premises, but excluding installation, removal or realignment of furniture systems (other than removal of furniture systems owned or paid for by Landlord) not involving any modifications to the structure or connections (other than by ordinary plugs or jacks) to Building Systems (as defined in Section 13) ("**Alterations**") shall be subject to Landlord's prior written consent, which may be given or withheld in Landlord's sole discretion if any such Alteration affects the structure or Building Systems and shall not be otherwise unreasonably withheld. If Landlord approves any Alterations, Landlord may impose such reasonable conditions on Tenant in connection with the commencement, performance and completion of such Alterations as Landlord may deem appropriate in Landlord's reasonable discretion. Any request for approval shall be in writing, delivered not less than 15 business days in advance of any proposed construction, and accompanied by plans, specifications, bid proposals, work contracts and such other information concerning the nature and cost of the alterations as may be reasonably requested by Landlord, including the identities and mailing addresses of all persons performing work or supplying materials. Landlord's right to review plans and specifications and to monitor construction shall be solely for its own benefit, and Landlord shall have no duty to ensure that such plans and specifications or construction comply with applicable Legal Requirements. Tenant shall cause, at its sole cost and expense, all Alterations to comply with insurance requirements and with Legal Requirements and shall implement at its sole cost and expense any alteration or modification required by Legal Requirements as a result of any Alterations. Tenant shall pay to Landlord, as Additional Rent, on demand an amount equal to 1 % of all charges incurred by Tenant or its contractors or agents in connection with any Alteration to cover Landlord's overhead and expenses for plan review, coordination, scheduling and supervision. Before Tenant begins any Alteration, Landlord may post on and about the Premises notices of non-responsibility pursuant to applicable law. Tenant shall reimburse Landlord for, and indemnify and hold Landlord harmless from, any expense incurred by Landlord by reason of faulty work done by Tenant or its contractors, delays caused by such work, or inadequate cleanup.

Tenant shall furnish security or make other arrangements satisfactory to Landlord to assure payment for the completion of all Alterations work free and clear of liens, and shall provide (and cause each contractor or subcontractor to provide) certificates of insurance for workers' compensation and other coverage in amounts and from an insurance company satisfactory to Landlord protecting Landlord against liability for personal injury or property damage during construction. Upon completion of any Alterations, Tenant shall deliver to Landlord: (I) certified statements setting forth the names of all contractors and subcontractors who did the work and final lien waivers from all such contractors and subcontractors; and (ii) "as built" plans for any such Alteration.

Except for Removable Installations (as hereinafter defined), all Installations (as hereinafter defined) shall be and shall remain the property of Landlord during the Term and following the expiration or earlier termination of the Term, shall not be removed by Tenant at any time during the Term, and shall remain upon and be surrendered with the Premises as a part thereof. Notwithstanding the foregoing, Landlord may, at the time its approval of any such Installation is requested, notify Tenant that Landlord requires that Tenant remove such Installation upon the expiration or earlier termination of the Term, in which event Tenant shall remove such Installation in accordance with the immediately succeeding sentence. Upon the expiration or earlier termination of the Term, Tenant shall remove (i) all wires, cables or similar equipment which Tenant has installed in the Premises or in the risers or plenums of the Building, (ii) any Installations for which Landlord has given Tenant notice of removal in accordance with the immediately preceding sentence, and (iii) all of Tenant's Property (as hereinafter defined), and Tenant shall restore and repair any damage caused by or occasioned as a result of such removal, including, without limitation, capping off all such connections behind the walls of the Premises and repairing any holes. During any restoration period beyond the expiration or earlier termination of the Term, Tenant shall pay Rent to Landlord as provided herein as if said space were otherwise occupied by Tenant.

Subject to the provisions of this paragraph, during the Term, Landlord waives any statutory landlord's lien and any attachment for Rent on Tenant's Property and on any Alteration of Tenant that is not required to be surrendered to Landlord at the expiration or sooner termination of the Term of this Lease (collectively, "**Personalty**") that Landlord may have or may hereafter acquire. Landlord acknowledges and agrees that Tenant's Personalty may be leased from an equipment lessor or encumbered by Tenant's lender (collectively, "**Equipment Lessor**") and that Tenant may execute and enter into an equipment lease or security agreement with respect to such Personalty ("**Equipment Lease**"). If and to the extent required by any Equipment Lease or Equipment Lessor, Landlord shall execute and deliver to the Equipment Lessor a written consent, waiver and/or acknowledgment which is in form and content reasonably acceptable to Landlord ("**Lien Waiver**") in which Landlord (i) acknowledges and agrees that, during the Term, the Personalty which is the subject of the Equipment Lease and described with specificity on an exhibit to the Lien Waiver constitutes the personal property of Tenant (unless contrary to the provisions of this Lease), and shall not be considered to be part of the Premises, regardless of whether or by what means they become attached thereto, (ii) agrees that, during the Term, it shall not claim any interest in such Personalty, and (iii) agrees that Equipment Lessor may enter the Premises for the purpose of removing such Personalty, but only if, in such consent such Equipment Lessor agrees to repair any damage resulting from such removal and to indemnify and hold harmless Landlord from and against any claim or other loss that results from such entry and, agrees, within 3 business days after the expiration or termination of the Term to pay all Rent that would accrue under the Lease if it had not terminated or expired for the period from the expiration or termination of such Lease until 5 business days after such Equipment Lessor relinquishes its right rights to enter into the Premises; provided, further, such Equipment Lessor's right to enter the Premises shall in any event expire 30 days after the expiration or termination of the Lease in which case the Equipment Lessor and Tenant shall agree that the Personalty shall be deemed abandoned. Such Lien Waiver documents also may contain such other reasonable and customary provisions that are reasonably acceptable to Landlord. Landlord shall be entitled to be paid as administrative rent a fee of $1,000 per occurrence for its time and effort in preparing and negotiating each Lien Waiver.

For purposes of this Lease, (x) "**Removable Installations**" means any items listed on **Exhibit F** attached hereto and any items agreed by Landlord in writing to be included on **Exhibit F** in the future, (y) "**Tenant's Property**" means Removable Installations and, other than Installations, any personal property or equipment of Tenant that may be removed without material damage to the Premises, and (z) "**Installations**" means all property of any kind paid for with the Tl Fund, all Alterations, all fixtures, and all partitions, hardware, built-in machinery, built-in casework and cabinets and other similar additions, equipment, property and improvements built into the Premises so as to become an integral part of the Premises, including, without limitation, fume hoods which penetrate the roof or plenum area, built-in cold rooms, built-in warm rooms, walk-in cold rooms, walk-in warm rooms, deionized water systems, glass washing equipment, autoclaves, chillers, built-in plumbing, electrical and mechanical equipment and systems, and any power generator and transfer switch.

Tenant shall not be required to remove the Tenant Improvements constructed pursuant to the Work Letter at the expiration or earlier termination of the Term of this Lease nor shall Tenant have the right to remove any of the Tenant Improvements at any time prior to the expiration or earlier termination of the Term.

13. **Landlord's Repairs**. Landlord shall, at Landlord's sole expense (and not as an Operating Expense), be responsible for capital repairs and replacements of the roof (not including the roof membrane), exterior walls and foundation of the Building ("**Structural Items**") unless the need for such repairs or replacements is caused by Tenant or any Tenant Parties, in which case Tenant shall bear the full cost to repair or replace such Structural Items. Landlord shall, as an Operating Expense, be responsible for the routine maintenance and repair of such Structural Items. Landlord, as an Operating Expense, shall maintain, repair and replace the roof membrane and all of the exterior, parking and other Common Areas of the Project, including HVAC, plumbing, fire sprinklers and all other building systems serving the Premises and other portions of the Project ("**Building Systems**"), in good repair, reasonable wear and tear and uninsured losses and damages caused by Tenant, or by any of Tenant, or by any of Tenant's assignees, sublessees, licensees, agents, servants, employees, invitees and contractors (or any of Tenant's assignees, sublessees and/or licensees respective agents, servants, employees, invitees and contractors) (collectively, "**Tenant Parties**") excluded. Losses and damages caused by Tenant or any Tenant Party shall be repaired by Landlord, to the extent not covered by insurance, at Tenant's sole cost and expense. Landlord reserves the right to stop Building Systems services when necessary (i) by reason of accident or emergency, or (ii) for planned repairs, alterations or improvements, which are, in the judgment of Landlord, desirable or necessary to be made, until said repairs, alterations or improvements shall have been completed. Landlord shall have no responsibility or liability for failure to supply Building Systems services during any such period of interruption; provided, however, that Landlord shall, except in case of emergency, give Tenant at least 2 business days' advance notice of any planned stoppage of Building Systems services for routine maintenance, repairs, alterations or improvements. Tenant shall promptly give Landlord written notice of any repair required by Landlord pursuant to this Section, after which Landlord shall make a commercially reasonable effort to effect such repair. Landlord shall not be liable for any failure to make any repairs or to perform any maintenance unless such failure shall persist for an unreasonable time after Tenant's written notice of the need for such repairs or maintenance. Tenant waives its rights under any state or local law to terminate this Lease or to make such repairs at Landlord's expense and agrees that the parties' respective rights with respect to such matters shall be solely as set forth herein. Repairs required as the result of fire, earthquake, flood, vandalism, war, or similar cause of damage or destruction shall be controlled by Section 18.

Notwithstanding anything to the contrary contained in this Lease, as of the Commencement Date, the maintenance and repair obligations for the Premises shall be allocated between Landlord and Tenant as set forth on **Exhibit G** attached hereto. The maintenance obligations allocated to Tenant pursuant to **Exhibit G** (the "**Tenant Maintenance Obligations**") shall be performed by Tenant at Tenant's sole cost and expense. The Tenant Maintenance Obligations shall include the procurement and maintenance of contracts, in form and substance reasonably satisfactory to Landlord, with copies to Landlord upon Landlord's written request, for and with contractors reasonably acceptable to Landlord specializing and experienced in the respective Tenant Maintenance Obligations. Notwithstanding anything to the contrary contained herein, the scope of work of any such contracts entered into by Tenant pursuant to this paragraph shall, at a minimum, comply with manufacturer's recommended maintenance procedures for the optimal performance of the applicable equipment. Landlord shall, notwithstanding anything to the contrary contained in this Lease, have no obligation to perform any Tenant Maintenance Obligations. The Tenant Maintenance Obligations shall not include the right or obligation on the part of Tenant to make any structural and/or capital repairs or improvements to the Project, and Landlord shall, during any period that Tenant is responsible for the Tenant Maintenance Obligations, continue, as part of Operating Expenses (or as otherwise expressly provided in this Lease), to be responsible, as provided in the immediately preceding paragraph, for capital repairs and replacements required to be made to the Project. If Tenant fails to maintain any portion of the Premises for which Tenant is responsible as part of the Tenant Maintenance Obligations in a manner reasonably acceptable to Landlord within the requirements of this Lease, Landlord shall have the right, but not the obligation, to provide Tenant with written notice thereof and to assume the Tenant Maintenance Obligations if Tenant does not cure Tenant's failure within 15 days after receipt of such notice.

14. **Tenant's Repairs**. Subject to Section 13 hereof, Tenant, at its expense, shall repair, replace and maintain in good condition all portions of the Premises, including, without limitation, entries, doors, ceilings, interior windows, interior walls, and the interior side of demising walls. Such repair and replacement may include capital expenditures and repairs whose benefit may extend beyond the Term. Should Tenant fail to make any such repair or replacement or fail to maintain the Premises, Landlord shall give Tenant notice of such failure. If Tenant fails to commence cure of such failure within 10 days of Landlord's notice, and thereafter diligently prosecute such cure to completion, Landlord may perform such work and shall be reimbursed by Tenant within 10 days after demand therefor; provided, however, that if such failure by Tenant creates or could create an emergency, Landlord may immediately commence cure of such failure and shall thereafter be entitled to recover the costs of such cure from Tenant. Subject to Sections 17 and 18, Tenant shall bear the full uninsured cost of any repair or replacement to any part of the Project that results from damage caused by Tenant or any Tenant Party and any repair that benefits only the Premises.

15. **Mechanic's Liens**. Tenant shall discharge, by bond or otherwise, any mechanic's lien filed against the Premises or against the Project for work claimed to have been done for, or materials claimed to have been furnished to, Tenant within 10 days after Tenant receives notice of the filing thereof, at Tenant's sole cost and shall otherwise keep the Premises and the Project free from any liens arising out of work performed, materials furnished or obligations incurred by Tenant. Should Tenant fail to discharge any lien described herein, Landlord shall have the right, but not the obligation, to pay such claim or post a bond or otherwise provide security to eliminate the lien as a claim against title to the Project and the cost thereof shall be immediately due from Tenant as Additional Rent. If Tenant shall lease or finance the acquisition of office equipment, furnishings, or other personal property of a removable nature utilized by Tenant in the operation of Tenant's business at the Premises, Tenant warrants that in connection with any Uniform Commercial Code Financing Statement filed as a matter of public record by any lessor or creditor of Tenant, Tenant shall use reasonable good faith efforts to cause such lessor or creditor to cause such Financing Statement upon its face or by exhibit thereto to indicate that such Financing

Statement is applicable only to removable personal property of Tenant located within the Premises. In no event shall the address of the Project be furnished on the statement without qualifying language as to applicability of the lien only to removable personal property, located In an identified suite held by Tenant. Notwithstanding the foregoing, Tenant shall have the right to contest, in good faith, any mechanics' lien claims.

16. **Indemnification**. Tenant hereby indemnifies and agrees to defend, save and hold Landlord, its officers, directors, employees, managers, agents, sub-agents, constituent entities and lease signators (collectively, "**Landlord Indemnified Parties**") harmless from and against any and all Claims for injury or death to persons or damage to property occurring within or about the Premises or the Project arising directly or indirectly out of (a) use or occupancy of the Premises or the Project during the Term or any holding over (including, without limitation, any act, omission or neglect by Tenant or any Tenant's Parties in or about the Premises or at the Project), or (b) the a breach or default by Tenant in the performance of any of its obligations hereunder, except to the extent caused by the willful misconduct or gross negligence of Landlord Indemnified Parties. Landlord shall not be liable to Tenant for, and Tenant assumes all risk of damage to, personal property (including, without limitation, loss of records kept within the Premises). Tenant further waives any and all Claims for injury to Tenant's business or loss of income relating to any such damage or destruction of personal property (including, without limitation, any loss of records). Landlord Indemnified Parties shall not be liable for any damages arising from any act, omission or neglect of any tenant in the Project or of any other third party or Tenant Parties.

Notwithstanding any contrary provision of this Lease, Tenant shall not be liable to Landlord for any consequential damages, arising from a default by Tenant under this Lease; provided that this sentence shall not apply to Landlord's damages (x) as expressly provided for in Section 8. and/or (y) in connection with Tenant's obligations as more fully set forth in Section 30. In no event shall the foregoing limit the damages to which Landlord is entitled under Section 21.

17. **Insurance**. Landlord shall maintain all risk property and, if applicable, sprinkler damage insurance covering the full replacement cost of the Project. Landlord shall further procure and maintain commercial general liability insurance with a single loss limit of not less than $2,000,000 for bodily injury and property damage with respect to the Project. Landlord may, but is not obligated to, maintain such other insurance and additional coverages as it may deem necessary, including, but not limited to, flood, environmental hazard and earthquake, loss or failure of building equipment, errors and omissions, rental loss during the period of repair or rebuilding, workers' compensation insurance and fidelity bonds for employees employed to perform services and insurance for any improvements installed by Tenant or which are in addition to the standard improvements customarily furnished by Landlord without regard to whether or not such are made a part of the Project. All such insurance shall be included as part of the Operating Expenses. The Project may be included in a blanket policy (in which case the cost of such insurance allocable to the Project will be determined by Landlord based upon the insurer's cost calculations). Tenant shall also reimburse Landlord for any increased premiums or additional insurance which Landlord reasonably deems necessary as a result of Tenant's use of the Premises.

Tenant, at its sole cost and expense, shall maintain during the Term: all risk property insurance with business interruption and extra expense coverage, covering the full replacement cost of all property and improvements installed or placed in the Premises by Tenant at Tenant's expense; workers' compensation insurance with no less than the minimum limits required by law; employer's

liability insurance with employers liability limits of $1,000,000 bodily injury by accident - each accident, $1,000,000 bodily injury by disease - policy limit, and $1,000,000 bodily injury by disease - each employee; and commercial general liability insurance, with a minimum limit of not less than $2,000,000 per occurrence for bodily injury and property damage with respect to the Premises. The commercial general liability insurance maintained by Tenant shall name Alexandria Real Estate Equities, Inc., and Landlord, Its officers, directors, employees, managers, agents, sub-agents, constituent entities and lease signators (collectively, "**Landlord Insured Parties**"), as additional insureds; insure on an occurrence and not a claims-made basis (provided that Tenant's products liability insurance may be on a claims-made basis); be issued by insurance companies which have a rating of not less than policyholder rating of A and financial category rating of at least Class X in "Best's Insurance Guide"; shall not be cancelable for nonpayment of premium unless 30 days prior written notice shall have been given to Landlord from the insurer; not contain a hostile fire exclusion; contain a contractual liability endorsement; and provide primary coverage to Landlord Insured Parties (any policy issued to Landlord Insured Parties providing duplicate or similar coverage shall be deemed excess over Tenant's policies, regardless of limits). Certificates of insurance showing the limits of coverage required hereunder and showing Landlord as an additional insured shall be delivered to Landlord by Tenant prior to (i) the earlier to occur of (x) the Commencement Date, or (y) the date that Tenant accesses the Premises under this Lease, and (ii) each renewal of said insurance. Tenant's policy may be a "blanket policy" with an aggregate per location endorsement which specifically provides that the amount of insurance shall not be prejudiced by other losses covered by the policy. Tenant shall, at least 5 days prior to the expiration of such policies, furnish Landlord with renewal certificates.

In each instance where insurance is to name Landlord as an additional insured, Tenant shall upon written request of Landlord also designate and furnish certificates so evidencing Landlord as additional insured to; (i) any lender of Landlord holding a security interest in the Project or any portion thereof, (ii) the landlord under any lease wherein Landlord is tenant of the real property on which the Project is located, if the interest of Landlord is or shall become that of a tenant under a ground or other underlying lease rather than that of a fee owner, and/or (iii) any management company retained by Landlord to manage the Project.

The property insurance obtained by Landlord and Tenant shall include a waiver of subrogation by the insurers and all rights based upon an assignment from its insured, against Landlord or Tenant, and their respective officers, directors, employees, managers, agents, invitees and contractors ("**Related Parties**"), in connection with any loss or damage thereby insured against. Neither party nor its respective Related Parties shall be liable to the other for loss or damage caused by any risk insured against under property insurance required to be maintained hereunder, and each party waives any claims against the other party, and its respective Related Parties',, for such loss or damage. The failure of a party to insure its property shall not void this waiver. Landlord and its respective Related Parties shall not be liable for, and Tenant hereby waives all claims against such parties for, business interruption and losses occasioned thereby sustained by Tenant or any person claiming through Tenant resulting from any accident or occurrence in or upon the Premises or the Project from any cause whatsoever. If the foregoing waivers shall contravene any law with respect to exculpatory agreements, the liability of Landlord or Tenant shall be deemed not released but shall be secondary to the other's insurer.

Landlord may require insurance policy limits to be raised to conform with requirements of Landlord's lender and/or to bring coverage limits to levels then being generally required of new tenants within the Project; provided, however, that the increased amount of coverage is consistent with coverage amounts then commonly being required by institutional owners of similar projects with tenants occupying similar size premises in the geographical area In which the Project is located.

18. **Restoration**. If, at any time during the Term, the Project or the Premises are damaged or destroyed by a fire or other insured casualty, Landlord shall notify Tenant within 60 days after discovery of such damage as to the amount of time Landlord reasonably estimates it will take to restore the Project or the Premises, as applicable (the "**Restoration Period**"). If the Restoration Period is estimated to exceed 12 months (the "**Maximum Restoration Period**"), Landlord may, in such notice, elect to terminate this Lease as of the date that is 75 days after the date of discovery of such damage or destruction; provided, however, that notwithstanding Landlord's election to restore, Tenant may elect to terminate this Lease by written notice to Landlord delivered within 5 business days of receipt of a notice from Landlord estimating a Restoration Period for the Premises longer than the Maximum Restoration Period. Unless either Landlord or Tenant so elects to terminate this Lease, Landlord shall, subject to receipt of sufficient insurance proceeds (with any deductible to be treated as a current Operating Expense), promptly restore the Premises (excluding the improvements installed by Tenant or by Landlord and paid for by Tenant), subject to delays arising from the collection of insurance proceeds, from Force Majeure events or as needed to obtain any license, clearance or other authorization of any kind required to enter into and restore the Premises issued by any Governmental Authority having jurisdiction over the use, storage, handling, treatment, generation, release, disposal, removal or remediation of Hazardous Materials (as defined in Section 30) in, on or about the Premises (collectively referred to herein as "**Hazardous Materials Clearances**")**;** provided, however, that if repair or restoration of the Premises is not substantially complete as of the end of the Maximum Restoration Period or, if longer, the Restoration Period, Landlord may, in its sole and absolute discretion, elect not to proceed with such repair and restoration, or Tenant may by written notice to Landlord delivered within 10 business days of the expiration of the Maximum Restoration Period or, if longer, the Restoration Period, elect to terminate this Lease, in which event Landlord shall be relieved of its obligation to make such repairs or restoration and this Lease shall terminate as of the date that is 75 days after the later of: (i) discovery of such damage or destruction, or (ii) the date all required Hazardous Materials Clearances are obtained, but Landlord shall retain any Rent paid and the right to any Rent payable by Tenant prior to such election by Landlord or Tenant.

After the repairs and/or restoration required to be done by Landlord to the Premises have been completed, Tenant, at its expense, shall promptly perform, subject to delays arising from the collection of insurance proceeds, from Force Majeure (as defined in Section 34) events or to obtain Hazardous Material Clearances, all repairs or restoration of Tenant's property necessary for the conduct of Tenant's business at the Premises and any improvements or Alterations to the Premises installed by Tenant and shall promptly re-enter the Premises and commence doing business in accordance with this Lease. Notwithstanding the foregoing, either Landlord or Tenant may terminate this Lease upon written notice to the other if the Premises are damaged during the last year of the Term and Landlord reasonably estimates that it will take more than 2 months to repair such damage; provided, however, that such notice is delivered within 10 business days after the date that Landlord provides Tenant with written notice of the estimated Restoration Period. Notwithstanding anything to the contrary contained herein, Landlord shall also have the right to terminate this Lease if insurance proceeds are not available for such restoration. Tenant shall have the right to terminate this Lease if insurance proceeds are not available for such restoration and Landlord does not otherwise elect to proceed with the restoration. Rent shall be abated from the date all required Hazardous Material Clearances are obtained until the Premises are repaired and restored, in the proportion which the area

of the Premises, if any, which is not usable by Tenant bears to the total area of the Premises, unless Landlord provides Tenant with other space during the period of repair that is suitable for the temporary conduct of Tenant's business. In the event that no Hazardous Material Clearances are required to be obtained by Tenant with respect to the Premises, rent abatement shall commence on the date of discovery of the damage or destruction. Such abatement shall be the sole remedy of Tenant, and except as provided in this Section 18, Tenant waives any right to terminate the Lease by reason of damage or casualty loss.

The provisions of this Lease, including this Section 18. 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, or any other portion of the Project, and any statute or regulation which is now or may hereafter be in effect shall have no application to this Lease or any damage or destruction to all or any part of the Premises or any other portion of the Project, the parties hereto expressly agreeing that this Section 18 sets forth their entire understanding and agreement with respect to such matters.

19. **Condemnation**. If the whole or any material part of the Premises or the Project is taken for any public or quasi-public use under governmental law, ordinance, or regulation, or by right of eminent domain, or by private purchase in lieu thereof (a "**Taking**" or "**Taken**"), and the Taking would in Landlord's reasonable judgment, materially interfere with or impair Landlord's ownership or operation of the Project or would in the reasonable judgment of Landlord and Tenant either prevent or materially interfere with Tenant's use of the Premises or the parking spaces allocated to Tenant pursuant to Section 10 (as resolved, if the parties are unable to agree, by arbitration by a single arbitrator with the qualifications and experience appropriate to resolve the matter and appointed pursuant to and acting in accordance with the rules of the American Arbitration Association), then upon written notice by Landlord or Tenant to the other this Lease shall terminate and Rent shall be apportioned as of said date. If part of the Premises or the parking spaces allocated to Tenant pursuant to Section 10 shall be Taken, and this Lease is not terminated as provided above, Landlord shall promptly restore the Premises and the Project as nearly as is commercially reasonable under the circumstances to their condition prior to such partial Taking and the rentable square footage of the Building, the rentable square footage of the Premises, Tenant's Share of Operating Expenses and the Rent payable hereunder during the unexpired Term shall be reduced to such extent as may be fair and reasonable under the circumstances. Upon any such Taking, Landlord shall be entitled to receive the entire price or award from any such Taking without any payment to Tenant, and Tenant hereby assigns to Landlord Tenant's interest, if any, in such award. Tenant shall have the right, to the extent that same shall not diminish Landlord's award, to make a separate claim against the condemning authority (but not Landlord) for such compensation as may be separately awarded or recoverable by Tenant for moving expenses and damage to Tenant's trade fixtures, if a separate award for such items is made to Tenant. Tenant hereby waives any and all rights it might otherwise have pursuant to any provision of state law to terminate this Lease upon a partial Taking of the Premises or the Project.

20. **Events of Default**. Each of the following events shall be a default ("**Default**") by Tenant under this Lease:

(a) **Payment Defaults**. Tenant shall fall to pay any installment of Rent or any other payment hereunder when due; provided, however, that Landlord will give Tenant notice and an opportunity to cure any failure to pay Rent (prior to such failure constituting a Default under the Lease) within 5 days of any such notice not more than once in any 12 month period and Tenant agrees that such notice shall be in lieu of and not in addition to, or shall be deemed to be, any notice required by law.

(b) **Insurance**. Any insurance required to be maintained by Tenant pursuant to this Lease shall be canceled or terminated or shall expire or shall be reduced or materially changed, or Landlord shall receive a notice of nonrenewal of any such insurance and Tenant shall fail to obtain replacement insurance at least 10 days before the expiration of the current coverage.

(c) **Abandonment**. Tenant shall abandon the Premises. Tenant shall not be deemed to have abandoned the Premises if Tenant provides Landlord with reasonable advance notice prior to vacating and, at the time of vacating the Premises, (i) Tenant completes Tenant's obligations under the Surrender Plan in compliance with Section 28. (ii) Tenant has obtained the release of the Premises of all Hazardous Materials Clearances and the Premises are free from any residual impact from the Tenant HazMat Operations and provides reasonably detailed documentation to Landlord confirming such matters, (iii) Tenant has made reasonable arrangements with Landlord for the security of the Premises for the balance of the Term, and (iv) Tenant continues during the balance of the Term to satisfy and perform all of Tenant's obligations under this Lease as they come due.

(d) **Improper Transfer**. Tenant shall assign, sublease or otherwise transfer or attempt to transfer all or any portion of Tenant's interest in this Lease or the Premises except as expressly permitted herein, or Tenant's Interest in this Lease shall be attached, executed upon, or otherwise judicially seized and such action is not released within 90 days of the action.

(e) **Liens**. Tenant shall fail to discharge or otherwise obtain the release of any lien placed upon the Premises in violation of this Lease within 10 days after Tenant receives notice of any such lien is filed against the Premises.

(f) **Insolvency Events**. Tenant or any guarantor or surety of Tenant's obligations hereunder shall: (A) make a general assignment for the benefit of creditors; (B) commence any case, proceeding or other action seeking to have an order for relief entered on its behalf as a debtor or to adjudicate it a bankrupt or insolvent, or seeking reorganization, arrangement, adjustment, liquidation, dissolution or composition of it or its debts or seeking appointment of a receiver, trustee, custodian or other similar official for it or for all or of any substantial part of its property (collectively a "**Proceeding for Relief);** (C) become the subject of any Proceeding for Relief which is not dismissed within 90 days of its filing or entry; or (D) die or suffer a legal disability (if Tenant, guarantor, or surety is an individual) or be dissolved or otherwise fail to maintain its legal existence (if Tenant, guarantor or surety is a corporation, partnership or other entity).

(g) **Estoppel Certificate or Subordination Agreement**. Tenant fails to execute any document required from Tenant under Sections 23 or 27 within 5 business days after a second notice requesting such document.

(h) **Other Defaults**. Tenant shall fail to comply with any provision of this Lease other than those specifically referred to in this Section 20. and, except as otherwise expressly provided herein, such failure shall continue for a period of 30 days after written notice thereof from Landlord to Tenant.

Any notice given under Section 20(h) hereof shall: (i) specify the alleged default, (ii) demand that Tenant cure such default, (iii) be in lieu of, and not in addition to, or shall be deemed to be, any notice required under any provision of applicable law, and (iv) not be deemed a forfeiture or a termination of this Lease unless Landlord elects otherwise in such notice; provided that if the nature of Tenant's default pursuant to Section 20(h) is such that it cannot be cured by the payment of money and reasonably requires more than 30 days to cure, then Tenant shall not be deemed to be in default if Tenant commences such cure within said 30 day period and thereafter diligently prosecutes the same to completion; provided, however, that such cure shall be completed no later than 60 days from the date of Landlord's notice.

21. **Landlord's Remedies.**

(a) **Payment By Landlord; Interest.** Upon a Default by Tenant hereunder, Landlord may, without waiving or releasing any obligation of Tenant hereunder, make such payment or perform such act. All sums so paid or incurred by Landlord, together with interest thereon, from the date such sums were paid or incurred, at the annual rate equal to 12% per annum or the highest rate permitted by law (the "**Default Rate**"), whichever is less, shall be payable to Landlord on demand as Additional Rent. Nothing herein shall be construed to create or impose a duty on Landlord to mitigate any damages resulting from Tenant's Default hereunder.

(b) **Late Payment Rent.** Late payment by Tenant to Landlord of Rent and other sums due will cause Landlord to incur costs not contemplated by this Lease, the exact amount of which will be extremely difficult and impracticable to ascertain. Such costs include, but are not limited to, processing and accounting charges and late charges which may be imposed on Landlord under any Mortgage covering the Premises. Therefore, if any installment of Rent due from Tenant is not received by Landlord within 5 days after the date such payment is due, Tenant shall pay to Landlord an additional sum equal to 6% of the overdue Rent as a late charge. The parties agree that this late charge represents a fair and reasonable estimate of the costs Landlord will incur by reason of late payment by Tenant. In addition to the late charge, Rent not paid when due shall bear interest at the Default Rate from the 5th day after the date due until paid.

(c) **Remedies.** Upon the occurrence of a Default, Landlord, at its option, without further notice or demand to Tenant, shall have in addition to all other rights and remedies provided in this Lease, at law or in equity, the option to pursue any one or more of the following remedies, each and all of which shall be cumulative and nonexclusive, without any notice or demand whatsoever.

(i) Terminate this Lease, or at Landlord's option, Tenant's right to possession only, in which event Tenant shall immediately surrender the Premises to Landlord, and if Tenant fails to do so, Landlord may, without prejudice to any other remedy which it may have for possession or arrearages in rent, enter upon and take possession of the Premises and expel or remove Tenant and any other person who may be occupying the Premises or any part thereof, without being liable for prosecution or any claim or damages therefor;

(ii) Upon any termination of this Lease, whether pursuant to the foregoing Section 21(c)(i) or otherwise, Landlord may recover from Tenant the following:

(A) The worth at the time of award of any unpaid rent which has been earned at the time of such termination; plus

(B) 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 rental loss that Tenant proves could have been reasonably avoided; plus

(C) 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 rental loss that Tenant proves could have been reasonably avoided; plus

(D) Any other amount necessary to compensate Landlord for all the detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, specifically including, but not limited to, brokerage commissions and advertising expenses incurred, expenses of remodeling the Premises or any portion thereof for a new tenant, whether for the same or a different use, and any special concessions made to obtain a new tenant; and

(E) At Landlord's election, such other amounts in addition to or in lieu of the foregoing as may be permitted from time to time by applicable law.

The term "**rent**" as used in this Section 21 shall be deemed to be and to mean all sums of every nature required to be paid by Tenant pursuant to the terms of this Lease, whether to Landlord or to others. As used in Sections 21(c)(ii)(A) and (B), above, the "**worth at the time of award**" shall be computed by allowing interest at the Default Rate. As used in Section 21(c)(ii)(C) above, the "**worth at the time of award**" 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 1%.

(iii) Landlord may continue this Lease in effect after Tenant's Default and recover rent as it becomes due (Landlord and Tenant hereby agreeing that Tenant has the right to sublet or assign hereunder, subject only to reasonable limitations). Accordingly, if Landlord does not elect to terminate this Lease following a Default by Tenant, Landlord may, from time to time, without terminating this Lease, enforce all of its rights and remedies hereunder, including the right to recover all Rent as it becomes due.

(iv) Whether or not Landlord elects to terminate this Lease following a Default by Tenant, Landlord shall have the right to terminate any and all subleases, licenses, concessions or other consensual arrangements for possession entered into by Tenant and affecting the Premises or may, in Landlord's sole discretion, succeed to Tenant's interest in such subleases, licenses, concessions or arrangements. Upon Landlord's election to succeed to Tenant's interest in any such subleases, licenses, concessions or arrangements, Tenant shall, as of the date of notice by Landlord of such election, have no further right to or interest in the rent or other consideration receivable thereunder.

(v) Independent of the exercise of any other remedy of Landlord hereunder or under applicable law, Landlord may conduct an environmental test of the Premises as generally described in Section 30(d) hereof, at Tenant's expense, provided that Tenant shall not be required to pay for such tests more than once in any 12 month period, unless contamination has occurred for which Tenant is responsible under this Section 30.

(d) **Effect of Exercise.** Exercise by Landlord of any remedies hereunder or otherwise available shall not be deemed to be an acceptance of surrender of the Premises and/or a termination of this Lease by Landlord, it being understood that such surrender and/or termination can be effected only by the express written agreement of Landlord and Tenant. Any law, usage, or custom to the contrary notwithstanding, Landlord shall have the right at all times to enforce the provisions of this Lease in strict accordance with the terms hereof; and the failure of Landlord at any time to enforce its rights under this Lease strictly in accordance with same shall not be construed as having created a custom in any way or manner contrary to the specific terms, provisions, and covenants of this Lease or as having modified the same and shall not be deemed a waiver of Landlord's right to enforce one or more of its rights in connection with any subsequent default. A receipt by Landlord of Rent or other payment with knowledge of the breach of any covenant hereof shall not be deemed a waiver of such breach, and no waiver by Landlord of any provision of this Lease shall be deemed to have been made unless expressed in writing and signed by Landlord. To the greatest extent permitted by law, Tenant waives the service of notice of Landlord's intention to re-enter, re-take or otherwise obtain possession of the Premises as provided in any statute, or to institute legal proceedings to that end, and also waives all right of redemption in case Tenant shall be dispossessed by a judgment or by warrant of any court or judge. Any reletting of the Premises or any portion thereof shall be on such terms and conditions as Landlord in its sole discretion may determine. Landlord shall not be liable for, nor shall Tenant's obligations hereunder be diminished because of, Landlord's failure to relet the Premises or collect rent due in respect of such reletting or otherwise to mitigate any damages arising by reason of Tenant's Default.

22. **Assignment and Subletting.**

(a) **General Prohibition.** Without Landlord's prior written consent subject to and on the conditions described in this Section 22, Tenant shall not, directly or indirectly, voluntarily or by operation of law, assign this Lease or sublease the Premises or any part thereof or mortgage, pledge, or hypothecate its leasehold interest or grant any concession or license within the Premises, and any attempt to do any of the foregoing shall be void and of no effect. If Tenant is a corporation, partnership or limited liability company, the shares or other ownership interests thereof which are not actively traded upon a stock exchange or in the over-the-counter market, a transfer or series of transfers whereby 50% or more of the issued and outstanding shares or other ownership interests of such corporation are, or voting control is, transferred (but excepting transfers upon deaths of individual owners) from a person or persons or entity or entities which were owners thereof at time of execution of this Lease to persons or entities who were not owners of shares or other ownership interests of the corporation, partnership or limited liability company at time of execution of this Lease, shall be deemed an assignment of this Lease requiring the consent of Landlord as provided in this Section 22.

(b) **Permitted Transfers.** If Tenant desires to assign, sublease, hypothecate or otherwise transfer this Lease or sublet the Premises, other than pursuant to a Permitted Assignment (as defined below), then at least 10 business days, but not more than 60 business days, before the date Tenant desires the assignment or sublease to be effective (the "**Assignment Date**"), Tenant shall give Landlord a notice (the "**Assignment Notice**") containing such information about the proposed assignee or sublessee, including the proposed use of the Premises and any Hazardous Materials proposed to be used, stored handled, treated, generated in or released or disposed of from the Premises, the Assignment Date, any relationship between Tenant and the proposed assignee or sublessee, and all material terms and conditions of the proposed assignment or sublease, including a copy of any proposed assignment or sublease in its final form, and such other information as Landlord may deem reasonably necessary or appropriate to its consideration whether to

grant its consent. Landlord may, by giving written notice to Tenant within 10 business days after receipt of the Assignment Notice: (i) grant such consent (provided that Landlord shall further have the right to review and approve or disapprove, in its reasonable discretion, the proposed form of sublease prior to the effective date of any such subletting), (ii) refuse such consent, in its reasonable discretion; or (iii) terminate this Lease with respect to the space described in the Assignment Notice as of the Assignment Date (an "**Assignment Termination**"). Among other reasons, it shall be reasonable for Landlord to withhold its consent in any of these Instances: (1) the proposed assignee or subtenant is a governmental agency; (2) in Landlord's reasonable judgment, the use of the Premises by the proposed assignee or subtenant would entail any alterations that would materially lessen the value of the leasehold improvements in the Premises, or would require increased services by Landlord; (3) in Landlord's reasonable judgment, the proposed assignee or subtenant is engaged in areas of scientific research or other business concerns at the Premises that are controversial such that they may (i) attract or cause negative publicity for or about the Building or the Project, (ii) negatively affect the reputation of the Building, the Project or Landlord, (iii) attract protestors to the Building or the Project, or (iv) lessen the attractiveness of the Building or the Project to any tenants or prospective tenants, purchasers or lenders; (4) in Landlord's reasonable judgment, the proposed assignee or subtenant lacks the creditworthiness to support the financial obligations it will incur under the proposed assignment or sublease; (5) in Landlord's reasonable judgment, the character, reputation, or business of the proposed assignee or subtenant is inconsistent with the desired tenant-mix or the quality of other tenancies in the Project or is inconsistent with the type and quality of the nature of the Building; (6) Landlord has received from any prior landlord to the proposed assignee or subtenant a negative report concerning such prior landlord's experience with the proposed assignee or subtenant's failure to comply with its lease obligations; (7) Landlord has experienced previous defaults by or is in litigation with the proposed assignee or subtenant; (8) the use of the Premises by the proposed assignee or subtenant will violate any applicable Legal Requirement; (9) the proposed assignee or subtenant, or any entity that, directly or indirectly, controls, is controlled by, or is under common control with the proposed assignee or subtenant, is then an occupant of the Project; (10) the proposed assignee or subtenant is an entity with whom Landlord is negotiating to lease space in the Project; or (11) the assignment or sublease is prohibited by Landlord's lender. Landlord shall use reasonable efforts to respond to each Assignment Notice within 10 business days after Landlord's receipt of such Assignment Notice along with all documentation required to be delivered hereunder. If Landlord fails to respond within such 10 business day period, then Tenant shall provide Landlord with a second written notice stating in bold and all caps 12 point font or larger that Landlord's failure to respond to Tenant's Assignment Notice within 3 business days after Landlord's receipt of the second notice shall be deemed approval by Landlord, and if Landlord does not respond within such 3 business day period, then Landlord shall be deemed to have approved such Assignment. If Landlord delivers notice of its election to exercise an Assignment Termination, Tenant shall have the right to withdraw such Assignment Notice by written notice to Landlord of such election within 5 business days after Landlord's notice electing to exercise the Assignment Termination. If Tenant withdraws such Assignment Notice, this Lease shall continue in full force and effect. If Tenant does not withdraw such Assignment Notice, this Lease, and the term and estate herein granted, shall terminate as of the Assignment Date with respect to the space described in such Assignment Notice. No failure of Landlord to exercise any such option to terminate this Lease, or to deliver a timely notice in response to the Assignment Notice, shall be deemed to be Landlord's consent to the proposed assignment, sublease or other transfer. Tenant shall pay to Landlord a fee equal to Two Thousand Five Hundred Dollars ($2,500) in connection with its consideration of any Assignment Notice and/or its preparation or review of any consent documents. Notwithstanding the foregoing, Landlord's consent to an assignment of this Lease or a subletting of any portion

of the Premises to any entity controlling, controlled by or under common control with Tenant (a "**Control Permitted Assignment**") shall not be required, provided that Landlord shall have the right to reasonably approve the form of any such sublease or assignment. In addition, Tenant shall have the right to assign this Lease, upon 30 days prior written notice to Landlord but without obtaining Landlord's prior written consent, to a corporation or other entity which is a successor-in-interest to Tenant, by way of merger, consolidation or corporate reorganization, or by the purchase of all or substantially all of the assets or the ownership interests of Tenant provided that (i) such merger or consolidation, or such acquisition or assumption, as the case may be, is for a good business purpose and not principally for the purpose of transferring the Lease, and (ii) the net worth (as determined in accordance with generally accepted accounting principles ("**GAAP**")) of the assignee is not less than the greater of the net worth (as determined in accordance with GAAP) of Tenant as of (A) the Commencement Date, or (B) as of the date of Tenant's most current quarterly or annual financial statements, and (iii) such assignee shall agree in writing to assume all of the terms, covenants and conditions of this Lease (a "**Corporate Permitted Assignment**"). Control Permitted Assignments and Corporate Permitted Assignments are hereinafter referred to as "**Permitted Assignments**."

(c) **Additional Conditions.** As a condition to any such assignment or subletting, whether or not Landlord's consent is required, Landlord may require:

(i) that any assignee or subtenant agree, in writing at the time of such assignment or subletting, that if Landlord gives such party notice that Tenant is in Default under this Lease, such party shall thereafter make all payments otherwise due Tenant directly to Landlord, which payments will be received by Landlord without any liability except to credit such payment against those due under the Lease, and any such third party shall agree to attorn to Landlord or its successors and assigns should this Lease be terminated for any reason; provided, however, in no event shall Landlord or its successors or assigns be obligated to accept such attornment; and

(ii) A list of Hazardous Materials, certified by the proposed assignee or sublessee to be true and correct, which the proposed assignee or sublessee intends to use, store, handle, treat, generate in or release or dispose of from the Premises, together with copies of all documents relating to such use, storage, handling, treatment, generation, release or disposal of Hazardous Materials by the proposed assignee or subtenant in the Premises or on the Project, prior to the proposed assignment or subletting, including, without limitation: permits; approvals; reports and correspondence; storage and management plans; plans relating to the installation of any storage tanks to be installed in or under the Project (provided, said installation of tanks shall only be permitted after Landlord has given its written consent to do so, which consent may be withheld in Landlord's sole and absolute discretion); and all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks. Neither Tenant nor any such proposed assignee or subtenant is required, however, to provide Landlord with any portion(s) of the such documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities.

(d) **No Release of Tenant, Sharing of Excess Rents.** Notwithstanding any assignment or subletting, Tenant and any guarantor or surety of Tenant's obligations under this Lease shall at all times remain fully and primarily responsible and liable for the payment of Rent and for compliance with all of Tenant's other obligations under this Lease. If the Rent due and payable by a sublessee

or assignee (or a combination of the rental payable under such sublease or assignment plus any bonus or other consideration therefor or incident thereto in any form) exceeds the sum of the rental payable under this Lease, (excluding however, any Rent payable under this Section) and actual and reasonable brokerage fees, legal costs, any design or construction fees or other reasonable and customary concessions directly related to and required pursuant to the terms of any such sublease) ("**Excess Rent**"), then Tenant shall be bound and obligated to pay Landlord as Additional Rent hereunder 50% of such Excess Rent within 10 days following receipt thereof by Tenant. If Tenant shall sublet the Premises or any part thereof, Tenant hereby immediately and irrevocably assigns to Landlord, as security for Tenant's obligations under this Lease, all rent from any such subletting, and Landlord as assignee and as attorney-in-fact for Tenant, or a receiver for Tenant appointed on Landlord's application, may collect such rent and apply it toward Tenant's obligations under this Lease; except that, until the occurrence of a Default, Tenant shall have the right to collect such rent.

(e) **No Waiver.** The consent by Landlord to an assignment or subletting shall not relieve Tenant or any assignees of this Lease or any sublessees of the Premises from obtaining the consent of Landlord to any further assignment or subletting nor shall it release Tenant or any assignee or sublessee of Tenant from full and primary liability under the Lease. The acceptance of Rent hereunder, or the acceptance of performance of any other term, covenant, or condition thereof, from any other person or entity shall not be deemed to be a waiver of any of the provisions of this Lease or a consent to any subletting, assignment or other transfer of the Premises.

(f) **Prior Conduct of Proposed Transferee.** Notwithstanding any other provision of this Section 22, other than in connection with a Permitted Assignment, if (i) the proposed assignee or sublessee of Tenant has been required by any prior landlord, lender or Governmental Authority to take remedial action in connection with Hazardous Materials contaminating a property, where the contamination resulted from such party's action or use of the property in question, (ii) the proposed assignee or sublessee is subject to an enforcement order issued by any Governmental Authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority), or (iii) because of the existence of a pre-existing environmental condition in the vicinity of or underlying the Project, the risk that Landlord would be targeted as a responsible party in connection with the remediation of such pre-existing environmental condition would be materially increased or exacerbated by the proposed use of Hazardous Materials by such proposed assignee or sublessee, Landlord shall have the absolute right to refuse to consent to any assignment or subletting to any such party.

23. **Estoppel Certificate.** Tenant shall, within 10 business days of written notice from Landlord, execute, acknowledge and deliver a statement in writing in any form reasonably requested by a proposed lender or purchaser, (i) certifying that this Lease is unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying that this Lease as so modified is in full force and effect) and the dates to which the rental and other charges are paid in advance, if any, (ii) acknowledging that there are not any uncured defaults on the part of Landlord hereunder, or specifying such defaults if any are claimed, and (iii) setting forth such further information with respect to the status of this Lease or the Premises as may be requested thereon. Any such statement may be relied upon by any prospective purchaser or encumbrancer of all or any portion of the real property of which the Premises are a part. Tenant's failure to deliver such statement within five (5) business days following Landlord's second request therefor shall, at the option of Landlord, constitute a Default under this Lease, and, in any event, shall be conclusive upon Tenant that the Lease is in full

force and effect and without modification except as may be represented by Landlord in any certificate prepared by Landlord and delivered to Tenant for execution.

Upon request by Tenant, Landlord will similarly execute an estoppel certificate: (i) certifying that this Lease is unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying that this Lease as so modified is in full force and effect) and the dates to which the rental and other charges are paid in advanced, if any, (ii) acknowledging that there are not, to Landlord's knowledge, any uncured defaults on the part of Tenant hereunder, or specifying such defaults if any are claimed and (iii) setting forth such further information with respect to the status of this Lease or the Premises as may be reasonably requested thereon.

24. **Quiet Enjoyment.** So long as Tenant is not in Default under this Lease, Tenant shall, subject to the terms of this Lease, at all times during the Term, have peaceful and quiet enjoyment of the Premises against any person claiming by, through or under Landlord.

25. **Prorations.** All prorations required or permitted to be made hereunder shall be made on the basis of a 360 day year and 30 day months.

26. **Rules and Regulations.** Tenant shall, at all times during the Term and any extension thereof, comply with all reasonable non-discriminatory rules and regulations at any time or from time to time established by Landlord covering use of the Premises and the Project. The current rules and regulations are attached hereto as Exhibit E. If there is any conflict between said rules and regulations and other provisions of this Lease, the terms and provisions of this Lease shall control. Landlord shall not have any liability or obligation for the breach of any rules or regulations by other tenants In the Project and shall not enforce such rules and regulations in a discriminatory manner.

27. **Subordination.** This Lease and Tenant's interest and rights hereunder are hereby made and shall be subject and subordinate at all times to the lien of any Mortgage now existing or hereafter created on or against the Project or the Premises, and all amendments, restatements, renewals, modifications, consolidations, refinancing, assignments and extensions thereof, without the necessity of any further instrument or act on the part of Tenant; provided, however that so long as there is no Default hereunder, Tenant's right to possession of the Premises shall not be disturbed by the Holder of any such Mortgage. Tenant agrees, at the election of the Holder of any such Mortgage, to attorn to any such Holder. Tenant agrees upon demand to execute, acknowledge and deliver such instruments, confirming such subordination, and such instruments of attornment as shall be requested by any such Holder, provided any such instruments contain appropriate non-disturbance provisions assuring Tenant's quiet enjoyment of the Premises as set forth in Section 24 hereof. Notwithstanding the foregoing, any such Holder may at any time subordinate its Mortgage to this Lease, without Tenant's consent, by notice in writing to Tenant, and thereupon this Lease shall be deemed prior to such Mortgage without regard to their respective dates of execution, delivery or recording and in that event such Holder shall have the same rights with respect to this Lease as though this Lease had been executed prior to the execution, delivery and recording of such Mortgage and had been assigned to such Holder. The term "**Mortgage**" whenever used in this Lease shall be deemed to include deeds of trust, security assignments and any other encumbrances, and any reference to the "**Holder**" of a Mortgage shall be deemed to include the beneficiary under a deed of trust. As of the date of this Lease, there is no existing Mortgage encumbering the Project.

Upon request of Tenant, Landlord shall deliver to Tenant an agreement ("**SNDA**") from any future Holder of a Mortgage on the Project, if any, that such Holder will recognize and not disturb Tenant's right of possession pursuant to this Lease provided that Tenant is not in Default under this Lease. The SNDA shall be on the form proscribed by the Holder and Tenant shall pay the Holder's fees and costs in connection with obtaining such SNDA; provided, however, that Landlord shall request that Holder make any changes to the SNDA requested by Tenant. Landlord's failure to cause the Holder to enter into the SNDA with Tenant (or make any of the changes requested by Tenant) shall not be a default by Landlord under this Lease.

28. **Surrender.** Upon the expiration of the Term or earlier termination of Tenant's right of possession, Tenant shall surrender the Premises to Landlord in the same condition as received, subject to any Alterations or Installations permitted by Landlord to remain in the Premises, free of Hazardous Materials brought upon, kept, used, stored, handled, treated, generated in, or released or disposed of from, the Premises by any person other than a Landlord Party (collectively, "**Tenant HazMat Operations**") and released of all Hazardous Materials Clearances, broom clean, ordinary wear and tear and casualty loss and condemnation covered by Sections 18 and 19 excepted. At least 3 months prior to the surrender of the Premises, Tenant shall deliver to Landlord a narrative description of the actions proposed (or required by any Governmental Authority) to be taken by Tenant in order to surrender the Premises (including any Installations permitted by Landlord to remain in the Premises) at the expiration or earlier termination of the Term, free from any residual impact from the Tenant HazMat Operations and otherwise released for unrestricted use and occupancy (the "**Surrender Plan**"). Such Surrender Plan shall be accompanied by a current listing of (i) all Hazardous Materials licenses and permits held by or on behalf of any Tenant Party with respect to the Premises, and (ii) all Hazardous Materials used, stored, handled, treated, generated, released or disposed of from the Premises, and shall be subject to the review and approval of Landlord's environmental consultant. In connection with the review and approval of the Surrender Plan, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such additional non-proprietary information concerning Tenant HazMat Operations as Landlord shall request. On or before such surrender, Tenant shall deliver to Landlord evidence that the approved Surrender Plan shall have been satisfactorily completed and Landlord shall have the right, subject to reimbursement at Tenant's expense as set forth below, to cause Landlord's environmental consultant to inspect the Premises and perform such additional procedures as may be deemed reasonably necessary to confirm that the Premises are, as of the effective date of such surrender or early termination of the Lease, free from any residual impact from Tenant HazMat Operations. Tenant shall reimburse Landlord, as Additional Rent, for the actual out-of pocket expense incurred by Landlord for Landlord's environmental consultant to review and approve the Surrender Plan and to visit the Premises and verify satisfactory completion of the same, which cost shall not exceed $2,500. Landlord shall have the unrestricted right to deliver such Surrender Plan and any report by Landlord's environmental consultant with respect to the surrender of the Premises to third parties.

If Tenant shall fail to prepare or submit a Surrender Plan approved by Landlord, or if Tenant shall fail to complete the approved Surrender Plan, or if such Surrender Plan, whether or not approved by Landlord, shall fail to adequately address any residual effect of Tenant HazMat Operations in, on or about the Premises, Landlord shall have the right to take such actions as Landlord may deem reasonable or appropriate to assure that the Premises and the Project are surrendered free from any residual impact from Tenant HazMat Operations, the cost of which actions shall be reimbursed by Tenant as Additional Rent, without regard to the limitation set forth in the first paragraph of this Section 28.

Tenant shall immediately return to Landlord all keys and/or access cards to parking, the Project, restrooms or all or any portion of the Premises furnished to or otherwise procured by Tenant. If any such access card or key is lost, Tenant shall pay to Landlord, at Landlord's election, either the cost of replacing such lost access card or key or the cost of reprogramming the access security system in which such access card was used or changing the lock or locks opened by such lost key. Any Tenant's Property, Alterations and property not so removed by Tenant as permitted or required herein shall be deemed abandoned and may be stored, removed, and disposed of by Landlord at Tenant's expense, and Tenant waives all claims against Landlord for any damages resulting from Landlord's retention and/or disposition of such property. All obligations of Tenant or Landlord hereunder not fully performed as of the termination of the Term, including the obligations of Tenant under Section 30 hereof, shall survive the expiration or earlier termination of the Term, including, without limitation, indemnity obligations, payment obligations with respect to Rent and obligations concerning the condition and repair of the Premises.

29. **Waiver of Jury Trial.** TO THE EXTENT PERMITTED BY LAW, TENANT AND LANDLORD WAIVE ANY RIGHT TO TRIAL BY JURY OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE, BETWEEN LANDLORD AND TENANT ARISING OUT OF THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS RELATED HERETO.

30. **Environmental Requirements.**

(a) **Prohibition/Compliance/lndemnity.** Tenant shall not cause or permit any Hazardous Materials (as hereinafter defined) to be brought upon, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises or the Project in violation of applicable Environmental Requirements (as hereinafter defined) by Tenant or any Tenant Party. If Tenant breaches the obligation stated in the preceding sentence, or if the presence of Hazardous Materials in the Premises during the Term or any holding over results In contamination of the Premises, the Project or any adjacent property or if contamination of the Premises, the Project or any adjacent property by Hazardous Materials brought into, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises by anyone other than Landlord and Landlord's employees, agents and contractors otherwise occurs during the Term or any holding over, Tenant hereby indemnifies and shall defend and hold Landlord, its officers, directors, employees, agents and contractors harmless from any and all actions (including, without limitation, remedial or enforcement actions of any kind, administrative or judicial proceedings, and orders or judgments arising out of or resulting therefrom), costs, claims, damages (including, without limitation, punitive damages and damages based upon diminution in value of the Premises or the Project, or the loss of, or restriction on, use of the Premises or any portion of the Project), expenses (including, without limitation, attorneys', consultants' and experts' fees, court costs and amounts paid in settlement of any claims or actions), fines, forfeitures or other civil, administrative or criminal penalties, injunctive or other relief (whether or not based upon personal injury, property damage, or contamination of, or adverse effects upon, the environment, water tables or natural resources), liabilities or losses (collectively, "**Environmental Claims**") which arise during or after the Term as a result of such contamination. This indemnification of Landlord by Tenant includes, without limitation, costs incurred in connection with any investigation of site conditions or any cleanup, treatment, remedial, removal, or restoration work required by any federal, state or local Governmental Authority because of Hazardous Materials present in the air, soil or ground water above, on, or under the Premises. Without limiting the foregoing, if the presence of any Hazardous Materials on the

Premises, the Building, the Project or any adjacent property caused or permitted by Tenant or any Tenant Party results in any contamination of the Premises, the Building, the Project or any adjacent property, Tenant shall promptly take all actions at its sole expense and in accordance with applicable Environmental Requirements as are necessary to return the Premises, the Building, the Project or any adjacent property to the condition existing prior to the time of such contamination, provided that Landlord's approval of such action shall first be obtained, which approval shall not unreasonably be withheld so long as such actions would not potentially have any material adverse long-term or short-term effect on the Premises, the Building or the Project. Notwithstanding anything to the contrary contained in Section 28 and/or this Section 30. Tenant shall not be responsible for, and the indemnification and hold harmless obligation set forth in this paragraph shall not apply to (i) contamination in the Premises or the Project which Tenant can prove to Landlord's reasonable satisfaction existed in the Premises or the Project immediately prior to the date of this Lease, or (ii) the presence of any Hazardous Materials in the Premises or the Project which Tenant can prove to Landlord's reasonable satisfaction migrated from outside of the Premises into the Premises or outside the Project into the Project, except to the extent in either case, the presence of such Hazardous Materials (x) is the result of a breach by Tenant of any of its obligations under this Lease, or (y) was caused, contributed to or exacerbated by Tenant or any Tenant Party.

(b) **Business.** Landlord acknowledges that it is not the intent of this Section 30 to prohibit Tenant from using the Premises for the Permitted Use. Tenant may operate its business according to prudent industry practices so long as the use or presence of Hazardous Materials is strictly and properly monitored according to all then applicable Environmental Requirements. As a material inducement to Landlord to allow Tenant to use Hazardous Materials in connection with its business, Tenant agrees to deliver to Landlord prior to the Commencement Date a list identifying each type of Hazardous Materials to be brought upon, kept, used, stored, handled, treated, generated on, or released or disposed of from, the Premises and setting forth any and all governmental approvals or permits required in connection with the presence, use, storage, handling, treatment, generation, release or disposal of such Hazardous Materials on or from the Premises ("**Hazardous Materials List**"). Upon Landlord's request, or any time that Tenant is required to deliver a Hazardous Materials List to any Governmental Authority (e.g., the fire department) in connection with Tenant's use or occupancy of the Premises, Tenant shall deliver to Landlord a copy of such Hazardous Materials List. Tenant shall deliver to Landlord true and correct copies of the following documents (the "**Haz Mat Documents**") relating to the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials prior to the Commencement Date, or if unavailable at that time, concurrent with the receipt from or submission to a Governmental Authority: permits; approvals; reports; storage and management plans, notice of violations of any Legal Requirements; plans relating to the installation of any storage tanks to be installed in or under the Project (provided, said installation of tanks shall only be permitted after Landlord has given Tenant its written consent to do so, which consent may be withheld in Landlord's sole and absolute discretion); all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks Installed in, on or under the Project for the closure of any such tanks; and a Surrender Plan (to the extent surrender in accordance with Section 28 cannot be accomplished in 3 months). Tenant is not required, however, to provide Landlord with any portion(s) of the Haz Mat Documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities. It is not the intent of this Section to provide Landlord with information which could be detrimental to Tenant's business should such information become possessed by Tenant's competitors.

(c) **Tenant Representation and Warranty.** Tenant hereby represents and warrants to Landlord that (i) neither Tenant nor any of its legal predecessors has been required by any prior landlord, lender or Governmental Authority at any time to take remedial action in connection with Hazardous Materials contaminating a property which contamination was permitted by Tenant of such predecessor or resulted from Tenant's or such predecessor's action or use of the property in question, and (ii) Tenant is not subject to any enforcement order issued by any Governmental Authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority). If this representation and warranty is not true as of the date of this lease, Landlord shall have the right to terminate this Lease in Landlord's sole and absolute discretion.

(d) **Testing.** Landlord shall have the right to conduct annual tests of the Premises to determine whether any contamination of the Premises or the Project has occurred as a result of Tenant's use. Tenant shall be required to pay the cost of such annual test of the Premises if there is violation of this Section 30 or if contamination for which Tenant is responsible under this Section 30 is identified; provided, however, that if Tenant conducts its own tests of the Premises using third party contractors and test procedures acceptable to Landlord which tests are certified to Landlord, Landlord shall accept such tests in lieu of the annual tests to be paid for by Tenant. In addition, at any time, and from time to time, prior to the expiration or earlier termination of the Term, Landlord shall have the right to conduct appropriate tests of the Premises and the Project to determine if contamination has occurred as a result of Tenant's use of the Premises. In connection with such testing, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such non-proprietary information concerning the use of Hazardous Materials in or about the Premises by Tenant or any Tenant Party. If contamination has occurred for which Tenant is liable under this Section 30. Tenant shall pay all costs to conduct such tests. If no such contamination is found, Landlord shall pay the costs of such tests (which shall not constitute an Operating Expense). Landlord shall provide Tenant with a copy of all third party, non-confidential reports and tests of the Premises made by or on behalf of Landlord during the Term without representation or warranty and subject to a confidentiality agreement. Tenant shall, at its sole cost and expense, promptly and satisfactorily remediate any environmental conditions identified by such testing in accordance with all Environmental Requirements. Landlord's receipt of or satisfaction with any environmental assessment in no way waives any rights which Landlord may have against Tenant.

(e) **Control Areas.** Tenant shall be allowed to utilize up to its pro rata share of the Hazardous Materials inventory within any control area or zone (located within the Premises), as designated by the applicable building code, for chemical use or storage. As used in the preceding sentence, Tenant's pro rata share of any control areas or zones located within the Premises shall be determined based on the rentable square footage that Tenant leases within the applicable control area or zone. For purposes of example only, if a control area or zone contains 10,000 rentable square feet and 2,000 rentable square feet of a tenant's premises are located within such control area or zone (while such premises as a whole contains 5,000 rentable square feet), the applicable tenant's pro rata share of such control area would be 20%.

(f) **Underground Tanks.** Tenant shall have no right to use or install any underground or other storage tanks at the Project.

(g) **Tenant's Obligations.** Tenant's obligations under this Section 30 shall survive the expiration or earlier termination of the Lease. During any period of time after the expiration or earlier termination of this Lease required by Tenant or Landlord to complete the removal from the Premises of any Hazardous Materials (including, without limitation, the release and termination of any licenses or permits restricting the use of the Premises and the completion of the approved Surrender Plan), Tenant shall continue to pay the full Rent in accordance with this Lease for any portion of the Premises not relet by Landlord in Landlord's sole discretion, which Rent shall be prorated daily.

(h) **Definitions.** As used herein, the term "**Environmental Requirements**" means all applicable present and future statutes, regulations, ordinances, rules, codes, judgments, orders or other similar enactments of any Governmental Authority regulating or relating to health, safety, or environmental conditions on, under, or about the Premises or the Project, or the environment, including without limitation, the following: the Comprehensive Environmental Response, Compensation and Liability Act; the Resource Conservation and Recovery Act; and all state and local counterparts thereto, and any regulations or policies promulgated or issued thereunder. As used herein, the term "**Hazardous Materials**" means and includes any substance, material, waste, pollutant, or contaminant listed or defined as hazardous or toxic, or regulated by reason of its impact or potential impact on humans, animals and/or the environment under any Environmental Requirements, asbestos and petroleum, including crude oil or any fraction thereof, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). As defined in Environmental Requirements, Tenant is and shall be deemed to be the "**operator**" of Tenant's "**facility**" and the "**owner**" of all Hazardous Materials brought on the Premises by Tenant or any Tenant Party, and the wastes, by-products, or residues generated, resulting, or produced therefrom.

31. **Tenant's Remedies/Limitation of Liability.** Landlord shall not be in default hereunder unless Landlord fails to perform any of its obligations hereunder within 30 days after written notice from Tenant specifying such failure (unless such performance will, due to the nature of the obligation, require a period of time in excess of 30 days, then after such period of time as is reasonably necessary). Upon any default by Landlord, Tenant shall give notice by registered or certified mail to any Holder of a Mortgage covering the Premises and to any landlord of any lease of property in or on which the Premises are located and Tenant shall offer such Holder and/or landlord a reasonable opportunity to cure the default, including time to obtain possession of the Project by power of sale or a judicial action if such should prove necessary to effect a cure; provided Landlord shall have furnished to Tenant in writing the names and addresses of all such persons who are to receive such notices. All obligations of Landlord hereunder shall be construed as covenants, not conditions; and, except as may be otherwise expressly provided in this Lease, Tenant may not terminate this Lease for breach of Landlord's obligations hereunder.

All obligations of Landlord under this Lease will be binding upon Landlord only during the period of its ownership of the Premises and not thereafter. The term "**Landlord**" in this Lease shall mean only the owner for the time being of the Premises. Upon the transfer by such owner of its interest in the Premises, such owner shall thereupon be released and discharged from all obligations of Landlord thereafter accruing, but such obligations shall be binding during the Term upon each new owner for the duration of such owner's ownership.

32. **Inspection and Access.** Landlord and its agents, representatives, and contractors may enter the Premises at any reasonable time to inspect the Premises and to make such repairs as may be required or permitted pursuant to this Lease and for any other business purpose. Landlord and Landlord's representatives may enter the Premises during business hours on not less than 2 business days'

advance written notice (except in the case of emergencies in which case no such notice shall be required and such entry may be at any time) for the purpose of effecting any such repairs, inspecting the Premises, showing the Premises to prospective purchasers and, during the last 12 months of the Term, to prospective tenants or for any other business purpose. Landlord may erect a suitable sign on the Premises stating the Premises are available to let or that the Project is available for sale. Landlord may grant easements, make public dedications, designate Common Areas and create restrictions on or about the Premises, provided that no such easement, dedication, designation or restriction materially, adversely affects Tenant's use or occupancy of the Premises for the Permitted Use or unreasonably increases Tenant's obligations or liabilities under this Lease. At Landlord's request, Tenant shall execute such instruments as may be necessary for such easements, dedications or restrictions. Tenant shall at all times, except in the case of emergencies, have the right to escort Landlord or its agents, representatives, contractors or guests while the same are in the Premises, provided such escort does not materially and adversely affect Landlord's access rights hereunder. Landlord shall use reasonable efforts to comply with Tenant's reasonable safety and confidentiality requirements during any entry by Landlord into the Premises; provided, however, that Tenant has notified Landlord in writing of such safety and confidentiality requirements prior to Landlord's entry into the Premises.

Subject to the terms of this Section 32. Landlord may from time to time during the Term, during regular business hours and/or otherwise at times mutually acceptable to Landlord and Tenant, conduct third party tours of the Premises ("**Tours**"), which Tours may be held with not less than 1 business day's advance notice. Landlord shall endeavor to minimize interference with Tenant's operations in the Premises during such Tours.

33. **Security.** Tenant acknowledges and agrees that security devices and services, if any, while intended to deter crime may not in given Instances prevent theft or other criminal acts and that Landlord is not providing any security services with respect to the Premises. Tenant agrees that Landlord shall not be liable to Tenant for, and Tenant waives any claim against Landlord with respect to, any loss by theft or any other damage suffered or incurred by Tenant in connection with any unauthorized entry into the Premises or any other breach of security with respect to the Premises. Tenant shall be solely responsible for the personal safety of Tenant's officers, employees, agents, contractors, guests and invitees while any such person is in, on or about the Premises and/or the Project. Tenant shall at Tenant's cost obtain insurance coverage to the extent Tenant desires protection against such criminal acts.

34. **Force Majeure.** Except for the payment of Rent, neither Landlord nor Tenant shall be held responsible or liable for delays in the performance of its obligations hereunder when caused by, related to, or arising out of acts of God, sinkholes or subsidence, strikes, lockouts, or other labor disputes, embargoes, quarantines, weather, national, regional, or local disasters, calamities, or catastrophes, inability to obtain labor or materials (or reasonable substitutes therefor) at reasonable costs or failure of, or inability to obtain, utilities necessary for performance, governmental restrictions, orders, limitations, regulations, or controls, national emergencies, delay in issuance or revocation of permits, enemy or hostile governmental action, terrorism, insurrection, riots, civil disturbance or commotion, fire or other casualty, and other causes or events beyond their reasonable control ("**Force Majeure**").

35. **Brokers.** Landlord and Tenant each represents and warrants that it has not dealt with any broker, agent or other similar person (collectively, "**Broker**") in connection with this transaction and that no Broker brought about this transaction, other than Hughes Marino. Landlord and Tenant each hereby agree to indemnify and hold the other harmless from and against any claims by any Broker,

other than Hughes Marino, claiming a commission or other form of compensation by virtue of having dealt with Tenant or Landlord, as applicable, with regard to this leasing transaction.

36. **Limitation on Landlord's Liability.** NOTWITHSTANDING ANYTHING SET FORTH HEREIN OR IN ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT TO THE CONTRARY: (A) LANDLORD SHALL NOT BE LIABLE TO TENANT OR ANY OTHER PERSON FOR (AND TENANT AND EACH SUCH OTHER PERSON ASSUME ALL RISK OF) LOSS, DAMAGE OR INJURY, WHETHER ACTUAL OR CONSEQUENTIAL TO: TENANTS PERSONAL PROPERTY OF EVERY KIND AND DESCRIPTION, INCLUDING, WITHOUT LIMITATION TRADE FIXTURES, EQUIPMENT, INVENTORY, SCIENTIFIC RESEARCH, SCIENTIFIC EXPERIMENTS, LABORATORY ANIMALS, PRODUCT, SPECIMENS, SAMPLES, AND/OR SCIENTIFIC, BUSINESS, ACCOUNTING AND OTHER RECORDS OF EVERY KIND AND DESCRIPTION KEPT AT THE PREMISES AND ANY AND ALL INCOME DERIVED OR DERIVABLE THEREFROM; (B) THERE SHALL BE NO PERSONAL RECOURSE TO LANDLORD FOR ANY ACT OR OCCURRENCE IN, ON OR ABOUT THE PREMISES OR ARISING IN ANY WAY UNDER THIS LEASE OR ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT WITH RESPECT TO THE SUBJECT MATTER HEREOF AND ANY LIABILITY OF LANDLORD HEREUNDER SHALL BE STRICTLY LIMITED SOLELY TO LANDLORD'S INTEREST IN THE PROJECT OR ANY PROCEEDS FROM SALE OR CONDEMNATION THEREOF AND ANY INSURANCE PROCEEDS PAYABLE IN RESPECT OF LANDLORD'S INTEREST IN THE PROJECT OR IN CONNECTION WITH ANY SUCH LOSS; AND (C) IN NO EVENT SHALL ANY PERSONAL LIABILITY BE ASSERTED AGAINST LANDLORD IN CONNECTION WITH THIS LEASE NOR SHALL ANY RECOURSE BE HAD TO ANY OTHER PROPERTY OR ASSETS OF LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS. UNDER NO CIRCUMSTANCES SHALL LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS BE LIABLE FOR INJURY TO TENANT'S BUSINESS OR FOR ANY LOSS OF INCOME OR PROFIT THEREFROM.

37. **Severability.** If any clause or provision of this Lease is illegal, invalid or unenforceable under present or future laws, then and in that event, it is the intention of the parties hereto that the remainder of this Lease shall not be affected thereby. It is also the intention of the parties to this Lease that in lieu of each clause or provision of this Lease that is illegal, invalid or unenforceable, there be added, as a part of this Lease, a clause or provision as similar in effect to such illegal, invalid or unenforceable clause or provision as shall be legal, valid and enforceable.

38. **Signs; Exterior Appearance.** Tenant shall not, without the prior written consent of Landlord, which may be granted or withheld in Landlord's reasonable discretion: (i) attach any awnings, exterior lights, decorations, balloons, flags, pennants, banners, painting or other projection to any outside wall of the Project, (ii) use any curtains, blinds, shades or screens other than Landlord's standard window coverings, (iii) coat or otherwise sunscreen the interior or exterior of any windows, (iv) place any bottles, parcels, or other articles on the window sills, (v) place any equipment, furniture or other items of personal property on any exterior balcony, or (vi) paint, affix or exhibit on any part of the Premises or the Project any signs, notices, window or door lettering, placards, decorations, or advertising media of any type which can be viewed from the exterior of the Premises. Interior signs on doors and the directory tablet shall be inscribed, painted or affixed for Tenant by Landlord at the sole cost and expense of Tenant, and shall be of a size, color and type acceptable to Landlord. Nothing may be placed on the exterior of corridor walls or corridor doors other than Landlord's standard lettering. The directory tablet shall be provided exclusively for the display of the name and location of tenants.

Subject to the terms and conditions of this Section 38. Tenant shall have the non-exclusive right to display, at Tenant's sole cost and expense, one (1) sign bearing Tenant's name and logo on the building top above the entrance of the Premises on the south side of the Building and otherwise in a location reasonably acceptable to Landlord ("**Building Sign**"). Subject to the terms and conditions of this Section 38, Tenant shall also have the non-exclusive right to display, at Tenant's sole cost and expense, signage bearing Tenant's name and logo on the monument sign serving the Project (the "**Monument Sign**"). Tenant further acknowledges and agrees that Tenant's signage on the Monument Sign and the Building Sign including, without limitation, the location, size, color and type, shall be subject to Landlord's prior written approval, which shall not be unreasonably withheld and shall comply with Landlord's signage program at the Project and with applicable Legal Requirements. Tenant shall be responsible, at Tenant's sole cost and expense, for the maintenance of Tenant's signage on the Monument Sign and the Building Sign, for the removal of Tenant's signage from the Monument Sign and the Building Sign at the expiration or earlier termination of this Lease and for the repair all damage resulting from such removal.

39. **Right to Extend Term.** Tenant shall have the right to extend the Term of the Lease upon the following terms and conditions:

(a) **Extension Right.** Tenant shall have 1 right (the "**Extension Right**") to extend the term of this Lease for 3 years (the "**Extension Term**") on the same terms and conditions as this Lease (other than with respect to Base Rent and the Work Letter) by giving Landlord written notice of its election to exercise each Extension Right at least 9 months prior to the expiration of the Base Term of the Lease.

Upon the commencement of the Extension Term, Base Rent shall be payable at the Market Rate (as defined below). Base Rent shall thereafter be adjusted on each annual anniversary of the commencement of such Extension Term by a percentage as determined by Landlord and agreed to by Tenant at the time the Market Rate is determined. As used herein, "**Market Rate**" shall mean the rate that comparable landlords of comparable buildings have accepted in current transactions from non-equity (i.e., not being offered equity in the buildings) and nonaffiliated tenants of similar financial strength for space of comparable size, quality (including all Tenant Improvements, Alterations and other improvements) and floor height in Class A laboratory/office buildings in the Central San Diego submarket for a comparable term, with the determination of the Market Rate to take into account all relevant factors, including tenant inducements, views, available amenities (including, without limitation, the Amenities (as defined in Section 42 below), age of the Building, age of mechanical systems serving the Premises, parking costs, leasing commissions, allowances or concessions, if any. In addition, Landlord may impose a market rent for the parking rights provided hereunder. Notwithstanding anything to the contrary contained in this Section 39(a), if Tenant exercises its Extension Right pursuant to this Section 39. Landlord shall make available to Tenant an allowance in the maximum amount of $25.00 per rentable square foot of the Premises for fixed and permanent improvements desired by Tenant in the Premises and reasonably acceptable to Landlord.

If, on or before the date which is 240 days prior to the expiration of the Base Term of this Lease, Tenant has not agreed with Landlord's determination of the Market Rate and the rent escalations during the Extension Term after negotiating in good faith, Tenant shall be deemed to have elected arbitration as described in Section 39(b). Tenant acknowledges and agrees that, if Tenant has elected

to exercise the Extension Right by delivering notice to Landlord as required in this Section 39(a), Tenant shall have no right thereafter to rescind or elect not to extend the term of the Lease for the Extension Term.

(b) **Arbitration.**

(i) Within 10 days of Tenant's notice to Landlord of its election (or deemed election) to arbitrate Market Rate and escalations, each party shall deliver to the other a proposal containing the Market Rate and escalations that the submitting party believes to be correct ("**Extension Proposal**"). If either party fails to timely submit an Extension Proposal, the other party's submitted proposal shall determine the Base Rent and escalations for the Extension Term. If both parties submit Extension Proposals, then Landlord and Tenant shall meet within 7 days after delivery of the last Extension Proposal and make a good faith attempt to mutually appoint a single Arbitrator (and defined below) to determine the Market Rate and escalations. If Landlord and Tenant are unable to agree upon a single Arbitrator, then each shall, by written notice delivered to the other within 10 days after the meeting, select an Arbitrator. If either party fails to timely give notice of its selection for an Arbitrator, the other party's submitted proposal shall determine the Base Rent for the Extension Term. The 2 Arbitrators so appointed shall, within 5 business days after their appointment, appoint a third Arbitrator. If the 2 Arbitrators so selected cannot agree on the selection of the third Arbitrator within the time above specified, then either party, on behalf of both parties, may request such appointment of such third Arbitrator by application to any state court of general jurisdiction in the jurisdiction in which the Premises are located, upon 10 days prior written notice to the other party of such intent.

(ii) The decision of the Arbitrator(s) shall be made within 30 days after the appointment of a single Arbitrator or the third Arbitrator, as applicable. The decision of the single Arbitrator shall be final and binding upon the parties. The average of the two closest Arbitrators in a three Arbitrator panel shall be final and binding upon the parties. Each party shall pay the fees and expenses of the Arbitrator appointed by or on behalf of such party and the fees and expenses of the third Arbitrator shall be borne equally by both parties. If the Market Rate and escalations are not determined by the first day of the Extension Term, then Tenant shall pay Landlord Base Rent in an amount equal to the Base Rent in effect immediately prior to the Extension Term and increased by the Rent Adjustment Percentage until such determination is made. After the determination of the Market Rate and escalations, the parties shall make any necessary adjustments to such payments made by Tenant. Landlord and Tenant shall then execute an amendment recognizing the Market Rate and escalations for the Extension Term.

(iii) An "**Arbitrator**" shall be any person appointed by or on behalf of either party or appointed pursuant to the provisions hereof and: (i) shall be (A) a member of the American Institute of Real Estate Appraisers with not less than 10 years of experience in the appraisal of improved office and high tech industrial real estate in the greater San Diego metropolitan area, or (B) a licensed commercial real estate broker with not less than 15 years experience representing landlords and/or tenants in the leasing of high tech or life sciences space in the greater San Diego metropolitan area, (ii) devoting substantially all of their time to professional appraisal or brokerage work, as applicable, at the time of appointment and (iii) be in all respects impartial and disinterested.

(c) **Rights Personal.** The Extension Right is personal to Tenant and is not assignable without Landlord's consent, which may be granted or withheld in Landlord's sole discretion separate and apart from any consent by Landlord to an assignment of Tenant's interest in the Lease, except that they may be assigned in connection with any Permitted Assignment of this Lease.

(d) **Exceptions.** Notwithstanding anything set forth above to the contrary, the Extension Right shall, at Landlord's option, not be in effect and Tenant may not exercise the Extension Right:

(i) during any period of time that Tenant is in Default under any provision of this Lease; or

(ii) if Tenant has been in Default under any provision of this Lease 3 or more times, whether or not the Defaults are cured, during the 12 month period immediately prior to the date that Tenant intends to exercise an Extension Right, whether or not the Defaults are cured.

(e) **No Extensions.** The period of time within which the Extension Right may be exercised shall not be extended or enlarged by reason of Tenant's inability to exercise the Extension Right.

(f) **Termination.** The Extension Right shall, at Landlord's option, terminate and be of no further force or effect even after Tenant's due and timely exercise of the Extension Right, if, after such exercise, but prior to the commencement date of the Extension Term, (i) Tenant fails to timely cure any default by Tenant under this Lease; or (ii) Tenant has Defaulted 3 or more times during the period from the date of the exercise of the Extension Right to the date of the commencement of the Extension Term, whether or not such Defaults are cured.

40. **Early Termination Right.** Tenant shall have the right, subject to the provisions of this Section 40, to terminate this Lease ("**Termination Right**") with respect to the entire Premises only on the last day of the 30th full calendar month after the Commencement Date ("**Early Termination Date**"), so long as Tenant delivers to Landlord (a) a written notice ("**Termination Notice**"), of its election to exercise its Termination Right no less than 9 months in advance of the Early Termination Date, and (b) concurrent with Tenant's delivery of the Termination Notice to Landlord, an early termination payment in the amount of $150,000 (collectively, the "**Early Termination Payment**"). If Tenant timely and properly exercises the Termination Right and delivers the Early Termination Payment, Tenant shall vacate the Premises and deliver possession thereof to Landlord in the condition required by the terms of this Lease on or before the Early Termination Date and Tenant shall have no further obligations under this Lease after the Early Termination Date except for those accruing prior to the Early Termination Date and those which, pursuant to the terms of this Lease, survive the expiration or early termination of this Lease.

If Tenant delivers a Termination Notice to Landlord pursuant to immediately preceding paragraph, Landlord shall have the opportunity, if it so elects and without any obligation to do so, to offer one or more alternative premises for lease to Tenant which reasonably satisfies the premises being sought by Tenant following the Early Termination Date ("**Alternative Premises**"). Such Alternative Premises shall be located at the Project or, if Landlord so elects, at another property in the San Diego area owned or controlled by an entity controlled by, under common control with, or controlling Landlord including, without limitation, any of the constituent members of Landlord or Alexandria Real Estate Equities, Inc. (any such entity, an "**Affiliate**"). Alternatively, Landlord and/or any Affiliate, as the case may be, shall have the right, if it so elects and without any obligation to do so, to acquire a new project

or redevelop any existing project it then owns to offer to Tenant the Alternative Premises. Such new lease shall, if entered into, otherwise be upon terms and conditions acceptable to Landlord or Affiliate, as the case may be, and Tenant in their respective good faith sole discretion. Tenant agrees to evaluate any such offer by Landlord (or its Affiliate) in good faith.

41. **Intentionally Omitted.**

42. **The Alexandria Amenities.**

(a) **Generally.** ARE-SD Region No, 17, LLC, a Delaware limited liability company ("**The Alexandria Landlord**") has constructed certain amenities at the property owned by The Alexandria Landlord located at 10996 Torreyana Road, San Diego, California ("**The Alexandria**"), which, as of the date of this Lease, include, without limitation, shared conference facilities ("**Shared Conference Facilities**"), a fitness center and restaurant (collectively, the "**Amenities**") for non-exclusive use by (a) Tenant, (b) other tenants of the Project, (c) Landlord, (d) the tenants of The Alexandria Landlord, (e) The Alexandria Landlord, (e) other affiliates of Landlord, The Alexandria Landlord and Alexandria Real Estate Equities, Inc. ("**ARE**"), (f) the tenants of such other affiliates of Landlord, The Alexandria Landlord and ARE, and (g) any other parties permitted by The Alexandria Landlord (collectively, "**Users**"). Landlord, The Alexandria Landlord, ARE, and all affiliates of Landlord, Alexandria Landlord and ARE may be referred to collectively herein as the "**ARE Parties**." Notwithstanding anything to the contrary contained herein, Tenant acknowledges and agrees that The Alexandria Landlord shall have the right, at the sole discretion of The Alexandria Landlord, to not make the Amenities available for use by some or all currently contemplated Users (including Tenant). The Alexandria Landlord shall have the sole right to determine all matters related to the Amenities including, without limitation, relating to the reconfiguration, relocation, modification or removal of any of the Amenities at The Alexandria and/or to revise, expand or discontinue any of the services (if any) provided in connection with the Amenities. Tenant acknowledges and agrees that Landlord has not made any representations or warranties regarding the availability of the Amenities and that Tenant is not entering into this Lease relying on the continued availability of the Amenities to Tenant.

(b) **License.** Commencing on the Commencement Date, and so long as The Alexandria and the Project continue to be owned by affiliates of ARE, Tenant shall have the non-exclusive right to the use of the available Amenities in common with other Users pursuant to the terms of this Section 42. Tenant shall be entitled to 2.5 passes to the fitness center located at The Alexandria per 1,000 rentable square feet of the Premises for use by employees of Tenant employed at the Premises. If any employee of Tenant to whom a fitness center pass has been issued ceases to be an employee of Tenant at the Premises or any employee to whom an access card (which does not include a fitness center pass) has been issued ceases to be an employee of Tenant at the Premises, Tenant shall immediately upon such employee's change in status collect such employee's pass or access card, as applicable, and deliver it to Landlord along with written notice of such employee's change in status.

Commencing on the Commencement Date, Tenant shall pay to Landlord a fixed fee during the Base Term equal to $0.12 per rentable square foot of the Premises per month ("**Amenities Fee**"), which Amenities Fee shall by payable on the first day of each month during the Term whether or not Tenant elects to use any or all of the Amenities. The Amenities Fee shall be increased annually on each anniversary of the Commencement Date by 3%. With respect to the Extension Term, if exercised by Tenant, Landlord may impose a market fee in connection with the Amenities. If all of the Amenities at The Alexandria become materially unavailable for use by Tenant

(for any reason other than a Default by Tenant under this Lease or the default by Tenant of any agreement(s) relating to the use of the Amenities by Tenant) for a period in excess of 90 consecutive days, then, commencing on the date that the Amenities in their entirety become materially unavailable for use by Tenant and continuing for the period that the Amenities in their entirety remain materially unavailable for use by Tenant, the Amenities Fee then-currently payable by Tenant shall be abated.

(c) **Shared Conference Facilities.** Use by Tenant of the Shared Conference Facilities and restaurant at The Alexandria shall be in common with other Users with scheduling procedures reasonably determined by The Alexandria Landlord or The Alexandria Landlord's then designated event operator ("**Event Operator**"). Tenant's use of the Shared Conference Facilities shall be subject to the payment by Tenant to The Alexandria Landlord of a fee equal to The Alexandria Landlord's quoted rates for the usage of the Shared Conference Facilities in effect at the time of Tenant's scheduling discounted by 30%. Tenant's use of the conference rooms in the Shared Conference Area shall be subject to availability and The Alexandria Landlord (or, if applicable, Event Operator) reserves the right to exercise its reasonable discretion in the event of conflicting scheduling requests among Users. Tenant hereby acknowledges that (i) Biocom/San Diego, a California non-profit corporation ("**Biocom**") has the right to reserve the Shared Conference Facilities and any reservable dining area(s) included within the Amenities for up to 50% of the time that such Shared Conference Facilities and reservable dining area(s) are available for use by Users each calendar month, and (ii) lllumina, Inc., a Delaware corporation, has the exclusive use of the main conference room within the Shared Conference Facilities for up to 4 days per calendar month.

Tenant shall be required to use the food service operator designated by The Alexandria Landlord at The Alexandria (the "**Designated Food and Beverage Operator**") for any food and/or beverage service or catered events held by Tenant in the Shared Conference Facilities. As of the date of this Lease, the Designated Food and Beverage Operator is The Farmer and the Seahorse. The Alexandria Landlord has the right, in its sole and absolute discretion, to change the Designated Food and Beverage Operator at any time. Tenant may not use any vendors other than the Designated Food and Beverage Operator nor may Tenant supply its own food and/or beverages in connection with any food and/or beverage service or catered events held by Tenant in the Shared Conference Facilities.

Tenant shall, at Tenant's sole cost and expense, (i) be responsible for the set-up of the Shared Conference Facilities in connection with Tenant's use (including, without limitation ensuring that Tenant has a sufficient number of chairs and tables and the appropriate equipment), and (ii) surrender the Shared Conference Facilities after each time that Tenant uses the Shared Conference Facilities free of Tenant's personal property, in substantially the same set up and same condition as received, subject to casualty, and free of any debris and trash. If Tenant fails to restore and surrender the Shared Conference Facilities as required by sub-section (ii) of the immediately preceding sentence, such failure shall constitute a "**Shared Facilities Default**." Each time that Landlord reasonably determines that Tenant has committed a Shared Facilities Default, Tenant shall be required to pay Landlord a penalty within 5 days after notice from Landlord of such Shared Facilities Default. The penalty payable by Tenant in connection with the first Shared Facilities Default shall be $200. The penalty payable shall increase by $50 for each subsequent Shared Facilities Default (for the avoidance of doubt, the penalty shall be $250 for the second Shared Facilities Default, shall be $300 for the third Shared Facilities Default, etc.). In addition to the foregoing, Tenant shall be responsible for reimbursing The Alexandria Landlord or Landlord, as applicable, for all costs expended by The Alexandria Landlord or Landlord, as applicable, in repairing any damage to the Shared Conference Facilities, the Amenities, or The Alexandria caused by Tenant or any Tenant Related Party. The provisions of this Section 42(c) shall survive the expiration or earlier termination of this Lease.

(d) **Restaurant.** Tenant's employees that have been issued an access card to The Alexandria shall have the right, along with other Users, to access and use the restaurant located at The Alexandria. All such employees of Tenant shall be entitled to a 20% discount on certain food items (not including alcohol) purchased at the restaurant (on an individual basis and not with respect to entire tables or checks), which discount shall not be transferrable.

(e) **Rules and Regulations.** Tenant shall be solely responsible for paying for any and all ancillary services (e.g., audio visual equipment) provided to Tenant, all food services operators and any other third party vendors providing services to Tenant at The Alexandria. Tenant shall use the Amenities (including, without limitation, the Shared Conference Facilities) in compliance with all applicable Legal Requirements and any rules and regulations imposed by The Alexandria Landlord or Landlord from time to time and in a manner that will not interfere with the rights of other Users. The use of Amenities other than the Shared Conference Facilities by employees of Tenant shall be in accordance with the terms and conditions of the standard licenses, indemnification and waiver agreement required by The Alexandria Landlord or the operator of the Amenities to be executed by all persons wishing to use such Amenities. Neither The Alexandria Landlord nor Landlord (nor, If applicable, any other affiliate of Landlord) shall have any liability or obligation for the breach of any rules or regulations by other Users with respect to the Amenities. Tenant shall not make any alterations, additions, or improvements of any kind to the Shared Conference Facilities, the Amenities or The Alexandria.

Tenant acknowledges and agrees that The Alexandria Landlord shall have the right at any time and from time to time to reconfigure, relocate, modify or remove any of the Amenities at The Alexandria and/or to revise, expand or discontinue any of the services (if any) provided in connection with the Amenities.

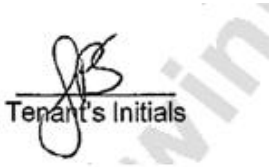
(f) **Waiver of Liability and Indemnification.** Tenant warrants that it will use reasonable care to prevent damage to property and injury to persons while on The Alexandria. Tenant waives any claims it or any Tenant Parties may have against any ARE Parties relating to, arising out of or in connection with the Amenities and any entry by Tenant and/or any Tenant Parties onto The Alexandria, and Tenant releases and exculpates all ARE Parties from any liability relating to, arising out of or in connection with the Amenities and any entry by Tenant and/or any Tenant Parties onto The Alexandria. Tenant hereby agrees to indemnify, defend, and hold harmless the ARE Parties from any claim of damage to property or injury to person relating to, arising out of or in connection with (i) the use of the Amenities by Tenant or any Tenant Parties, and (ii) any entry by Tenant and/or any Tenant Parties onto The Alexandria, except to the extent caused by the gross negligence or willful misconduct of any ARE Parties. The provisions of this Section 42 shall survive the expiration or earlier termination of this Lease.

(g) **Insurance.** As of the Amenities Commencement Date, Tenant shall cause The Alexandria Landlord to be named as an additional insured under the commercial general liability policy of insurance that Tenant is required to maintain pursuant to Section 17 of this Lease.

43. Asbestos.

(a) **Notification of Asbestos.** Landlord hereby notifies Tenant of the presence of asbestos-containing materials ("**ACMs**") and/or presumed asbestos-containing materials ("**PACMs**") within or about the Premises in the location Identified in **Exhibit H**.

(b) **Tenant Acknowledgement.** Tenant hereby acknowledges receipt of the notification in paragraph (a) of this Section 43 and understands that the purpose of such notification is to make Tenant and any agents, employees, and contractors of Tenant, aware of the presence of ACMs and/or PACMs within or about the Building in order to avoid or minimize any damage to or disturbance of such ACMs and/or PACMs.



(c) **Acknowledgement from Contractors/Employees.** Tenant shall give Landlord at least 14 days' prior written notice before conducting, authorizing or permitting any of the activities listed below within or about the Premises, and before soliciting bids from any person to perform such services. Such notice shall identify or describe the proposed scope, location, date and time of such activities and the name, address and telephone number of each person who may be conducting such activities. Thereafter, Tenant shall grant Landlord reasonable access to the Premises to determine whether any ACMs or PACMs will be disturbed in connection with such activities. Tenant shall not solicit bids from any person for the performance of such activities without Landlord's prior written approval. Upon Landlord's request, Tenant shall deliver to Landlord a copy of a signed acknowledgement from any contractor, agent, or employee of Tenant acknowledging receipt of information describing the presence of ACMs and/or PACMs within or about the Premises in the locations identified in **Exhibit H** prior to the commencement of such activities. Nothing in this Section 43 shall be deemed to expand Tenant's rights under the Lease or otherwise to conduct, authorize or permit any such activities.

(i) Removal of thermal system insulation ("**TSI**") and surfacing ACMs and PACMs (i.e., sprayed-on or troweled-on material, e.g., textured ceiling paint or fireproofing material);

(ii) Removal of ACMs or PACMs that are not TSI or surfacing ACMs or PACMs; or

(iii) Repair and maintenance of operations that are likely to disturb ACMs or PACMs.

44. **Miscellaneous.**

(a) **Notices.** All notices or other communications between the parties shall be in writing and shall be deemed duly given, upon delivery or refusal to accept delivery by the addressee thereof if delivered in person, or upon actual receipt if delivered by reputable overnight guaranty courier, addressed and sent to the parties at their addresses set forth above. Landlord and Tenant may from time to time by written notice to the other designate another address for receipt of future notices.

(b) **Joint and Several Liability.** If and when included within the term "**Tenant**," as used in this instrument, there is more than one person or entity, each shall be jointly and severally liable for the obligations of Tenant.

(c) **Financial Information.** Tenant shall furnish Landlord with true and complete copies of (i) Tenant's most recent audited annual financial statements within 120 days of the end of each of Tenant's fiscal years during the Term, (ii) Tenant's most recent unaudited quarterly financial statements within 55 days of the end of each of Tenant's first three fiscal quarters of each of Tenant's fiscal years during the Term, (iii) at Landlord's request from time to time, updated business plans, including cash flow projections and/or pro forma balance sheets and income statements, all of which shall be treated by Landlord as confidential information belonging to Tenant, and (iv) corporate brochures and/or profiles prepared by Tenant for prospective investors. Landlord shall treat Tenant's financial information as confidential information belonging to Tenant and will not disclose the same to third parties other than on a need-to-know basis to Landlord's affiliates, legal, financial or tax advisors, consultants, potential lenders and potential purchasers (and Landlord shall instruct such parties to keep such financial information confidential) and as required by Legal Requirements.

(d) **Recordation.** Neither this Lease nor a memorandum of lease shall be filed by or on behalf of Tenant in any public record. Landlord may prepare and file, and upon request by Landlord Tenant will execute, a memorandum of lease.

(e) **Interpretation.** The normal 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 Lease or any exhibits or amendments hereto. Words of any gender used in this Lease shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires. The captions inserted in this Lease are for convenience only and in no way define, limit or otherwise describe the scope or intent of this Lease, or any provision hereof, or in any way affect the interpretation of this Lease.

(f) **Not Binding Until Executed.** The submission by Landlord to Tenant of this Lease shall have no binding force or effect, shall not constitute an option for the leasing of the Premises, nor confer any right or impose any obligations upon either party until execution of this Lease by both parties.

(g) **Limitations on Interest.** It is expressly the intent of Landlord and Tenant at all times to comply with applicable law governing the maximum rate or amount of any interest payable on or in connection with this Lease. If applicable law is ever judicially interpreted so as to render usurious any interest called for under this Lease, or contracted for, charged, taken, reserved, or received with respect to this Lease, then it is Landlord's and Tenant's express intent that all excess amounts theretofore collected by Landlord be credited on the applicable obligation (or, If the obligation has been or would thereby be paid in full, refunded to Tenant), and the provisions of this Lease immediately shall be deemed reformed and the amounts thereafter collectible hereunder reduced, without the necessity of the execution of any new document, so as to comply with the applicable law, but so as to permit the recovery of the fullest amount otherwise called for hereunder.

(h) **Choice of Law.** Construction and interpretation of this Lease shall be governed by the internal laws of the state in which the Premises are located, excluding any principles of conflicts of laws.

(i) **Time.** Time is of the essence as to the performance of Tenant's obligations under this Lease.

(j) **OFAC.** Tenant and all beneficial owners of Tenant are currently (a) in compliance with and shall at all times during the Term of this Lease remain in compliance with the regulations of the Office of Foreign Assets Control ("**OFAC**") of the U.S. Department of Treasury and any statute, executive order, or regulation relating thereto (collectively, the "**OFAC Rules**"), (b) not listed on, and shall not during the term of this Lease be listed on, the Specially Designated Nationals and Blocked Persons List, Foreign Sanctions Evaders List, or the Sectoral Sanctions Identification List, which are all maintained by OFAC and/or on any other similar list maintained by OFAC or other governmental authority pursuant to any authorizing statute, executive order, or regulation, and (c) not a person or entity with whom a U.S. person is prohibited from conducting business under the OFAC Rules.

(k) **Incorporation by Reference.** All exhibits and addenda attached hereto are hereby incorporated into this Lease and made a part hereof. If there is any conflict between such exhibits or addenda and the terms of this Lease, such exhibits or addenda shall control.

(l) **Entire Agreement.** This Lease, including the exhibits attached hereto, constitutes the entire agreement between Landlord and Tenant pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, understandings, letters of intent, negotiations and discussions, whether oral or written, of the parties, and there are no warranties, representations or other agreements, express or implied, made to either party by the other party in connection with the subject matter hereof except as specifically set forth herein.

(m) **No Accord and Satisfaction.** No payment by Tenant or receipt by Landlord of a lesser amount than the monthly installment of Base Rent or any Additional Rent will be other than on account of the earliest stipulated Base Rent and Additional Rent, nor will any endorsement or statement on any check or letter accompanying a check for payment of any Base Rent or Additional Rent be an accord and satisfaction. Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or to pursue any other remedy provided in this Lease.

(n) **Hazardous Activities.** Notwithstanding any other provision of this Lease, Landlord, for itself and its employees, agents and contractors, reserves the right to refuse to perform any repairs or services in any portion of the Premises which, pursuant to Tenant's routine safety guidelines, practices or custom or prudent industry practices, require any form of protective clothing or equipment other than safety glasses. In any such case, Tenant shall contract with parties who are acceptable to Landlord, in Landlord's reasonable discretion, for all such repairs and services, and Landlord shall, to the extent required, equitably adjust Tenant's Share of Operating Expenses in respect of such repairs or services to reflect that Landlord is not providing such repairs or services to Tenant.

(o) **Redevelopment of Project.** Tenant acknowledges that Landlord, in its sole discretion, may from time to time expand, renovate and/or reconfigure the Project as the same may exist from time to time and, in connection therewith or in addition thereto, as the case may be, from time to time without limitation: (a) change the shape, size, location, number and/or extent of any improvements, buildings, structures, lobbies, hallways, entrances, exits, parking and/or parking areas relative to any portion of the Project; (b) modify, eliminate and/or add any buildings, improvements, and parking structure(s) either above or below grade, to the Project, the Common Areas and/or any other portion of the Project and/or make any other changes thereto affecting the same; and (c) make any other changes, additions and/or deletions in any way affecting the Project and/or any portion thereof as Landlord may elect from time to time, including without limitation, additions to and/or deletions from the land comprising the Project, the Common Areas and/or any

other portion of the Project. Notwithstanding anything to the contrary contained in this Lease, Tenant shall have no right to seek damages (including abatement of Rent) or to cancel or terminate this Lease because of any proposed changes, expansion, renovation or reconfiguration of the Project nor shall Tenant have the right to restrict, inhibit or prohibit any such changes, expansion, renovation or reconfiguration; provided, however, Landlord shall not change the size, dimensions, location or Tenant's Permitted Use of the Premises.

(p) **Discontinued Use.** If, at any time following the Rent Commencement Date, Tenant does not continuously operate its business in the Premises for a period of 180 consecutive days (excluding closures required due to casualty), Landlord may, but is not obligated to, elect to terminate this Lease upon 30 days' written notice to Tenant, whereupon this Lease shall terminate 30 days' after Landlord's delivery of such written notice ("**Termination Date**"), and Tenant shall vacate the Premises and deliver possession thereof to Landlord in the condition required by the terms of this Lease on or before the Termination Date and Tenant shall have no further obligations under this Lease except for those accruing prior to the Termination Date and those which, pursuant to the terms of the Lease, survive the expiration or early termination of the Lease.

(q) **EV Charging Stations.** Landlord shall not unreasonably withhold its consent to Tenant's written request to install 1 or more electric vehicle car charging stations **{**"**EV Stations**") in the parking area serving the Project; provided, however, that Tenant complies with all reasonable requirements, standards, rules and regulations which may be imposed by Landlord, at the time Landlord's consent is granted, in connection with Tenant's installation, maintenance, repair and operation of such EV Stations, which may include, without limitation, the charge to Tenant of a reasonable monthly rental amount for the parking spaces used by Tenant for such EV Stations, Landlord's designation of the location of Tenant's EV Stations, and Tenant's payment of all costs whether incurred by Landlord or Tenant in connection with the installation, maintenance, repair and operation of each Tenant's EV Station(s). Nothing contained in this paragraph is intended to increase the number of parking spaces which Tenant is otherwise entitled to use at the Project under Section 10 of this Lease nor impose any additional obligations on Landlord with respect to Tenant's parking rights at the Project.

(r) **California Accessibility Disclosure.** For purposes of Section 1938(a) of the California Civil Code, Landlord hereby discloses to Tenant, and Tenant hereby acknowledges, that the Project has not undergone inspection by a Certified Access Specialist (CASp). In addition, the following notice is hereby provided pursuant to Section 1938(e) of the California Civil Code: "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." In furtherance of and in connection with such notice: (i) Tenant, having read such notice and understanding Tenant's right to request and obtain a CASp inspection, hereby elects not to obtain such CASp inspection and forever waives its rights to obtain a CASp inspection with respect to the Premises, Building and/or Project to the extent permitted by Legal Requirements; and (ii) if the waiver set

forth in clause (i) hereinabove is not enforceable pursuant to Legal Requirements, then Landlord and Tenant hereby agree as follows (which constitutes the mutual agreement of the parties as to the matters described in the last sentence of the foregoing notice): (A) Tenant shall have the one-time right to request for and obtain a CASp inspection, which request must be made, if at all, In a written notice delivered by Tenant to Landlord; (B) any CASp inspection timely requested by Tenant shall be conducted (1) at a time mutually agreed to by Landlord and Tenant, (2) in a professional manner by a CASp designated by Landlord and without any testing that would damage the Premises, Building or Project in any way, and (3) at Tenant's sole cost and expense, including, without limitation, Tenant's payment of the fee for such CASp Inspection, the fee for any reports prepared by the CASp in connection with such CASp inspection (collectively, the "**CASp Reports**") and all other costs and expenses in connection therewith; (C) the CASp Reports shall be delivered by the CASp simultaneously to Landlord and Tenant; (D) Tenant, at its sole cost and expense, shall be responsible for making any improvements, alterations, modifications and/or repairs to or within the Premises to correct violations of construction-related accessibility standards including, without limitation, any violations disclosed by such CASp Inspection; and (E) if such CASp inspection identifies any improvements, alterations, modifications and/or repairs necessary to correct violations of construction-related accessibility standards relating to those items of the Building and Project located outside the Premises that are Landlord's obligation to repair as set forth in this Lease, then Landlord shall perform such improvements, alterations, modifications and/or repairs as and to the extent required by Legal Requirements to correct such violations, and Tenant shall reimburse Landlord for the cost of such improvements, alterations, modifications and/or repairs within 10 business days after Tenant's receipt of an invoice therefor from Landlord.

[Signatures are on the next page]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Lease as of the day and year first above written.

TENANT:

XERIS PHARMACEUTICALS, INC.,
a Delaware corporation

By: /s/ John Shannon
Its: COO

LANDLORD:

ARE-SD REGION NO. 30, LLC,
a Delaware limited liability company

By: ALEXANDRIA REAL ESTATE EQUITIES, L.P., a Delaware limited partnership,
managing member

By: ARE-QRS CORP.,
a Maryland corporation,
general partner

By: /s/ Gary Dean
Its: Senior Vice President RE Legal Affairs

EXHIBIT A TO LEASE

DESCRIPTION OF PREMISES

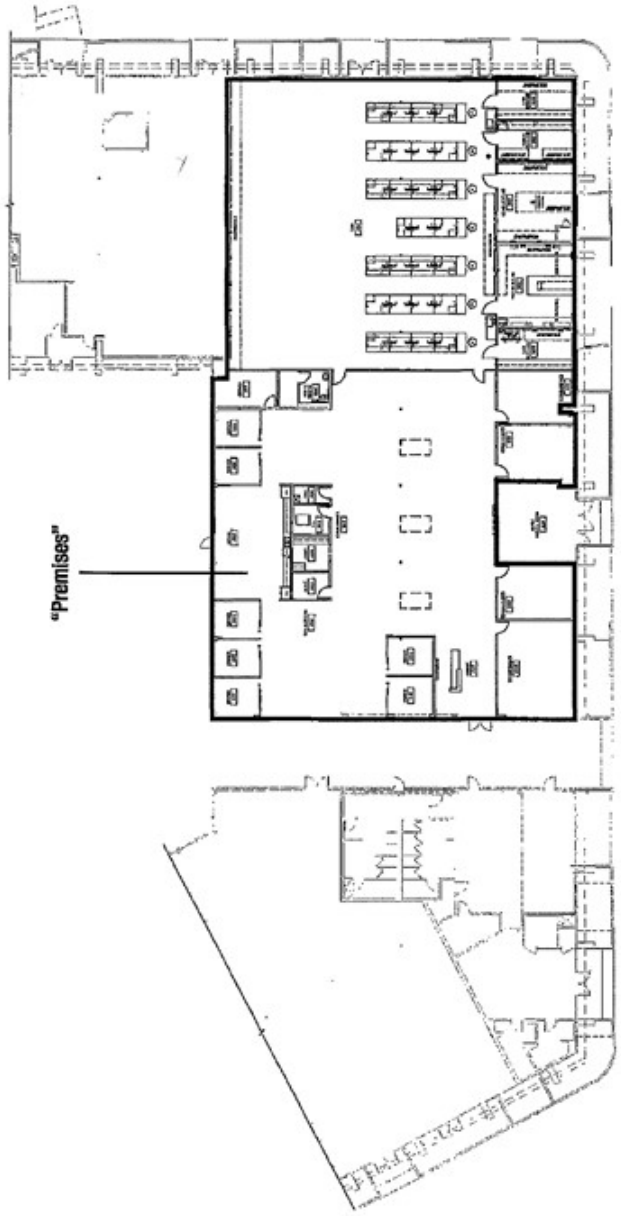


EXHIBIT B TO LEASE

DESCRIPTION OF PROJECT

EXHIBIT C TO LEASE

WORK LETTER

THIS WORK LETTER dated September 29, 2017 (this "**Work Letter**") is made and entered into by and between **ARE-SD REGION NO.'30**, **LLC**, a Delaware limited liability company ("**Landlord**"), and **XER1S PHARMACEUTICALS**, **INC**., a Delaware corporation ("**Tenant**"), and is attached to and made a part of the Lease Agreement dated September 29, 2017 (the "**Lease**"), by and between Landlord and Tenant. Any initially capitalized terms used but not defined herein shall have the meanings given them in the Lease.

1. **General Requirements.**

(a) **Tenant's Authorized Representative.** Tenant designates Steve Prestrelski and Dean Petersen (either such individual acting alone, "**Tenant's Representative**") as the only persons authorized to act for Tenant pursuant to this Work Letter. Landlord shall not be obligated to respond to or act upon any request, approval, inquiry or other communication ("**Communication**") from or on behalf of Tenant in connection with this Work Letter unless such Communication is in writing from Tenant's Representative. Tenant may change either Tenant's Representative at any time upon not less than 5 business days advance written notice to Landlord. Neither Tenant nor Tenant's Representative shall be authorized to direct Landlord's contractors in the performance of Landlord's Work (as hereinafter defined).

(b) **Landlord's Authorized Representative.** Landlord designates Chris Clement and Eric Hedblad (either such individual acting alone, "**Landlord's Representative**") as the only persons authorized to act for Landlord pursuant to this Work Letter. Tenant shall not be obligated to respond to or act upon any request, approval, inquiry or other Communication from or on behalf of Landlord in connection with this Work Letter unless such Communication is in writing from Landlord's Representative. Landlord may change either Landlord's Representative at any time upon not less than 5 business days advance written notice to Tenant. Landlord's Representative shall be the sole persons authorized to direct Landlord's contractors in the performance of Landlord's Work.

(c) **Architects, Consultants and Contractors.** Landlord and Tenant hereby acknowledge and agree that: (i) the general contractor and any subcontractors for the Tenant Improvements shall be selected by Landlord, subject to Tenant's approval, which approval shall not be unreasonably withheld, conditioned or delayed, and (ii) MacFarlane Architects shall be the architect (the "**Tl Architect**") for the Tenant Improvements.

2. **Tenant Improvements.**

(a) **Tenant Improvements Defined.** As used herein, "**Tenant Improvements**" shall mean all improvements to the Premises of a fixed and permanent nature as shown on the Tl Construction Drawings, as defined in Section 2(c) below. Other than Landlord's Work (as defined in Section 3(a) below), Landlord shall not have any obligation whatsoever with respect to the finishing of the Premises for Tenant's use and occupancy. Landlord and Tenant acknowledge and agree that a portion of the Premises, as reflected in the Space Plan, will not be improved as part of the Tenant Improvements as Tenant has indicated that it does not require that such portion of the Premises be improved in connection with its operations in the Premises. Upon request from Tenant, Landlord shall provide Tenant with notice of planned meetings regarding the design and construction of the tenant improvements. Tenant shall have a right to have a representative present for all design and construction meetings relating to the Tenant Improvements.

(b) **Tenant's Space Plans.** Landlord and Tenant acknowledge and agree that the plan prepared by the Tl Architect attached hereto as **Schedule 1** (the "**Space Plans**") and the Tl specifications attached hereto as **Schedule 2** (the "**Tl Specifications**") have been approved by both Landlord and Tenant. Landlord and Tenant further acknowledge and agree that any Changes to the Space Plans or the Tl Specifications requested by Tenant constitute a Change Request the cost of which Changes shall be paid for by Tenant in accordance with Section 5(b) below. Tenant shall be solely responsible, pursuant to the terms of Section 5fb) below, for all costs incurred by Landlord to alter the Building (or Landlord's plans for the Building) as a result of Tenant's requested Changes. Notwithstanding anything to the contrary contained herein, Landlord is not required to make any Changes requested by Tenant to the Space Plans or the Tl Specifications.

(c) **Working Drawings.** Landlord shall cause the Tl Architect to prepare and deliver construction plans, specifications and drawings for the Tenant Improvements ("**Tl Construction Drawings**") consistent with the Space Plans and the Tl Specifications.

(d) **Approval and Completion.** Upon any dispute regarding the design of the Tenant Improvements, which is not settled within 10 business days after notice of such dispute is delivered by one party to the other, Landlord may make the final decision regarding the design of the Tenant Improvements. Any changes to the Tl Construction Drawings following Landlord's and Tenant's approval of same requested by Tenant shall be processed as provided in Section 4 hereof.

3. **Performance of Landlord's Work.**

(a) **Definition of Landlord's Work.** As used herein, "**Landlord's Work**" shall mean the work of constructing the Tenant Improvements.

Tenant shall be solely responsible for ensuring that the design and specifications for the Tenant Improvements are consistent with Tenant's requirements. Landlord shall be responsible for obtaining all permits, approvals and entitlements necessary for Landlord's Work, but shall have no obligation to, and shall not, secure any permits, approvals or entitlements related to Tenant's specific use of the Premises or Tenant's business operations therein.

(b) **Commencement and Permitting.** Landlord shall commence construction of the Tenant Improvements upon obtaining a building permit (the "**Tl Permit**") authorizing the construction of the Tenant Improvements consistent with the Tl Construction Drawings approved by Tenant. The cost of obtaining the Tl Permit shall be payable by Landlord. Tenant shall reasonably assist Landlord in obtaining the Tl Permit. If any Governmental Authority having jurisdiction over the construction of Landlord's Work or any portion thereof shall impose terms or conditions upon the construction thereof that: (i) are inconsistent with Landlord's obligations hereunder, (ii) materially increase the cost of constructing Landlord's Work, or (iii) will materially delay the construction of Landlord's Work, Landlord and Tenant shall reasonably and in good faith seek means by which to mitigate or eliminate any such adverse terms and conditions.

(c) **Completion of Landlord's Work.** Landlord shall substantially complete or cause to be substantially completed Landlord's Work in a good and workmanlike manner, in accordance with the Tl Permit subject, in each case, to Minor Variations and normal "punch list" items of a non-material nature that do not interfere with the use of the Premises and with a certificate or temporary certificate of occupancy (or an equivalent approval having been issued) for the Premises permitting lawful occupancy of the Premises (but specifically excluding any permits, licenses or other governmental approvals required to be obtained in connection with Tenant's operations in the Premises) ("**Substantial Completion**" or "**Substantially Complete**"). Notwithstanding the foregoing, Landlord's Work shall not be considered Substantially Completed until the Walk-Through Inspection (as defined below) has been completed. Upon Substantial Completion of Landlord's Work, Landlord shall require the Tl Architect and the general contractor to execute and deliver, for the benefit of Tenant and Landlord, a Certificate of Substantial Completion in the form of the American Institute of Architects ("**AIA**") document G704. For purposes of this Work Letter, "**Minor Variations**" shall mean any modifications reasonably required: (i) to comply with all applicable Legal Requirements and/or to obtain or to comply with any required permit (including the Tl Permit); (ii) to comply with any request by Tenant for modifications to Landlord's Work; (iii) to comport with good design, engineering, and construction practices that are not material; or (iv) to make reasonable adjustments for field deviations or conditions encountered during the construction of Landlord's Work. Landlord shall provide Tenant notice of any such Minor Variations. For purposes of this Work Letter, "**Walk-Through Inspection**" shall mean that Landlord and Tenant have together, within 1 business day after request from Landlord to do so, conducted a walk-through inspection of the Premises to create a punch list reasonably acceptable to Landlord and Tenant.

(d) **Selection of Materials.** Where more than one type of material or structure is indicated on the Tl Construction Drawings approved by Landlord and Tenant, the option will be selected at Landlord's sole and absolute discretion. As to all building materials and equipment that Landlord is obligated to supply under this Work Letter, Landlord shall select the manufacturer thereof in its sole and absolute discretion.

(e) **Delivery of the Premises.** When Landlord's Work is Substantially Complete, subject to the remaining terms and provisions of this Section 3(e), Tenant shall accept the Premises. Tenant's taking possession and acceptance of the Premises shall not constitute a waiver of: (i) any warranty with respect to workmanship (including installation of equipment) or material (exclusive of equipment provided directly by manufacturers), (ii) any non-compliance of Landlord's Work with applicable Legal Requirements, or (iii) any claim that Landlord's Work was not completed substantially in accordance with the Tl Construction Drawings (subject to Minor Variations and such other changes as are permitted hereunder) (collectively, a "**Construction Defect**"). Tenant shall have one year after Substantial Completion within which to notify Landlord of any such Construction Defect discovered by Tenant, and Landlord shall use reasonable efforts to remedy or cause the responsible contractor to remedy any such Construction Defect within 30 days thereafter. Notwithstanding the foregoing, Landlord shall not be in default under the Lease if the applicable contractor, despite Landlord's reasonable efforts, fails to remedy such Construction Defect within such 30-day period. If contractor fails to remedy such Construction Defect within a reasonable time, Landlord shall use reasonable efforts to remedy the Construction Defect within 30 days unless such Construction Defect cannot reasonably be remedied in 30 days in which case Landlord shall thereafter continue to diligently pursue such remedy.

Tenant shall be entitled to receive the benefit of all construction warranties and manufacturer's equipment warranties relating to equipment installed In the Premises. If requested by Tenant, Landlord shall attempt to obtain extended warranties from manufacturers and suppliers of such equipment, but the cost of any such extended warranties shall be borne solely by Tenant. Landlord shall promptly

undertake and complete, or cause to be completed, all punch list items, and shall use reasonable efforts to complete such punch list items within 30 days after Substantial Completion.

(f) **Commencement Date Delay.** Except as otherwise provided in the Lease, Delivery of the Premises shall occur when Landlord's Work has been Substantially Completed, except to the extent that completion of Landlord's Work shall have been actually delayed by any one or more of the following causes ("**Tenant Delay**"):

(i) Tenant's Representative was not available within 3 business day following Landlord's request to give or receive any Communication or to take any other action required to be taken by Tenant hereunder;

(ii) Tenant's request for Change Requests (as defined in Section 4(a) below) whether or not any such Change Requests are actually performed;

(iii) Construction of any Change Requests;

(iv) Tenant's request for materials, finishes or installations requiring unusually long lead times, provided that promptly after Landlord learns of such long lead times, Landlord informs Tenant that the requested items will require unusually long lead times;

(v) Intentionally Deleted;

(vi) Tenant's delay in providing information critical to the normal progression of the Project within 1 business day following written request from Landlord therefor which identifies the information being requested as critical to the normal progression of the Project. Tenant shall provide such information as soon as reasonably possible, but in no event longer than one week after receipt of any request for such information from Landlord;

(vii) Tenant's delay in making payments to Landlord for Excess Tl Costs (as defined in Section 5(b) below); or

(viii) Any other act or omission by Tenant or any Tenant Party (as defined in the Lease), or persons employed by any of such persons that continues for more than 2 business days after Landlord's written notice to Tenant.

None of the time frames set forth above are intended to shorten any time periods otherwise provided for herein for the taking of any action by Tenant. If Delivery is delayed for any of the foregoing reasons, then Landlord shall cause the Tl Architect to certify the date on which the Tenant Improvements would have been completed but for such Tenant Delay and such certified date shall be the date of Delivery.

4. **Changes.** Any changes requested by Tenant to the Tenant Improvements shall be requested and instituted in accordance with the provisions of this Section 4 and shall be subject to the written approval of Landlord and the Tl Architect, such approval not to be unreasonably withheld, conditioned or delayed.

(a) **Tenant's Request For Changes.** If Tenant shall request changes to the Tenant Improvements ("**Changes**"), Tenant shall request such Changes by notifying Landlord in writing in substantially the same form as the AIA standard change order form (a "**Change**

Request"), which Change Request shall detail the nature and extent of any such Change. Such Change Request must be signed by Tenant's Representative. Landlord shall, before proceeding with any Change, use commercially reasonable efforts to respond to Tenant as soon as is reasonably possible with an estimate of: (i) the time it will take, and (ii) the architectural and engineering fees and costs that will be incurred, to analyze such Change Request (which costs shall be paid for by Tenant to the extent actually incurred, whether or not such Change is implemented). Landlord shall thereafter submit to Tenant in writing, within 5 business days of receipt of the Change Request (or such longer period of time as is reasonably required depending on the extent of the Change Request), an analysis of the additional cost or savings involved, including, without limitation, architectural and engineering costs and the period of time, if any, that the Change will extend the date on which Landlord's Work will be Substantially Complete. Any such delay in the completion of Landlord's Work caused by a Change, including any suspension of Landlord's Work while any such Change is being evaluated and/or designed, shall be Tenant Delay.

(b) **Implementation of Changes.** If Tenant: (i) approves in writing the cost or savings and the estimated extension in the time for completion of Landlord's Work, if any, and (ii) deposits with Landlord any Excess Tl Costs required in connection with such Change, Landlord shall cause the approved Change to be instituted. Notwithstanding any approval or disapproval by Tenant of any estimate of the delay caused by such proposed Change, the Tl Architect's reasonable determination of the amount of Tenant Delay in connection with such Change shall be final and binding on Landlord and Tenant, absent manifest error.

5. **Costs.**

(a) **Tl Costs.** Landlord shall be responsible for the payment of all design, permits and construction costs in connection with the construction of the Tenant Improvements, including, without limitation, the cost of preparing the Tl Construction Drawings and the Space Plans and Landlord's out-of-pocket expenses (collectively, "**Tl Costs**"). Notwithstanding anything to the contrary contained herein, Tl Costs shall not include (and Landlord shall not be responsible for the cost of) furniture, personal property or other non-Building system materials or equipment, including, but not limited to, Tenant's voice or data cabling, non-ducted biological safety cabinets and other scientific equipment not incorporated into the Tenant Improvements. Tenant has advised Landlord that Tenant has retained Hughes Marino, Inc. ("**Tenant's Project Manager**") to provide consulting services to Tenant in connection with the Tenant Improvements. Landlord shall pay Tenant's Project Manager a fee equal to $30,000 as part of Tl Costs.

(b) **Excess Tl Costs.** Notwithstanding anything to the contrary contained herein, Tenant acknowledges and agrees that Landlord shall have no responsibility for any costs arising from or related to Tenant's Changes to the Space Plans or Tl Construction Drawings, Tenant Delays, the cost of Changes and Change Requests which would increase any of the costs anticipated by Landlord for Landlord's Work (collectively, "**Excess Tl Costs**"). Landlord shall provide Tenant with the line-item amount of any Excess Tl Costs incurred along with reasonable supporting evidence but, for the avoidance of any doubt, in no event shall Landlord be required to provide Tenant with its budget for Landlord's Work. Tenant shall deposit with Landlord, as a condition precedent to Landlord's obligation to complete the Tenant Improvements, 100% of the Excess Tl Costs within 5 business days after written request from Landlord. If Tenant fails to deposit any Excess Tl Costs with Landlord, Landlord shall have all of the rights and remedies set forth in the Lease for nonpayment of Rent (including, but not limited to, the right to interest at the Default Rate and the right to assess a late charge). For purposes of any litigation instituted with regard to such amounts, those amounts will be deemed Rent under the Lease.

6. **Tenant Access.**

(a) **Tenant's Access Rights.** Landlord hereby agrees to permit Tenant access, at Tenant's sole risk and expense, to the Premises (i) 45 days prior to the Commencement Date to perform any work ("**Tenant's Work**") required by Tenant other than Landlord's Work, provided that such Tenant's Work is coordinated with the Tl Architect and the general contractor, and complies with the Lease and all other reasonable restrictions and conditions Landlord may impose, and (ii) prior to the completion of Landlord's Work, to inspect and observe work in process; all such access shall be during normal business hours or at such other times as are reasonably designated by Landlord. Notwithstanding the foregoing, Tenant shall have no right to enter onto the Premises or the Project unless and until Tenant shall deliver to Landlord evidence reasonably satisfactory to Landlord demonstrating that any insurance reasonably required by Landlord in connection with such pre-commencement access (including, but not limited to, any insurance that Landlord may require pursuant to the Lease) is in full force and effect. Any entry by Tenant shall comply with all established safety practices of Landlord's contractor and Landlord until completion of Landlord's Work and acceptance thereof by Tenant.

(b) **No Interference.** Neither Tenant nor any Tenant Party (as defined in the Lease) shall interfere with the performance of Landlord's Work, nor with any inspections or issuance of final approvals by applicable Governmental Authorities, and upon any such interference, Landlord shall have the right to exclude Tenant and any Tenant Party from the Premises and the Project until Substantial Completion of Landlord's Work.

(c) **No Acceptance of Premises.** The fact that Tenant may, with Landlord's consent, enter into the Project prior to the date Landlord's Work is Substantially Complete for the purpose of performing Tenant's Work shall not be deemed an acceptance by Tenant of possession of the Premises, but in such event Tenant shall defend with counsel reasonably acceptable by Landlord, indemnify and hold Landlord harmless from and against any loss of or damage to Tenant's property, completed work, fixtures, equipment, materials or merchandise, and from liability for death of, or injury to, any person, caused by the act or omission of Tenant or any Tenant Party, except to the extent caused by the willful misconduct or gross negligence of Landlord Indemnified Parties.

7. **Miscellaneous.**

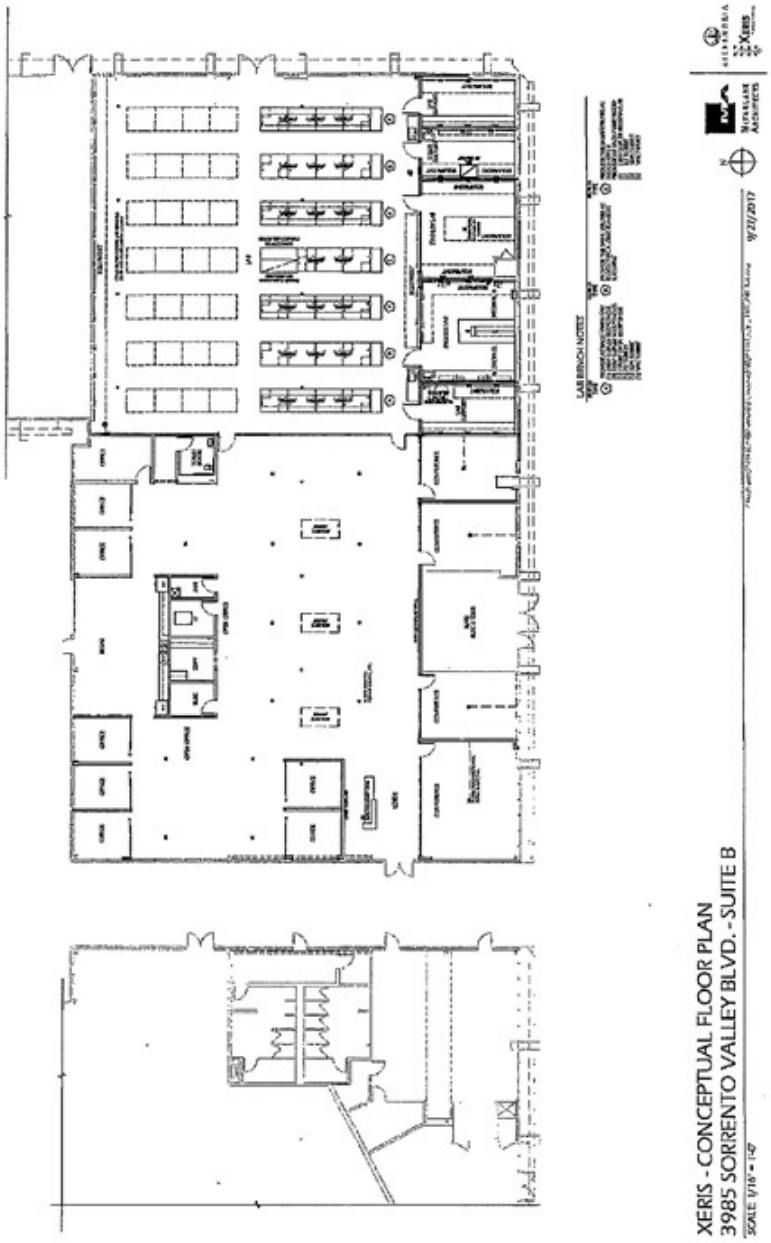
(a) **Consents.** Whenever consent or approval of either party is required under this Work Letter, that party shall not unreasonably withhold, condition or delay such consent or approval, unless expressly set forth herein to the contrary.

(b) **Modification.** No modification, waiver or amendment of this Work Letter or of any of its conditions or provisions shall be binding upon Landlord or Tenant unless in writing signed by Landlord and Tenant.

(c) **No Default Funding.** In no event shall Landlord have any obligation perform any Landlord's Work during any period that Tenant is in Default under the Lease.

Schedule 1

Space Plans



Schedule 2

Tl Specifications

September 26, 2017

Xeris
3985 Sorrento Valley BIvd
Basis of Design

Re: Outline Specification – Tenant Improvement

OVERVIEW	The project consists of approximately 17,105 rentable square feet on one level. The program areas for the project will be roughly as follows: • Approximately 6,944 net square feet of Lab and Lab Support space • Approximately 5,948 net square feet of Private & Open Office (includes open office circulation) • Approximately 2,420 net square feet of Common Areas (such as conference rooms, break areas, reception/lobby, mail and copy room)
CODE COMPLAINCE	Design and construction shall conform to all Federal, State and Local current building codes and ordinances to include but is not limited to: • California Building Code • California Mechanical Code • California Plumbing Code • California Fire Code • California Electrical Code • Local Fire Department Regulations • National Fire Protection Code • Title 24, California Energy Efficiency Standards • California Division of Occupational Safety and Health • San Diego Municipal Code
LEED CERTIFICATION	The design of the tenant improvements has no LEED certification requirements.
ROOFTOP EQUIPMENT	All rooftop equipment will be screened with a minimum screen height required to meet city requirements. Cladding to be metal panels or siding finished to match the metal panels on the building.
INTERIOR PARTITIONS	• **Metal stud and drywall partitions per the tenant's floor plan. 3-5/8" studs typical, 6" as required, gage and spacing as required by code, and Type X, 5/8" drywall. Standard Interior partitions penetrate ceiling grid by 6".** • Full height partitions, to the underside of structure, will be provided at all perimeters of lab suites, conference rooms, restrooms and where sound/security requirements occur. • Fire rated assemblies as required by code, full height, tunnel or shaft wall construction as approved by code.

	• Backing is required in any walls where casework, appliances, equipment or fixtures will be mounted and should be coordinated with the structural engineer to determine any specialty requirements for heavy loads. • Smooth drywall finish to Level 4 in finished areas.
INSULATION	Batt insulation as required for sound control at conference rooms, restroom cores, equipment rooms, and private offices.
DOORS, FRAMES & HARDWARE	General • Hardware includes components and ratings as required by code. • **Keying to be compatible with the Landlord's master system** Offices/General Use Area • **Interior door assemblies are 3'x9' or 6'x9' pair**, **solid core**, **wood veneer**, **flush face** doors with no added urea-formaldehyde resins. • sliding glass doors or wood swing doors **are 3'x9'at-**off ices • Anodized aluminum frames, natural finish, **3'x9' or 6'x9' pair** with full glazed fronts at offices and conference rooms. • Leverstyle, heavy duty, satin aluminum hardware. • Interior doors are passage locksets Lab/Lab Support/Equipment/Storage Areas • Door assemblies to be **3'x9'**, **3'6"x9'**, **6'x9'** or uneven pairs and match offices. Where function dictates painted hollow metal doors and fully welded frames will be provided. • Doors stained to match offices with vision lites as dictated by function. • Leverstyle, heavy duty, satin aluminum cylindrical passage latch-set and lockset (as dictated by function) hardware and 34" **high** armor kick plates on the push side of doors.
WINDOWS	Frames to match style of doorframes in office areas or hollow metal fully welded frames with function dictates,
CEILING SYSTEMS	General • **Ceiling height to be 10'0". All ceilings less than 10'0" require Landlord review and** approval prior to installation of overhead mechanical systems • Gypsum board or T-Bar suspension installation per code. Office Area • **Armstrong 2'x2'** grid system, like **9/16" Suprafine with 1/8" revel, white** or similar • **Armstrong 2'x2' acoustical tile, Calla #2824 NRC.85, white** or similar • Provide Axiom finish edge at perimeter where adjacent is open • Open office areas to be exposed to structure, cleaned, and painted or exposed wood finish.

	• Lobby and Conference Rooms; combination of hard lid, soffits, and acoustical tile Lab/Lab Support/Equipment/Storage Areas • **Armstrong 2'x4' 15/16" exposed T**-Grid, white • **Armstrong 2"x4'**vinyl faced gypsum tiles or similar Hard lid — Gypsum board ceiling areas • Linear mechanical diffusers to be standard in hard lid areas.
WINDOW Coverings	MechoShade Systems or equal roller shades, with manual controls, mounted within blind pocket.
MILLWORK/ LABORARY CASEWORK	Millwork • Construction Designation APA C-D plugged with exterior glue, 3/4" thick or3/4" high- pressure particle board with no added urea-formaldehyde containing resins for Lunch and Break Rooms, Copy/Work Rooms and Conference Rooms • Adhesive compliant with Indoor Air Quality criteria per ASTM D-5116 • Cabinets, countertops and splashes shall be plastic laminate finish and constructed in accordance with WI Manual of Millwork • Countertops in wet areas shall be solid surface or quartz • Self-closing hinges with vertical, horizontal and depth adjustment • Adjustable shelf standards, full extension, heavy-duty drawer glides Laboratory Casework • Lab casework shall be metal Hanson Lab Furniture, Thermo Fisher or equivalent, or plastic laminate and constructed in accordance **with WI Manual of Millwork**, "**Custom**" grade • Self-closing hinges with vertical, horizontal and depth adjustment • Adjustable shelf standards, full extension, heavy duty drawer glides • Countertops in labs to be TRES PA, epoxy or equivalent
FLOOR COVERING	Genera! • All adhesives compliant with Indoor Air Quality criteria per ASTM D-5116 • Flooring in laboratory areas extend wail to wall with casework set on top of flooring Office and Administration Areas • Exposed concrete, Broadloom or Carpet tile with a minimum allowance of $36,00 per square yard • Adhesives and floor prep per manufacturers recommendation • **4" top set rubber base** Lab/Lab Support/Equipment/Storage Areas • Vinyl Composition Tile, Armstrong or equivalent,**12"x24"x1/8**" • **4" top set rubber base** at walls and casework including kneeholes

PAINT	**Paint shall not exceed the VOC and chemical component limits of Green Seal's Standard** GS-11.
RESTROOMS	Finishes in restrooms include: • Floors and wet walls to be finished with ceramic, porcelain or stone tile (full height on wet walls) • Solid surface countertops with full coverage plastic laminate aprons. • Stainless steel toilet partitions or approved equivalent by Landlord. • Stainless steel Bobrick accessories or approved equivalent by Landlord, • Drywall ceilings with recessed can lights and cove lighting above toilets, urinals and mirrors
LAB SUPPORT EQUIPMENT	Landlord will provide the following: • Vacuum Pump • Air Compressor • Tenant to provide DIS kid, BSC s, and other lab equipment
SPECIALTIES	• Stainless steel corner guards will be provided on the exterior corners of the Lab and Lab Support areas • Drying racks and paper towel dispensers will be provided at the Lab and Lab Support sinks • Dish washer in main lunch room
FIRE PROTECTION	Fire Sprinklers • Spacing and number of heads shall comply with recommendations of NFPA 13 for type of occupancy • Ceiling mounted high temperature heads (pendant, natural brass with chrome finish, semi-recessed with matching adjustable metal escutcheon) shall be used in those areas required by tenant such as the Server Room. • Semi-Recessed, stainless steel fire extinguisher cabinets with dry chemical fire extinguisher bottles as required by code: Sentry 5 or equivalent • Concealed recessed pendants shall be provided at all hard lid/gypsum board ceiling areas. Cap to be white or chrome dependent on application and as approved by Landlord, Fire Alarm • Improvements to include all devices required by code and must be connected to the building fire alarm system

PLUMBING - TENANT IMPROVEMENT MINIMUM CRITERIA

CODE COMPLIANCE

- All work shall be in strict conformance with the following codes &standards
  - CA Plumbing Code
  - CA Building Code
  - CA Fire Code
  - Local Fire Department Regulations
  - National Fire Protection Association
  - All other Authorities Having Jurisdiction
- All water fixtures used in general office space including restrooms but not including Process Fixtures, shall exceed the minimum rating by 30% specified in the Energy Policy Act of 1992, in accordance with LEED calculations
- Adhesives shall comply: VOC content shall be less than the current VOC content limits of SCAQMD Rule #1168, AND all sealants used as fillers must meet to exceed the requirements of the South Coast Air Quality Management District Regulation 8, Rule 51

PRINCIPAL SYSTEMS

Principal Systems that may be Included in the Design

- Sanitary sewer drain, waste &vent- all spaces above ground level drain by gravity to the public sewer. To be field verified by new building layout.
- Industrial (Lab) waste —connect to public sewer through sample port
- Compressed Air (CA) Compressor fed [Clean Dry Air to be confirmed by tenant needs).
- Specialty gases, (N2, C02) Bottle fed
- Lab Vacuum System
- WaterSystems (ICW, IHW, DCW, DHW).
- Purified water systems (Dl) to be via point of use units per tenant
- Natural gas service to be provided to serve project needs, pending tk1sc review of site and Landlord approval.
- If localized hot water is required, instantaneous electric domestic hot water heaters may be used to serve lavatories and sinks in the, tenant suites
- Condensate drain piping runs from the HVAC units to the nearest indirect waste **receptor** (**max**. **60**" **AFF**.) **or to a Janitor's Sink**

MATERIALS

- Soil, Waste and Vent above Ground: Service-weight, no-hub cast-iron pipe and fittings
- Soil, Waste and Vent Below Ground and to 5'-0" Outside of Building: Service-weight cast-iron hub & spigot pipe and fittings
- Industrial (Lab) Waste and Vent piping above ground to be plenum rated polypropylene DWV
- Industrial (Lab) Waste and Vent piping below ground to be polypropylene DWV.

- Industrial (Lab) Waste piping to route to a sample port just prior to connection to sanitary system
- Water and Condensate Drain Piping Above Ground: Type “L” hard-drawn copper type, ASTM B88, and wrought copper fittings, ANS I B1 6.22. All hot water supply piping shall be insulated with 1-1/2-inch thick fiberglass insulation for sizes up to 2-1/2 inch size, **2”** inch thick above 2-inch size piping. Condensate drain piping above ceilings to be insulated
- Water Piping Below Ground 4-inches and smaller: Type “K” hard-drawn copper tubing, ASTM B88, and wrought copper fittings ANS I B 16.22, silver brazed joints
- Natural Gas Piping: Buried piping to be Polyethylene per ASTM D2513; above grade to be Schedule 40 black steel per ASTM D2513 Indirect Drains: Type “L” copper fittings, ANSI B16.22, solder joint type. Insulate with Manville Micro-Lok 650AP if temperature dictates
- Specialty gas and lab vacuum piping shall be type L copper, silver brazed. C leaned and capped to meet NFPA 99.
- Deionized Water: Pigmented polypropylene with IR fusion joints
- Adhesives shall comply: VOC content shall be less than the current VOC content limits of SCAQMD Rule sealants used as fillers must meet or exceed the requirements of the South Coast Air Quality Management District Regulation 8, Rule 51

PLUMBING EQUIPMENT

- Domestic Water Heater; Domestic hot water will be provided by a combination boiler and storage tank with circulation pump, expansion tank and master thermostatic mixing valve serving showers, lavatories, sinks and emergency showers,
- Industrial Water Heater: Industrial hot water will be provided by a combination of boiler with cupro Nickel heat exchanger for soft water service and storage tank with circulation pump and expansion tank serving cage washer, glass washers, sterilizers and laboratory sinks,
- Air Compressor: Quadruplex open scroll clean dry air compressor with 100 psi distribution pressure and air receive rand desiccant air dryer. Premium controls.
- Vacuum Pump Quadruplex lubricated **vane vacuum pump with 19**” **Hg distribution** pressure with air receiver. Premium controls.
- Dl Skid & Pretreatment (By Tenant): High Efficiency RO/DI system with ultralow pressure RO, nominal 35 gpm. Estimated capacity 500 gallons per day. Shall include VFD distribution pumps, 500-gallon tank, UV sterilizers and final filters.
- Bulk Gas Tanks (By Tenant)
- Steam: electric steam generators provided by autoclave manufacturer
- Water Closets, ADA Compliant Handicap-height, vitreous china, wall mounted, floor outlet, low-flush toilet with flush valve
- Water Closet: Vitreous china, wall mounted, floor outlet, low-flush toilet with flush valve
- Urinal, ADA Compliant: Wall hung, vitreous china, low-flush urinal with flushometer. Mount at handicap height

- Urinal; Wall hung, vitreous china, low-flush urinal with flushometer
- Lavatory: Vitreous china wall hung lavatory with a single temperature-metering faucet
- Faucet Infra-red sensor control restroom faucet on 120 v power
- Lab sink: stainless steel or epoxy, sizes to be determined,
- Lab Turrets: Bench and utility panel mount
- Scullery sink; Double compartment stain less steel sink with 14 in. deep basin
- Service Sink: Corner model, terrazzo mop service basin with vacuum breaker faucet Emergency Shower/Eyewash: Guardian Model GBF2352 or equivalent
- Electric Water Cooler: Barrier-free, wall hung water cooler with push bar control and equipped for handicap usage
- All water fixtures used in general office space including restrooms but not including Process Fixtures, shall exceed the minimum average rating by 30% specified in the Energy Policy Act of 1992, in accordance with LEE D calculations
- Break rooms shall have either double compartment 18-gauge stainless steel sinks.

DRAINS

- FloorDrains: Cast iron body floor drains with nickel bronze top, membrane clamp and adjustable collar
- FloorSinks: Cast iron body receptor with acid-resistant coated interior, bottom dome strainer, seepage flange and grate

HVAC – TENANT IMPROVEMENT MINIMUM CRITERIA

CODE COMPLIANCE

- All work shall be in strict conformance with the following codes and standards
  - CA Mechanical Code
  - CA Plumbing Code
  - CA Building Code
  - CA Fire Code
  - Local Fire Department Regulations
  - National Fire Protection Association
- All other Authorities Having Jurisdiction

PRINCIPAL SYSTEMS

- Summer-Winter HVAC systems for all occupied areas, including corridors and restrooms
- Tenant spaces shall be conditioned by rooftop package units, All Laboratories will be exhausted via utility sets.
- Fume hood and any bio-safety cabinet exhaust will be exhaust by a high plume exhaust fan discharging at a minimum of 10 feet above the roof surface,
- A heating hot water system will be provided to serve building heating or an equal alternate approved by the landlord.

	• Server room will be provided with an independent split system for 24/7 operation • Toilet exhaust systems for all restrooms and janitor rooms per code • Building DDC controls based on an open source protocol (Bacnet). Siemens or Johnson Controls or approved equivalent.
NEW HEATING PLANT AND GAS METER	As part of the Tenant Improvement, a new natural gas heating plant shall be installed to **provide all of Tenant's heating requirements**, **Natural gas shall be supplied from a new** dedicated gas meter.
OFFICE AREAS	Rooftop package units will serve the office areas.
LAB AREAS	These areas shall be serviced by rooftop 100% OSA packaged units equipped as described below. Space will either be zoned via Independent rooftop package units or via a larger rooftop unit with terminal boxes equipped with heating hot water coils as approved by Landlord for budget purposes, The units shall be on the roof.
CRITICAL PROGRAM AREAS	Areas that require continuous 7/24 operation (computer rooms, network server rooms, etc.) shall be considered for dedicated stand-alone air cooled DX systems. The system configuration shall be dependent on room capacity requirements.
ROOFTOP	Custom Packaged Units with the following minimum components and accessories: • Double wall outdoor construction • Plenum supply fan(s) **with high efficiency motors and VFD's** • Airflow monitoring stations • Moisture eliminator section • Filtration with 2 in. 30/30 pre-filters and 85% final filters as required, • Direct expansion cooling coil • Heating hot water coil. • Stainless steel drain pan
ENVIRONMENTAL DESIGN CONDITION	The following criteria will be used for sizing the heating and cooling systems: • Outdoor Ambient Design Conditions: Summer: 91 F dB, 72° F mwB, 13° F dB outdoor daily range Winter: 38° F dB • Indoor Conditions for Air Conditioned Area: • Offices, Labs: 72 F dB ±3 F dB, No Humidity Control • Electrical, Telecom, Storage: Typical of office space, unless equipment requires a more specifically controlled environment • Server Rooms: 68° F dB + 3 Db

VENTILATION AIR REQUIREMENTS	• Outdoor air for ventilation will meet or exceed the requirements of the American Society of Heating Ventilating and Air Conditioning
	• Engineers (ASHRAE) Standard 62-1989, Ventilation for Acceptable Indoor Air Quality.
	• For laboratory areas provide 100% outside air. The following minimum air change requirements are recommended with night setback to be determined:
	  • Biology Areas 6AC/Hr
	  • Chemical Storage 15AC/Hr

ENERGY USE AND CONSERVATION	The Energy Efficiency Standard, Title 24, to be used to set the minimum performance requirements of this installation
CEILING REGISTERS AND DIFFUSERS	• Ceiling diffusers with perforated face with frame style compatible with the type of ceiling used. • Surface mounted diffusers require gaskets to prevent leakage. Diffuser faceplate to have concealed hinges and latches. Faceplates to be easily removable from the frame. • Supply diffusers, Titus-PMC or equivalent perforated modular face-size 24” X 24” for lay-in ceiling tile. • Linear diffusers for all hard lid areas. Specialty diffusers by area as required
DUCT WORK	• Supply ducts, return ducts, and exhaust ducts plenum chambers, housing, and panels fabricated from zinc-coated (galvanized) steel sheets conforming to the latest ASTM Specs A-525. Zinc-coating to be of the “Commercial” class • Exhaust branch duct from fume hoods shall be PVC coated galvanized or 304 **stainless steel a minimum of 10’ from main exhaust duct**. • Exhaust duct from Glasswash or Cagewash areas shall be sloped 304 stainless **steel a minimum of 10’ from main exhaust duct**. • Ductwork shall be installed in strict accordance with the latest SMAC NA guidelines and shall also adhere to the latest State and Federal seismic requirements. • Install flexible ducts in a fully extended condition free of sags and kinks, using minimum length required for connection. Flexible duct suspended on 36” centers with a min 3/4” wide flat banding material where horizontal support is required. Joints and connections to be made in accordance with Underwriters Laboratories, Inc. Connect to rigid sheet metal with min 1/2” wide collar positively clamped and secured with screws or other approved fastening.
TOILET EXHAUST VENTILATION	Exhaust all restrooms and janitor rooms with a minimum of 12 air changes per hour
MISC EXHAUST VENTILATION SYSTEMS	The following exhaust system will be installed as part of the shell design, it is assumed that outside ambient air shall provide makeup air to the exhausted area: • Main Electrical Room,

CONTROLS	• Electronic DDC building automation system control the central plant building core areas and tenant mechanical systems including zone temperature control. The system will operate the HVAC system and control occupied and non-occupied temperature and ventilation schedules. The system will include monitoring, alarm and by-pass functions for efficient energy management

ELECTRICAL — TENANT IMPROVEMENT MINIMUM CRITERIA

CODE COMPLAINCE	All work shall be in strict conformance with the following codes and standards • NFPA 70 National Electrical Code • NFPA 101 Life Safety Code • BOCA Building Codes • IES - Illuminating Engineering Society of North America

DISTRIBUTION	• SDG&E electrical room main distribution switchgear is existing to remain, Existing service is 3000A at480Y/277V, 3 phase, 4 wire.
	• There are two existing meters available:
	  • Meter #1: 480V, 500A Service, Meter #5582943
	  • Meter#2;-480V, 400A Service, Meter#6578928
	• All distribution will be from the main gear to each **tenant's** dedicated electric room(s).
	• All conductors for new equipment to be installed as new
	• New HVAC equipment to be fed from new electrical panelboard(s),
	• Panelboards and distribution boards shall be located **in the tenant's** electrical rooms to feed the office/lab and support areas or within the lab area as appropriate,
	• All new transformers are energy efficient Energy Star type
	• Tenant to provide 208V branch circuit panelboards within the tenant space

DISTRIBUTION EQUIPMENT	Panelboards • All Panelboards to be new surface mounted and stacked if necessary, inside the dedicated electrical rooms or flush mounted if outside the electrical room • Panelboards for lighting to be 480Y/277V 3j 4W to be fully rated for fault current. All Electrical panels are to be located in electrical equipment rooms or within the lab area as appropriate. • Panelboards for power and control power shall be 208Y/1Z0V 3j 4W with minimum fault current ratings of 10,000 AIC. Panelboards served through transformers shall have integral main over current protection, sized as indicated on the drawings. • All panelboards shall have, 42-pole space, bus ratings (as indicated on the panel schedules) and are either surface or flush mounted (as Indicated on the panel schedules), All panels located in electrical rooms to be stacked or switchboard mounted to minimize space used by the panels

- Panelboards with an isolated ground bus are required as noted. All 208Y/120V 3j 4W panelboards shall be provided with 100% rated neutral bus.

Feeders

- Feeders shall be copper conductors (Type THHN or THW) routed in electro metallic tubing (EMT), polyvinylchloride (PVC) conduit, or rigid galvanized steel (RGS) conduit. EMT shall be used in all indoor, concealed locations where the feeder is protected from damage or weather. RGS conduit shall be used in exterior applications or where the conduit may be exposed to physical damage. PVC shall be used for all below-grade applications.
- Feeders' shall be sized according to the single line diagram in the construction documents.
- Feeders shall be rack-mounted in accessible ceiling spaces or routed below grade under the slab

EMERGENCY POWER SYSTEM

Emergency power systems are provided and maintained by Tenant Existing site generator and transfer switches are available for tenant's use if they choose.
Existing generator shall meet the following requirements:

- Existing generator tanks are sub-base mounted and provided as a complete package without grade or in-grade fuel tank
- Existing generator is provided in a weather rated NE MA 3R enclosure and be UL2200 compliant
- Existing generator to be standard sound attenuated enclosures rated if required to **reduce noise to 75 db at 23' from enclosure**

BRANCH CIRCUITRY

Conduit and Wire

- Branch circuits for all power circuits serving furniture partition systems, office power, convenience outlets, control power, etc. to be nominally sized as 120V 20A.
- Branch circuits for lighting circuits to be either 27.7V 20A unless specifically indicated otherwise
- All Lab area branch circuit conductors to be copper and routed in metal conduit.
- Each office to include (2) duplex receptacles, and (1) ring and string devices per 130 SF office. Quantity to be adjusted per square footage room size. Controlled receptacles to be included as necessary per Title 24 requirements. Controlled receptacles are not required when existing electrical service is maintained.
- Systems furniture feeds to.be provided as (4) circuit{8) wire systems with three normal circuits and one dedicated circuit, Controlled receptacles to be included as necessary per Title 24 requirements. Controlled receptacles are not required when existing electrical service is maintained.
- Branch circuits may be increased in size for specific loads or as necessary to prevent excessive voltage drop on longer circuits.
- MC Cable to be provided for concealed areas of routing as indicated on drawings,

Mechanical Equipment

- Power provided from the 480 V or208 Y/120 V system for line voltage to mechanical equipment
- Smoke detectors, time clocks, relays, contactors, etc, by the mechanical contractor.
- Motor starters and disconnect switches by the electrical contractor according to the mechanical equipment control wiring diagrams,

ELECTRICAL DEVICES

- Electrical devices Including (receptacles and switches) shall be rated according to the load served.
- Electrical devices shall be Decora type, white in color with white thermoplastic cover plates.
- Cover plates for receptacles and junction boxes shall be labeled indicating the circuit and panelboard from which the device is fed.
- All floor furniture feeds shall be flush type or pedestal, and flush type to be provided at conference rooms. Floor devices must be 2 hour rated.

LIGHTING

Lighting Systems

- Fixtures shall be suitable for the application including the ability to provide egress illumination where required.
- Fixtures shall meet U.L. requirements and selection and placement of fixtures shall comply with ADA requirements.
- All lighting fixtures shall operate at 277 V unless specifically noted otherwise,
- Lighting Power Densities (LPD) must exceed with the Title 24 energy savings by 25% -*35%* to comply with LEED Silver Certification efforts.
- Office and Lab areas to consist of direct/indirect linear pendant style fixtures or recessed direct/indirect light fixtures. Dimmable LED lighting to. be used to the maximum extent possible.
- Exit Lights -Edge lit, Green on clear, 120/277, EL N.

Lighting Control Systems

- Lighting control must com ply with Title 24 requirements (including over-ride control for automatically shutting the lights off at prescribed periods of time and the ability to override the lighting control for up to two hours of use).
- Lighting control equipment shall include a programmable lighting control panel, relay panels (quantity as necessary), over-ride switches (distributed throughout the space), and interconnecting conductors.
- Control zones to include perimeter areas for daylit spaces, skylit areas, and interior areas under5,0005F.
- Occupancy sensors will be provided for all offices less than 250 square feet and conference rooms per Title 24 requirements. All other areas will be coordinated as to whether occupancy sensor or timeclock controlled shut-off will be provided.

	• Corridors will be provided with partial off (atleast50%) occupancy sensors, • Each room shall be controlled by dimming switching for local control. • Each private enclosed office to be provided with wall mounted dimmable switching and a ceiling mounted motion sensor. Manufacturer: Wattstopper or equal. • Photocells and dimming to be installed per Title 24 requirements, • Demand response capability will be provided.
TELEPHONE/ DATA ROOM AND LOW VOLTAGE WIRING	Telephone/Data Room and Low Voltage Wiring • The shell MPOE room shall be used, and a conduit path to be provided to additional IDF rooms as required. All telephone/data materials and installation are part of the tenant improvement allowance
AUXILIARY SYSTEMS	Auxiliary Systems such as card readers, CCTV camera and AV are outside the scope of **this project and will be installed separately as part of the Tenant's effort**. **The Landlord** must approve device appearance and locations.

EXHIBIT D TO LEASE

ACKNOWLEDGMENT OF COMMENCEMENT DATE

This ACKNOWLEDGMENT OF COMMENCEMENT DATE is made this _____ day of _____, _____, between **ARE-SD REGION NO. 30, LLC**, a Delaware limited liability company ("**Landlord**"), and **XERIS PHARMACEUTICALS, INC.** ("**Tenant**"), and is attached to and made a part of the Lease dated _____, _____ (the "**Lease**"), by and between Landlord and Tenant. Any initially capitalized terms used but not defined herein shall have the meanings given them in the Lease.

Landlord and Tenant hereby acknowledge and agree, for all purposes of the Lease, that the Commencement Date of the Base Term of the Lease is _____, _____, and the termination date of the Base Term of the Lease shall be midnight on _____, _____. In case of a conflict between the terms of the Lease and the terms of this Acknowledgment of Commencement Date, this Acknowledgment of Commencement Date shall control for all purposes.

IN WITNESS WHEREOF, Landlord and Tenant have executed this ACKNOWLEDGMENT OF COMMENCEMENT DATE to be effective on the date first above written.

TENANT:

XERIS PHARMACEUTICALS, INC.,
a Delaware corporation

By: _____
Its: _____

LANDLORD:

ARE-SD REGION NO. 30, LLC,
a Delaware limited liability company

By: ALEXANDRIA REAL ESTATE EQUITIES, L.P., a Delaware limited partnership, managing member

By: ARE-QRS CORP., a Maryland corporation, general partner

By: _____
Its: _____

EXHIBIT E TO LEASE

Rules and Regulations

1. The sidewalk, entries, and driveways of the Project shall not be obstructed by Tenant, or any Tenant Party, or used by them for any purpose other than ingress and egress to and from the Premises.

2. Tenant shall not place any objects, including antennas, outdoor furniture, etc., in the parking areas, landscaped areas or other areas outside of its Premises, or on the roof of the Project.

3. Except for animals assisting the disabled, no animals shall be allowed in the offices, halls, or corridors in the Project.

4. Tenant shall not disturb the occupants of the Project or adjoining buildings by the use of any radio or musical instrument or by the making of loud or improper noises.

5. If Tenant desires telegraphic, telephonic or other electric connections in the Premises, Landlord or its agent will direct the electrician as to where and how the wires may be introduced; and, without such direction, no boring or cutting of wires will be permitted. Any such installation or connection shall be made at Tenant's expense.

6. Tenant shall not install or operate any steam or gas engine or boiler, or other mechanical apparatus in the Premises, except as specifically approved in the Lease. The use of oil, gas or inflammable liquids for heating, lighting or any other purpose is expressly prohibited. Explosives or other articles deemed extra hazardous shall not be brought into the Project.

7. Parking any type of recreational vehicles is specifically prohibited on or about the Project. Except for the overnight parking of operative vehicles, no vehicle of any type shall be stored in the parking areas at any time. In the event that a vehicle is disabled, it shall be removed within 48 hours. There shall be no "For Sale" or other advertising signs on or about any parked vehicle. All vehicles shall be parked in the designated parking areas in conformity with all signs and other markings. All parking will be open parking, and no reserved parking, numbering or lettering of individual spaces will be permitted except as specified by Landlord.

8. Tenant shall maintain the Premises free from rodents, insects and other pests.

9. Landlord reserves the right to exclude or expel from the Project any person who, in the judgment of Landlord, is intoxicated or under the influence of liquor or drugs or who shall in any manner do any act in violation of the Rules and Regulations of the Project.

10. Tenant shall not cause any unnecessary labor by reason of Tenant's carelessness or indifference in the preservation of good order and cleanliness. Landlord shall not be responsible to Tenant for any loss of property on the Premises, however occurring, or for any damage done to the effects of Tenant by the janitors or any other employee or person.

11. Tenant shall give Landlord prompt notice of any defects in the water, lawn sprinkler, sewage, gas pipes, electrical lights and fixtures, heating apparatus, or any other service equipment affecting the Premises.

12. Tenant shall not permit storage outside the Premises by Tenant or any Tenant Parties, including without limitation, outside storage of trucks and other vehicles, or dumping of waste or refuse or permit any harmful materials to be placed in any drainage system or sanitary system in or about the Premises by Tenant or any Tenant Parties.

13. All moveable trash receptacles provided by the trash disposal firm for the Premises must be kept in the trash enclosure areas, if any, provided for that purpose.

14. No auction, public or private, will be permitted on the Premises or the Project

15. No awnings shall be placed over the windows in the Premises except with the prior written consent of Landlord.

16. The Premises shall not be used for lodging, sleeping or cooking or for any immoral or illegal purposes or for any purpose other than that specified in the Lease. No gaming devices shall be operated in the Premises.

17. Tenant shall ascertain from Landlord the maximum amount of electrical current which can safely be used in the Premises, taking into account the capacity of the electrical wiring in the Project and the Premises and the needs of other tenants, and shall not use more than such safe capacity. Landlord's consent to the installation of electric equipment shall not relieve Tenant from the obligation not to use more electricity than such safe capacity.

18. Tenant assumes full responsibility for protecting the Premises from theft, robbery and pilferage.

19. Tenant shall not install or operate on the Premises any machinery or mechanical devices of a nature not directly related to Tenant's ordinary use of the Premises and shall keep all such machinery free of vibration, noise and airwaves which may be transmitted beyond the Premises.

EXHIBIT F TO LEASE

TENANT'S PERSONAL PROPERTY

None.

EXHIBIT G TO LEASE

MAINTENANCE OBLIGATIONS

Multi-Tenant Maintenance Responsibilities
3985 Sorrento Valley Blvd.
Xeris Pharmaceuticals

Maintenance Responsibilities: Multi-Tenant, ARE-Managed Utilities	**Xeris**	**ARE**
Water-domestic		✓
Water-irrigation		✓
Gas -tenant premises	✓	
Gas - common area		✓
Electric-tenant premises	✓	
Electric - common area		✓
Exterior / Site		
Landscaping		✓
Pest control - exterior		✓
Parking lot sweeping		✓
Project security (nightly rounds)		✓
Parking lot lighting		✓
Exterior monument and footpath lighting		✓
Landscape irrigation		✓
Exterior window washing		✓
Roof inspections		✓
Trash & recycling pickup		✓
Domestic backflow preventer certification - Industrial / Domestic		✓
Domestic backflow preventer certification - Fire		✓
Building Interior and Central Plant		
Cold rooms	✓	
Autoclaves	✓	
Glassware washers	✓	
RO/DI laboratory water systems	✓	
Air compressors	✓	
Vacuum pumps	✓	
Laboratory gas distribution systems	✓	
Emergency eyewash and shower stations	✓	
Internal UPS units	✓	
Fire extinguisher inspection / certification - tenant premises	✓	
Fire extinguisher inspection / certification - common area		✓
Fire sprinkler system		✓
Fire alarm system (and phone lines)		✓
Building HVAC equipment-tenant premises	✓	
Building HVAC equipment - common area		✓
Smoke fire dampers	✓	
Security (burglar alarm) - tenant premises	✓	
Access controls - tenant premises	✓	
Access controls - common area		✓
Janitorial - tenant premises	✓	
Janitorial-common areas		✓
l/R Testing of electrical systems		✓
Emergency generator		✓
Environmental monitoring	✓	

EXHIBIT H TO LEASE

ASBESTOS DISCLOSURE

NOTIFICATION OF THE PRESENCE OF ASBESTOS CONTAINING MATERIALS

This notification provides certain Information about asbestos within or about the Building in accordance with California Code of Regulations, title 8, section 1529 and Section 25915 et. seq. of the California Health and Safety Code.

Historically, asbestos was commonly used in building products used in the construction of buildings across the country. Asbestos-containing building products were used because they are fire-resistant and provide good noise and temperature insulation. Because of their prevalence, asbestos-containing materials, or ACMs, are still sometimes found in buildings today.

The Building has undergone several rounds of improvement since its original construction in 1976. These improvements included interior demolition and related ACM abatement down to concrete floors and studs according to former facility personnel. However, no documentation regarding the removal of ACMs is available and an asbestos survey has not been performed. Considering the extensive improvements conducted, it's unlikely that ACMs are present in the building. Nonetheless, due to the lack of abatement documentation, the present of ACMs or PACMs cannot be ruled out.

Because ACMs and PACMs may be present within or about the Building, we have hired an independent environmental consulting firm to prepare an operations and maintenance program ("**O&M Program**"). The O&M Program is designed to minimize the potential of any harmful asbestos exposure to any person within or about the Building. The O&M Program includes a description of work methods to be taken in order to maintain any ACMs or PACMs within or about the Building in good condition and to prevent any significant disturbance of such ACMs or PACMs. Appropriate personnel receive regular periodic training on how to properly administer the O&M Program.

The O&M Program describes the risks associated with asbestos exposure and how to prevent such exposure through appropriate work practices. ACMs and PACMs generally are not thought to be a threat to human health unless asbestos fibers are released into the air and inhaled. This does not typically occur unless (1) the ACMs are in a deteriorating condition, or (2) the ACMs have been significantly disturbed (such as through abrasive cleaning, or maintenance or renovation activities). If inhaled, asbestos fibers can accumulate in the lungs and, as exposure increases, the risk of disease (such as asbestosis or cancer) increases. However, measures to minimize exposure, and consequently minimize the accumulation of asbestos fibers, reduce the risks of adverse health effects.

The O&M Program describes a number of activities that should be avoided in order to prevent a release of asbestos fibers. In particular, you should be aware that some of the activities which may present a health risk include moving, drilling, boring, or otherwise disturbing ACMs. Consequently, such activities should not be attempted by any person not qualified to handle ACMs.

The O&M Program is available for review during regular business hours at the Landlord's office located at 10996 Torreyana Road, Suite 250, San Diego, CA 92121.