

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
WASHINGTON, D.C. 20549

**FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

Lyra Therapeutics, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

3841
(Primary Standard Industrial
Classification Code Number)

84-1700838
(I.R.S. Employer
Identification No.)

**480 Arsenal Way
Watertown, MA 02472
(617) 393-4600**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Maria Palasis, Ph.D.
President and Chief Executive Officer**

**Lyra Therapeutics, Inc.
480 Arsenal Way
Watertown, MA 02472
(617) 393-4600**

(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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities To Be Registered	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee(2)
Common Stock, \$0.001 par value per share	\$	\$

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

(2) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.

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

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

Subject to Completion
Preliminary Prospectus dated _____, 2020

PROSPECTUS

Shares



Common Stock

This is Lyra Therapeutics, Inc.'s initial public offering. We are selling _____ shares of our common stock.

We expect the public offering price to be between \$ _____ and \$ _____ per share. Currently, no public market exists for the shares. After pricing of the offering, we expect that the shares will trade on the Nasdaq Global Market under the symbol "LYRA."

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

Investing in the common stock involves risks that are described in the "[Risk Factors](#)" section beginning on page 11 of this prospectus.

	<u>Per Share</u>	<u>Total</u>
Public offering price	\$ _____	\$ _____
Underwriting discount(1)	\$ _____	\$ _____
Proceeds, before expenses, to us	\$ _____	\$ _____

(1) We refer you to "Underwriting" beginning on page 172 of this prospectus for additional information regarding underwriting compensation.

The underwriters may also exercise their option to purchase up to an additional _____ shares from us, at the public offering price, less the underwriting discount, for 30 days after the date of this prospectus.

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

The shares will be ready for delivery on or about _____, 2020.

Joint Book-Running Managers

BofA Securities

Jefferies

William Blair

Co-Manager

BTIG

The date of this prospectus is _____, 2020.

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

We have proprietary rights to trademarks, trade names and service marks appearing in this prospectus that are important to our business. Solely for convenience, the trademarks, trade names and service marks may appear in this prospectus without the ® and ™ symbols, but any such references are not intended to indicate, in any way, that we forgo or will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensors to these trademarks, trade names and service marks. All trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners.

For investors outside the United States: Neither we nor the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside the United States.

PROSPECTUS SUMMARY

This summary highlights, and is qualified in its entirety by, the more detailed information and financial statements included elsewhere in this prospectus. This summary does not contain all of the information that may be important to you in making your investment decision. You should read this entire prospectus carefully, especially the “Risk Factors” section beginning on page 11 and our consolidated financial statements and the related notes appearing at the end of this prospectus, before deciding to invest in our common stock.

As used in this prospectus, unless the context otherwise requires, references to “we,” “us,” “our” and “Lyra” refer to the consolidated operations of Lyra Therapeutics, Inc. and its subsidiary.

Overview

We are a clinical-stage therapeutics company focused on the development and commercialization of novel integrated drug and delivery solutions for the localized treatment of patients with ear, nose and throat, or ENT, diseases. Our proprietary technology platform, XTreo, is designed to precisely and consistently deliver medicines directly to the affected tissue for sustained periods with a single administration. Our initial product candidates, LYR-210 and LYR-220, are bioresorbable polymeric matrices designed to be administered in a brief, non-invasive, in-office procedure and intended to deliver up to six months of continuous drug therapy to the sinonasal passages for the treatment of chronic rhinosinusitis, or CRS. The therapeutic embedded within LYR-210 and LYR-220 is mometasone furoate, or MF, which is the active ingredient in various U.S. Food and Drug Administration, or FDA, approved drugs and has a well-established efficacy and safety profile. CRS is an inflammatory disease of the paranasal sinuses which leads to debilitating symptoms and significant morbidities and affects approximately 14 million people in the United States. We are advancing LYR-210 as a potential preferred alternative to surgery in an ongoing Phase 2 clinical trial, which we refer to as our LANTERN clinical trial, for CRS patients who have failed medical management, and we expect to report topline data in . In our Phase 1 clinical trial, LYR-210 met its primary safety endpoint, and we observed that patients generally experienced significant and rapid, clinically meaningful and durable improvement in SNOT-22 scores, an established patient symptom severity scale, through week 25, which was the end of the trial. We are also developing LYR-220 for use in CRS patients who have an enlarged nasal cavity due to sinus surgery but continue to require treatment to manage CRS symptoms, and we intend to initiate a proof-of-concept clinical trial for LYR-220 in . Beyond CRS, we believe our XTreo platform has potential applications in other disease areas, which we are actively exploring to further broaden its therapeutic potential.

Chronic Rhinosinusitis: A Prevalent Disease with High Unmet Medical Needs

CRS has been described in the literature as an “unrecognized epidemic” due to its high prevalence, its substantial impact on patient quality of life and the significant limitations of currently available treatment options. We estimate that sinusitis, which includes both CRS and acute rhinosinusitis, impacts approximately 12% of the adult population in the United States, or approximately 30 million people, making it the fifth most common condition in people under the age of 65 and more prevalent than diabetes or heart disease. Of this population, we estimate that approximately 14 million people are affected with CRS. Moreover, we estimate that approximately 8 million people are treated for CRS by physicians annually, of which approximately 4 million fail medical management every year. In the United States, over \$60 billion is spent annually in direct treatment costs for sinusitis, including approximately \$5 billion on sinus surgeries.

Current Treatments and Their Limitations

Current treatments are directed towards managing the symptoms of CRS through a combination of medical management and surgical intervention techniques. The first line of therapy is medical management involving nasal saline irrigation, intranasal corticosteroidal sprays, oral steroids and antibiotics for patients with an active sinus infection. However, these treatments have significant limitations. Topical steroid sprays have

poor efficacy due to their limited ability to reach the site of the disease, fast clearance of drug from the site of delivery and poor patient compliance. Prolonged use of oral steroids may lead to systemic complications which limit their use to short courses. Based on published medical literature, we estimate at least 50% of CRS patients who are seen by ENT physicians and receive medical management remain symptomatic.

Patients whose symptoms persist despite medical management are generally recommended to undergo functional endoscopic sinus surgery (or FESS) or balloon sinus dilation (or BSD), or both. FESS is a highly invasive surgery performed in the operating room, under full anesthesia, to open the blocked sinus pathways by removing inflamed tissue and bone using surgical tools. BSD is a less severe form of endoscopic sinus surgery, often used in combination with FESS, in which small balloon catheters are inserted and inflated to drain the large nasal sinuses. Although FESS and BSD can improve symptoms and quality of life, limitations remain. Neither correct the underlying cause of the inflammation, and patients who undergo either or both procedures often experience significant pain and require continued post-operative medical therapy to maintain improvements, with a high incidence of repeat surgeries.

CRS has two phenotypes: CRS with nasal polyps and CRS without nasal polyps, with the non-polyp form representing approximately 70%-to-90% of all CRS patients. For patients with nasal polyps who remain symptomatic following surgery, who we refer to as refractory patients, there are non-surgical options, such as a steroid-eluting stent and a monoclonal antibody. However, the steroid-eluting stent has only a three month elution profile and has been approved only as an addition to intranasal steroid sprays. In addition, the antibody treatment is reserved for only the most refractory patients, has an unknown long-term systemic safety profile and is priced at a significant premium even when compared to surgical options. Currently, there are no FDA-approved drug therapies for CRS for non-polyp patients, although some drugs approved for nasal polyps are used off-label in this population.

Our XTreo Platform

XTreo, our innovative and proprietary drug delivery platform, is designed to locally and continuously deliver small molecule drugs to the affected tissue over a sustained period of time from a single administration. The platform is comprised of three interrelated technology components:

- a biocompatible mesh scaffold, which is designed to maximize surface area for drug release while maintaining underlying tissue function;
- an engineered elastomeric matrix, which means a polymeric matrix composed of polymers having elastic characteristics, which has advanced physical properties resulting in implants with “shape memory” that dynamically adapt to nasal anatomy; and
- a versatile polymer-drug complex, which can be customized for the treatment of various chronic diseases treatable with ENT delivery to achieve the desired drug dose and drug elution rate.

Our Solution for CRS

LYR-210 is an anti-inflammatory implantable drug matrix based on our XTreo platform that is designed to consistently and locally elute MF to the inflamed mucosal tissue for up to six months in surgically-naïve CRS patients who fail medical management. MF, the active ingredient in various FDA-approved drugs, has a well-established efficacy and safety profile, which we believe will support the development process for LYR-210. LYR-210 is designed to enable sustained drug delivery at difficult-to-access nasal inflammation sites without the need for patient compliance, while avoiding systemic side effects associated with oral steroids. LYR-210 is designed to be administered in a brief, non-invasive, in-office procedure by an ENT physician under endoscopic visualization via a single-use applicator.

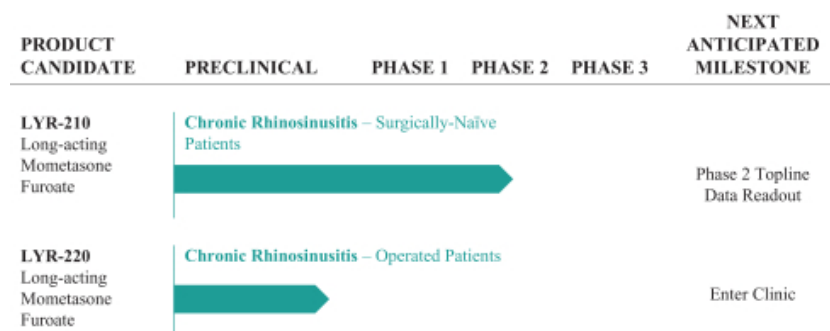
LYR-210 is currently being studied in our Phase 2 randomized, sham procedure-controlled, patient-blinded LANTERN clinical trial, evaluating the safety and efficacy in surgically-naïve CRS patients who have failed previous medical management. The trial was initiated in May 2019 and is currently ongoing at sites in Australia, Austria, Czech Republic, New Zealand and Poland. In January 2020, the FDA cleared our investigational new drug application, and we expect to open new sites in the United States. We expect to report topline data from the Phase 2 LANTERN clinical trial in . LYR-210 was previously studied in an open-label, Phase 1 clinical trial with 20 patients in New Zealand and Australia and achieved its primary endpoint of safety at week 4. In the Phase 1 trial, we observed that patients generally experienced significant and rapid, clinically meaningful and durable improvement in SNOT-22 scores. Significant reduction in SNOT-22 scores was observed at week 1, and this reduction persisted through week 25, which was the end of the trial.

We are developing our second pipeline product candidate, LYR-220, for use in CRS patients who continue to require treatment to manage CRS symptoms despite having had sinus surgery. LYR-220 is also designed to utilize MF, but will employ an oversized matrix designed for patients whose nasal cavity is enlarged due to sinus surgery. LYR-220 is designed as a potential preferred alternative to revision sinus surgery and post-surgical medical management. We expect to initiate a proof-of-concept clinical trial for LYR-220 in .

We believe that the key potential benefits of our current investigational product portfolio, LYR-210 and LYR-220, include **clinical activity, patient compliance, patient experience, physician experience, localized delivery, patient applicability and pharmacoeconomic impact**. We believe LYR-210 and LYR-220, if approved, would be the only products able to deliver up to six months of continuous topical treatment in a single administration to treat the entire spectrum of CRS patients who fail medical management, including pre- and post-surgery patients and those with and without nasal polyps.

Our Pipeline

The current status of our product candidates is summarized below.



Our Strategy

Our mission is to transform the ENT treatment paradigm by utilizing our proprietary drug delivery platform, XTreo, to develop safe and effective therapies for the treatment of debilitating diseases treatable with ENT delivery. We intend to achieve this through the following strategies:

- Complete the development and secure FDA approval of LYR-210 for the treatment of CRS.
- Advance our second product candidate, LYR-220, into the clinic to provide a comprehensive solution for CRS patients who have failed medical management and surgery.

- Build a commercialization infrastructure in the U.S. market for LYR-210 and LYR-220.
- Maximize the value of our XTreo platform and expand our product pipeline.
- Seek strategic collaborative relationships.

Intellectual Property and Barriers to Entry

We own all the material intellectual property rights related to our platform and product candidate portfolio. As of December 31, 2019, our product and product candidate portfolio is protected by 21 issued and 27 pending patents worldwide with claims directed to composition of matter, drug delivery and method of use, which, exclusive of possible patent term adjustments or extensions or other forms of exclusivity, are projected to expire between 2030 and 2037.

Management Team and Investors

Our management team has extensive drug development, manufacturing and commercialization experience across a broad spectrum of disease areas, for both drug and drug-device combination products, with a successful track record in large pharmaceutical, medical device and biotech companies. Additionally, our management team has been involved in the development of successfully approved and commercialized products such as Taxus (drug-eluting stent), AvoneX, Arikayce and Panhematin.

Further, we are supported by a leading group of biotech investors including, among others, ArrowMark Partners, Intersouth Partners, North Bridge Venture Partners, Perceptive Advisors, Polaris Venture Partners, RA Capital and Soleus Capital.

Risk Factors

Our business is subject to a number of risks of which you should be aware before making an investment decision. You should carefully consider all of the information set forth in this prospectus and, in particular, should evaluate the specific factors set forth under “Risk Factors” in deciding whether to invest in our common stock. These risks include the following:

- we have a limited operating history and a history of escalating operating losses, which may make it difficult to evaluate the prospects for our future viability;
- we have incurred significant losses since inception and expect to incur significant additional losses for the foreseeable future, and we may never achieve profitability;
- even if this offering is successful, we will need significant additional funding in order to complete development of and obtain regulatory approval for our product candidates and commercialize our products, if approved;
- our business is highly dependent on the success of our most advanced product candidate, LYR-210, which will require significant additional clinical testing before we can seek regulatory approval and potentially launch commercial sales, and if LYR-210 does not receive regulatory approval or is not successfully commercialized, or is significantly delayed in doing so, our business will be harmed;
- clinical trials required for our product candidates are expensive and time-consuming, their outcome is uncertain, and if our clinical trials do not meet safety or efficacy endpoints in these evaluations, or if we experience significant delays in these trials, our ability to commercialize our product candidates and our financial position will be impaired;

- developments by competitors may render our products or technologies obsolete or non-competitive or may reduce the size of our markets;
- the successful commercialization of our product candidates will depend in part on the extent to which governmental authorities and health insurers establish coverage, adequate reimbursement levels and pricing policies, and the failure to obtain or maintain coverage and adequate reimbursement for our product candidates, if approved, could limit our ability to market those products and decrease our ability to generate revenue;
- even if either LYR-210 or LYR-220 receives marketing approval, it may fail to achieve market acceptance by physicians, patients, third-party payors or others in the medical community necessary for commercial success;
- we will rely on third parties for the manufacture of materials for our research programs, pre-clinical studies and clinical trials and we do not have long-term contracts with any of these parties, which increases the risk that we will not have sufficient quantities of such materials, product candidates, or any therapies that we may develop and commercialize, or that such supply will not be available to us at an acceptable cost, which could delay, prevent, or impair our development or commercialization efforts;
- we rely on third parties to conduct our pre-clinical studies and clinical trials, and any failure by a third party to conduct the clinical trials according to GCPs and in a timely manner may delay or prevent our ability to seek or obtain regulatory approval for or commercialize our product candidates;
- if we are unable to obtain, maintain or adequately protect our intellectual property rights, we may not be able to compete effectively in our markets; and
- if we lose key management or scientific personnel, cannot recruit qualified employees, directors, officers or other significant personnel or experience increases in our compensation costs, our business may materially suffer.

Implications of Being an Emerging Growth Company

As a company with less than \$1.07 billion in revenue during our last fiscal year, we qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or JOBS Act. An “emerging growth company” may take advantage of reduced reporting requirements that are otherwise applicable to public companies. These provisions include, but are not limited to:

- the option to present only two years of audited financial statements and only two years of related “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in this prospectus;
- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements;

- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We may take advantage of these provisions until the last day of our fiscal year following the fifth anniversary of the completion of this offering. However, if prior to the end of such five-year period, (i) our annual gross revenue exceeds \$1.07 billion, (ii) we issue more than \$1.0 billion of non-convertible debt in any three-year period or (iii) we become a “large accelerated filer” (as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, or the Exchange Act), then we will cease to be an emerging growth company prior to the end of such five-year period. We will be deemed to be a “large accelerated filer” at such time that we (a) have an aggregate worldwide market value of common equity securities held by non-affiliates of \$700.0 million or more as of the last business day of our most recently completed second fiscal quarter, (b) have been required to file annual and quarterly reports under the Exchange Act, for a period of at least 12 months and (c) have filed at least one annual report pursuant to the Exchange Act. Even after we no longer qualify as an emerging growth company, we may still qualify as a “smaller reporting company,” which would allow us to take advantage of many of the same exemptions from disclosure requirements, including reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements.

We have elected to take advantage of certain of the reduced disclosure obligations in the registration statement of which this prospectus is a part and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

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.

Corporate Information

We were incorporated under the laws of the state of Delaware in November 2005 under the name WMR Biomedical, Inc. In July 2018, we changed our name to Lyra Therapeutics, Inc. Our principal executive offices are located at 480 Arsenal Way, Watertown, MA 02472 and our telephone number is (617) 393-4600. Our website address is www.lyratherapeutics.com. The information contained in, or accessible through, our website does not constitute a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

The Offering

Common stock offered by us	shares
Common stock to be outstanding after this offering	shares (or shares if the underwriters exercise their option to purchase additional shares in full).
Option to purchase additional shares	The underwriters have a 30-day option to purchase up to additional shares of our common stock at the public offering price less estimated underwriting discounts and commissions.
Use of proceeds	We estimate that the net proceeds from this offering will be approximately \$ million (or approximately \$ million if the underwriters exercise in full their option to purchase additional shares of common stock), at an assumed 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 the estimated offering expenses payable by us. We anticipate that we will use the net proceeds of this offering, together with our existing cash and cash equivalents, to fund the clinical development and pre-commercialization expenses for LYR-210 through ; to fund the development of LYR-220 through ; and the remainder, if any, for platform development and other research and development expenses for our pipeline, and for working capital and general corporate purposes. See "Use of Proceeds" beginning on page 76 for additional information.
Risk factors	You should carefully read the "Risk Factors" beginning on page 11 and the other information included in this prospectus for a discussion of factors you should consider carefully before deciding to invest in our common stock.
Proposed Nasdaq Global Market symbol	"LYRA"

The number of shares of our common stock to be outstanding after this offering is based on shares of our common stock outstanding as of , 2020, and excludes:

- shares of common stock issuable upon exercise of stock options outstanding under our 2016 Equity Incentive Plan, or our 2016 Plan, as of , 2020, at a weighted-average exercise price of \$ per share;
- shares of common stock issuable upon exercise of stock options outstanding under our 2005 Equity Incentive Plan, or our 2005 Plan, as of , 2020, at a weighted-average exercise price of \$ per share;
- shares of our common stock issuable upon the exercise of stock options granted after , 2020 pursuant to our 2016 Plan;

- shares of our common stock reserved for future issuance under our 2020 Incentive Award Plan, or our 2020 Plan, which will become effective in connection with this offering, as well as any automatic increases in the number of shares of our common stock reserved for future issuance under our 2020 Plan; and
- shares of our common stock that will become available for future issuance under our 2020 Employee Stock Purchase Plan, or our 2020 ESPP, which will become effective in connection with this offering, and shares of our common stock that become available pursuant to provisions in the 2020 ESPP that automatically increase the share reserve under our 2020 ESPP.

Unless otherwise indicated, this prospectus reflects and assumes the following:

- a -for- reverse stock split of our common stock, which will become effective prior to the effectiveness of the registration statement of which this prospectus forms a part;
- the automatic cashless exercise of outstanding warrants to purchase shares of common stock, which, based on an assumed initial public offering price of \$ per share, the midpoint of the price range set forth on the cover of this prospectus, would result in the issuance of shares of our common stock upon the closing of this offering (a \$1.00 increase in the assumed initial public offering price of \$ per share would increase the number of additional shares of our common stock issuable in connection with such automatic exercise by an aggregate of shares; a \$1.00 decrease in the assumed initial public offering price of \$ per share would decrease the number of additional shares of our common stock issuable in connection with such exercise by an aggregate of shares);
- the conversion of all outstanding shares of our preferred stock into an aggregate of shares of our common stock upon the closing of this offering;
- no exercise of outstanding options after , 2020;
- no exercise by the underwriters of their option to purchase additional shares of our common stock; and
- the filing of our restated certificate of incorporation, which will occur upon the closing of this offering.

Summary Consolidated Financial Data

The following tables set forth our summary consolidated financial data as of, and for the periods ended on, the dates indicated. We have derived the consolidated statements of operations data for the years ended December 31, 2019 and 2018 and the consolidated balance sheet data as of December 31, 2019 from our audited consolidated financial statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that should be expected for any future period. You should read the following summary consolidated financial data together with the more detailed information contained in “Selected Consolidated Financial Data,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and the related notes included elsewhere in this prospectus.

	Years Ended December 31,	
	2019	2018
	(in thousands, except share and per share data)	
Consolidated Statement of Operations Data:		
Grant revenues	\$ —	\$ 1,244
Operating expenses:		
Research and development	12,032	4,975
General and administrative	4,487	3,528
Total operating expenses	<u>16,519</u>	<u>8,503</u>
Loss from operations	(16,519)	(7,259)
Other income:		
Interest income (expense), net	213	36
Other income, net	—	10
Change in fair value of tranche liability	—	1,184
Total other income, net	<u>213</u>	<u>1,230</u>
Net loss	<u>\$ (16,306)</u>	<u>\$ (6,029)</u>
Net loss per share attributable to common stockholders—basic and diluted ⁽¹⁾	<u>\$ (2.37)</u>	<u>\$ (1.07)</u>
Weighted-average common shares outstanding—basic and diluted ⁽¹⁾	<u>6,998,502</u>	<u>5,728,033</u>
Pro forma net loss per share attributable to common stockholders—basic and diluted (unaudited) ⁽¹⁾	<u>\$ (0.08)</u>	
Pro forma weighted-average common shares outstanding—basic and diluted (unaudited) ⁽¹⁾	<u>216,118,176</u>	

(1) See Note 2 to our audited consolidated financial statements included elsewhere in this prospectus for an explanation of the method used to calculate the historical and pro forma basic and diluted net loss per common share and the weighted average number of shares used in the computation of the per share amounts.

	As of December 31, 2019		
	Actual	Pro Forma(1)	Pro Forma As Adjusted(2)(3)
(in thousands)			
Consolidated Balance Sheet Data:			
Cash and cash equivalents	\$ 9,808	\$	\$
Working capital(4)	4,911		
Total assets	14,963		
Total liabilities	7,635		
Redeemable convertible preferred stock	130,666		
Additional paid-in capital	4,411		
Accumulated deficit	(127,757)		
Total stockholders' (deficit) equity	(123,338)		

(1) The pro forma consolidated balance sheet data gives effect to (1) the issuance and sale of 78,306,611 shares of our Series C preferred stock, at a price of \$0.38811 per share, and warrants to purchase 23,491,979 shares of our common stock, in each case, in January 2020, (2) the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 287,426,285 shares of common stock and (3) the automatic cashless exercise of outstanding warrants to purchase shares of common stock, which, based on an assumed initial public offering price of \$ per share, the midpoint of the price range set forth on the cover of this prospectus, would result in the issuance of shares of our common stock upon the closing of this offering (a \$1.00 increase in the assumed initial public offering price of \$ per share would increase the number of additional shares of our common stock issuable in connection with such automatic exercise by an aggregate of shares; a \$1.00 decrease in the assumed initial public offering price of \$ per share would decrease the number of additional shares of our common stock issuable in connection with such exercise by an aggregate of shares), which will occur upon the closing of this offering.

(2) Reflects the pro forma adjustments described in footnote (1) and the issuance and sale of shares of common stock in this offering at an assumed initial public offering price of \$ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) Each \$1.00 increase (decrease) in the assumed initial public offering price of \$ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets, additional paid-in capital and total stockholders' equity by \$ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting 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 at the assumed initial public offering price would increase (decrease) each of cash and cash equivalents, working capital, total assets, additional paid-in capital and total stockholders' equity by \$ million. The pro forma information discussed above is illustrative only and will be adjusted based on the actual initial public offering price and other terms of our initial public offering determined at pricing.

(4) We define working capital as current assets less current liabilities. See our consolidated financial statements for further details regarding our current assets and current liabilities.

RISK FACTORS

You should carefully consider the risks and uncertainties described below and the other information in this prospectus before making an investment in our common stock. Our business, financial condition, results of operations, or prospects could be materially and adversely affected if any of these risks occurs, and as a result, the market price of our common stock could decline and you could lose all or part of your investment. This prospectus also contains forward-looking statements that involve risks and uncertainties. See “Special Note Regarding Forward-Looking Statements.” Our actual results could differ materially and adversely from those anticipated in these forward-looking statements as a result of certain factors, including those set forth below.

Risks Related to Our Financial Position and Need for Additional Capital

We have a limited operating history and a history of escalating operating losses, which may make it difficult to evaluate the prospects for our future viability.

We are a clinical-stage therapeutics company established in November 2005. Our operations to date have been limited to financing and staffing our company, developing our technology and identifying and developing our product candidates. Our prospects must be considered in light of the uncertainties, risks, expenses, and difficulties frequently encountered by companies in their early stages of operations. We have not yet demonstrated an ability to obtain marketing approval, 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. Consequently, predictions 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 developing, obtaining marketing approval for and commercializing CRS treatments.

In addition, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown obstacles. We will eventually need to transition from a company with a research and development focus to a company capable of supporting commercial activities. We may not be successful in such a transition.

As we continue to build our business, we expect our financial condition and operating results may 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 particular quarterly or annual period as indications of future operating performance.

We have incurred significant losses since inception and expect to incur significant additional losses for the foreseeable future. We may never achieve or maintain profitability.

We have incurred significant operating losses since our inception, including operating losses of approximately \$16.3 million and \$6.0 million for the fiscal years ended December 31, 2019 and December 31, 2018, respectively. In addition, we have not commercialized any products and have never generated any revenue from product sales. We have devoted almost all of our financial resources to research and development, including our pre-clinical development activities.

In addition, we expect to continue to incur significant additional operating losses for the foreseeable future as we seek to advance product candidates through pre-clinical and clinical development, expand our research and development activities, develop new product candidates, complete pre-clinical studies and clinical trials, seek regulatory approval and, if we receive FDA approval, commercialize our products. In order to obtain FDA approval of any product candidate, we must submit to the FDA an NDA demonstrating that the product candidate is safe for humans and effective for its intended use. This demonstration requires significant research and animal tests, which are referred to as non-clinical or pre-clinical studies, as well as human tests, which are referred to as clinical trials. Furthermore, the costs of advancing product candidates into each succeeding clinical phase tend to increase substantially over time. The total costs to advance any of our product candidates to

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marketing approval in even a single jurisdiction would be substantial. Because of the numerous risks and uncertainties associated with ENT disease treatment product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to begin generating revenue from the commercialization of products or achieve or maintain profitability. Our expenses will also increase substantially if and as we:

- continue additional clinical trials of our most advanced product candidate, LYR-210, including the Phase 2 LANTERN trial, which commenced in May 2019 and one or more planned pivotal Phase 3 clinical trials of LYR-210;
- advance the development of LYR-220;
- continue to discover and develop additional product candidates;
- establish manufacturing and supply chain capacity sufficient to provide commercial quantities of any product candidates for which we may obtain marketing approval;
- seek regulatory and marketing approvals for product candidates that successfully complete clinical trials, if any;
- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain regulatory approval in geographies in which we plan to commercialize our products ourselves;
- maintain, expand and protect our intellectual property portfolio;
- hire additional staff, including clinical, scientific, technical, regulatory, operational, financial, commercial and support personnel, to execute our business plan;
- add clinical, scientific operational, financial and management information systems and personnel to support our product development and potential future commercialization efforts, and as to enable us to operate as a public reporting company;
- utilize external vendors for support with respect to research, development, commercialization, regulatory, pharmacovigilance and other functions;
- acquire or in-license other commercial products, product candidates and technologies;
- expand internationally;
- make royalty, milestone or other payments under current and any future in-license agreements;
- implement additional internal systems and infrastructure; and
- operate as a public company.

Furthermore, our ability to successfully develop, commercialize and license our products and generate product revenue is subject to substantial additional risks and uncertainties. Each of our product candidates will require additional pre-clinical and/or clinical development, potential regulatory approval in multiple jurisdictions, the securing of manufacturing supply, capacity and expertise, the use of external vendors, the building of a commercial organization, substantial investment and significant marketing efforts before we generate any revenue from product sales. As a result, we expect to continue to incur net losses and negative cash flows for the foreseeable future. These net losses and negative cash flows have had, and will continue to have, an adverse effect on our stockholders' equity and working capital.

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The amount of future losses and when, if ever, we will achieve profitability are uncertain. We have no products that have generated any commercial revenue, do not expect to generate revenues from the commercial sale of products in the foreseeable future, and might never generate revenues from the sale of products. Our ability to generate revenue and achieve profitability will depend on, among other things, successful completion of the clinical development of our product candidates; obtaining necessary regulatory approvals from the FDA and international regulatory agencies; establishing manufacturing, sales, market acceptance of our products and marketing infrastructure to commercialize our product candidates for which we obtain approval; and raising sufficient funds to finance our activities. We might not succeed at any of these undertakings. If we are unsuccessful at some or all of these undertakings, our business, prospects, and results of operations may be materially adversely affected.

Even if this offering is successful, we will need significant additional funding in order to complete development of and obtain regulatory approval for our product candidates and commercialize our products, if approved. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

Even after the consummation of this offering, we will continue to need additional capital beyond the proceeds of this offering, which we may raise through equity offerings, debt financings, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements or other sources. Additional sources of financing might not be available on favorable terms, if at all. If we do not succeed in raising additional funds on acceptable terms, we might be unable to complete planned clinical trials or obtain approval of any of our product candidates from the FDA, or any foreign regulatory authorities, and could be forced to discontinue product development. In addition, attempting to secure additional financing may divert the time and attention of our management from day-to-day activities and harm our product candidate development efforts.

We will require substantial funds to further develop, obtain approval for and commercialize our product candidates, including LYR-210, which is currently in Phase 2 clinical development. We will also require substantial funds to further develop, obtain approval for and commercialize our other product candidate, LYR-220, which is in pre-clinical development.

Based on our current operating plan, we believe that the anticipated net proceeds from this offering and our current cash and cash equivalents will be sufficient to enable us to fund our operating expenses and capital expenditure requirements until . This estimate is based on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Changing circumstances could cause us to consume capital significantly faster than we currently anticipate, and we may need to spend more than currently expected because of circumstances beyond our control. Because the length of time and activities associated with successful development of LYR-210 and LYR-220 is highly uncertain, we are unable to estimate the actual funds we will require for development, approval and any approved marketing and commercialization activities. Our future funding requirements, both near and long-term, will depend on many factors, including, but not limited to:

- the scope and results of our pre-clinical studies and clinical trials;
- the timing of, and the costs involved in, obtaining regulatory approvals for LYR-210 and LYR-220;
- the costs and timing of changes in the regulatory environment and enforcement rules;
- the costs and timing in changes in pharmaceutical pricing and reimbursement infrastructure;
- the costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims and other patent-related costs, including any litigation costs and the results of such litigation;

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- the effect of competing technological and market developments;
- the extent to which we in-license or acquire other products and technologies;
- the cost of establishing sales, marketing and distribution capabilities for our product candidates in regions where we choose to commercialize our products; and
- the initiation, progress, timing and results of our commercialization of LYR-210 and LYR-220, if approved for commercial sale.

Depending on our business performance, the economic climate and market conditions, we may be unable to raise additional funds through any sources. If we are unable to obtain adequate funding on a timely basis, we may be required to curtail or discontinue one or more of our development programs for LYR-210 or LYR-220, or to reduce our operations. If we raise additional funds by issuing equity securities, our then-existing stockholders will experience dilution and the terms of any new equity securities may have preference over those of our existing common stock.

Raising additional capital may cause dilution to our stockholders, including purchasers of common stock in this offering, restrict our operations or require us to relinquish rights to our technologies or product candidates.

Until such time, if ever, as we can generate substantial revenue, we may finance our cash needs through a combination of equity offerings, debt financings, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements. In addition, we may seek additional capital due to favorable market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our operations, our ability to take specific actions, such as incurring additional debt, making capital expenditures, declaring dividends, redeeming our stock, making certain investments and engaging in certain merger, consolidation or asset sale transactions, among other restrictions. If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may be required 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. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

We have no approved products.

To date, we have no approved product on the market and have generated no product revenues. Unless we receive approval from the FDA or other regulatory authorities for our product candidates, we will not have product revenues. Therefore, for the foreseeable future, we will have to fund all of our operations and capital expenditures from the net proceeds of this offering, cash on hand, and licensing fees and grants, if any.

Our product candidates are in various stages of development.

We are a therapeutics company focused on the development and commercialization of novel integrated drug and drug delivery solutions for the localized treatment of patients with ENT diseases. Our product

candidates are at stages of pre-clinical or clinical development, and favorable results in pre-clinical or early stage clinical trials may not be predictive of success in later clinical trials and may not lead to commercially viable products for any of several reasons. For example, our product candidates may fail to be safe and effective in current or future clinical trials or pre-clinical studies, or we may have inadequate financial or other resources to pursue discovery and development efforts for new product candidates. Our product candidates will require significant additional development, clinical trials, regulatory clearances and additional investment by us before they can be commercialized.

Our business is highly dependent on the success of our most advanced product candidate, LYR-210, which will require significant additional clinical testing before we can seek regulatory approval and potentially launch commercial sales. If LYR-210 does not receive regulatory approval or is not successfully commercialized, or is significantly delayed in doing so, our business will be harmed.

A substantial portion of our business and future success depends on our ability to develop, obtain regulatory approval for and successfully commercialize our most advanced product candidate, LYR-210. We currently have no products that are approved for commercial sale and have not completed the development of any product candidates, and may never be able to develop marketable products. We expect that a substantial portion of our efforts and expenditures over the next few years will be devoted to LYR-210, which will require additional clinical development and potential additional pre-clinical development, management of clinical, medical affairs and manufacturing activities, regulatory approval in multiple jurisdictions, the securing of manufacturing supply, the building of a commercial organization, substantial investment and significant marketing efforts before we can generate any revenues from any commercial sales. We cannot be certain that LYR-210 will be successful in ongoing or future clinical trials, receive regulatory approval or be successfully commercialized even if we receive regulatory approval. Even if we receive approval to market LYR-210 from the FDA or other regulatory bodies, we cannot be certain that our product candidates will be successfully commercialized, widely accepted in the marketplace or more effective than other commercially available alternatives. Nor can we be certain that, if and when approved, the safety and efficacy profile of LYR-210 or our other product candidates will be consistent with the profiles observed in clinical trials.

If the required regulatory approvals for LYR-210 are not obtained or are significantly delayed, or any approved products are not commercially successful, our business, financial condition and results of operations may be materially harmed.

LYR-210 is our most advanced product candidate, and if we experience regulatory or developmental issues with respect to LYR-210, our development plans and business could be significantly harmed. Moreover, if we experience similar regulatory or developmental issues with our other pipeline product candidates, our development plans and business could be significantly harmed. Further, our competitors may be developing products with similar mechanisms of action and may experience problems with their products that could identify problems that would potentially harm our business.

We may not be successful in our efforts to identify and successfully commercialize additional product candidates.

Part of our strategy involves identifying novel product candidates. The process by which we identify product candidates may fail to yield product candidates for clinical development for a number of reasons, including those discussed in these risk factors and also:

- we may not be able to assemble sufficient resources to acquire or discover additional product candidates;
- competitors may develop alternatives that render our potential product candidates obsolete or less attractive;

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- potential product candidates we develop may nevertheless be covered by third parties' patents or other exclusive rights;
- potential product candidates may, on further study, be shown to have harmful side effects, toxicities or other characteristics that indicate that they are unlikely to be products that will receive marketing approval or achieve market acceptance;
- potential product candidates may not be effective in treating their targeted diseases or symptoms;
- the market for a potential product candidate may change so that the continued development of that product candidate is no longer reasonable;
- a potential product candidate may not be capable of being produced in commercial quantities at an acceptable cost, or at all; or
- the regulatory pathway for a potential product candidate is highly complex and difficult to navigate successfully or economically.

In addition, we may choose to focus our efforts and resources on a potential product candidate that ultimately proves to be unsuccessful, or to license or purchase a marketed product that does not meet our financial expectations. As a result, we may fail to capitalize on viable commercial products or profitable market opportunities, be required to forego or delay pursuit of opportunities with other product candidates or other diseases that may later prove to have greater commercial potential, or relinquish valuable rights to such product candidates through collaboration, licensing or other royalty arrangements in cases in which it would have been advantageous for us to retain sole development and commercialization rights. If we are unable to identify and successfully commercialize additional suitable product candidates, this would adversely impact our business strategy and our financial position.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus on research programs and product candidates that we identify for specific indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to timely capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

Risks Related to Discovery, Development, Clinical Testing, Manufacturing and Regulatory Approval

Clinical trials required for our product candidates are expensive and time-consuming, their outcome is uncertain, and if our clinical trials do not meet safety or efficacy endpoints in these evaluations, or if we experience significant delays in these trials, our ability to commercialize our product candidates and our financial position will be impaired.

We began dosing patients in our Phase 2 LANTERN clinical trial of our most advanced product, LYR-210, in May 2019. Our other product candidate, LYR-220, is in pre-clinical development. It is impossible to predict when or if

either of our product candidates will prove effective and safe in humans or if we will receive regulatory approval for any of our product candidates, and the risk of failure through the development process is high. Before obtaining marketing approval from regulatory authorities for the sale of any product candidate, we must complete pre-clinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans.

Clinical development is a long, expensive and uncertain process that is subject to significant delays. Due to known or unknown circumstances beyond our control, it may take us several years to complete our testing, and failure can occur at any stage of testing. The outcome of pre-clinical testing and early clinical trials may not be predictive of the results of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. We cannot assure you that any clinical trial that we are conducting, or may conduct in the future, will demonstrate consistent or adequate efficacy and safety to obtain regulatory approval to market our product candidates. Moreover, pre-clinical and clinical data are often susceptible to varying interpretations and analysis, and many companies that have believed their product candidates performed satisfactorily in pre-clinical studies and clinical trials have nonetheless failed to obtain marketing approval of their products.

Delays associated with products for which we are directly conducting pre-clinical studies or clinical trials may cause us to incur additional operating expenses. The commencement and rate of completion of pre-clinical studies or clinical trials may be delayed by, or terminated because of, many factors, including:

- the FDA or comparable foreign regulatory authorities disagreeing as to the design or implementation of our pre-clinical studies or clinical trials;
- failure to obtain regulatory approval to commence a trial;
- failure to reach, or delays in reaching, an agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- slower than expected rates of recruitment of patients or failure to recruit a sufficient number of patients;
- modification of pre-clinical studies or clinical trial protocols;
- changes in regulatory requirements for pre-clinical studies or clinical trials;
- the impact of unusual placebo effects;
- the lack of effectiveness during pre-clinical studies or clinical trials;
- the emergence of unforeseen safety issues or undesirable side effects;
- failure to obtain institutional review board, or the IRB, approval at each site;
- delays, suspension, or termination of clinical trials by the IRB responsible for overseeing the trial at a particular trial site;
- failure of patients in completing a trial or returning for post-treatment follow-up;
- clinical sites deviating from trial protocol, dropping out of a trial or failing to comply with regulatory requirements;
- failure to address patient safety concerns that arise during the course of a trial;

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- failure to manufacture sufficient quantities of product candidate for use in clinical trials; and
- government, IRB or other regulatory delays or “clinical holds” requiring suspension or termination of the trials.

We may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval or commercialize our product candidates or significantly increase the cost of such trials, including:

- we may receive feedback from regulatory authorities that requires us to modify the design of our clinical trials;
- clinical trials of our product candidates may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon development programs;
- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of these clinical trials or fail to return for post-treatment follow-up at a higher rate than we anticipate;
- we may be unable to enroll a sufficient number of patients in our clinical trials to ensure adequate statistical power to detect any statistically significant treatment effects;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- regulators, IRBs or independent ethics committees, or IECs, may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site or may require that we or our investigators suspend or terminate clinical trials of our product candidates for various reasons, including non-compliance with regulatory requirements, a finding that our product candidates have undesirable side effects or other unexpected characteristics, or a finding that the participants are being exposed to unacceptable health risks;
- we may experience delays in reaching or fail to reach agreement on acceptable pre-clinical study or clinical trial contracts or pre-clinical study or clinical trial protocols with prospective trial sites;
- the cost of pre-clinical studies or clinical trials of our product candidates may be greater than we anticipate and we may not have funds to cover the costs;
- the supply or quality of our product candidates or other materials necessary to conduct pre-clinical studies or clinical trials of our product candidates may be insufficient or inadequate;
- regulators may revise the requirements for approving our product candidates, or such requirements may not be as we anticipate; and
- any current or future collaborators that conduct pre-clinical studies or clinical trials may face any of the above issues, and may conduct pre-clinical studies or clinical trials in ways they view as advantageous to them but that are suboptimal for us.

If we are required to extend the duration of current pre-clinical studies or clinical trials or to conduct additional pre-clinical studies or clinical trials or other testing of our product candidates beyond those that we

currently contemplate, if we are unable to successfully complete pre-clinical studies or clinical trials of our product candidates or other testing, if the results of these trials, studies or tests are not positive or are only modestly positive, if there are safety concerns or if we determine that the observed safety or efficacy profile would not be competitive in the marketplace, we may:

- incur unplanned costs;
- be delayed in obtaining marketing approval for our product candidates or not obtain marketing approval at all;
- obtain marketing approval in some countries and not in others;
- obtain marketing approval for indications or patient populations that are not as broad as intended or desired;
- obtain marketing approval with labeling that includes significant use or distribution restrictions or safety warnings, including boxed warnings;
- be subject to additional post-marketing testing requirements; or
- have the product removed from the market after obtaining marketing approval.

We could encounter delays if a clinical trial is materially modified, suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by the Data Safety Monitoring Board, or DSMB, for such trial or by the FDA or other regulatory authorities. Such authorities may impose such a material modification, suspension or termination 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 site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects for our product candidates, or other products or product candidates in the same drug class, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. Furthermore, we may rely on CROs and clinical trial sites to ensure the proper and timely conduct of clinical trials and while we would have agreements governing their committed activities, we would have limited influence over their actual performance, as described in “—Risks Related to Our Dependence on Third Parties.”

Our most advanced product candidate, LYR-210, is in clinical development and will require the completion of clinical testing before we are prepared to submit an NDA for regulatory approval. We cannot predict if or when we might complete the development of LYR-210 and submit an NDA or whether any such NDA will be approved by the FDA. We may also seek feedback from the FDA or other regulatory authorities on our clinical development programs, and the FDA or such regulatory authorities may not provide such feedback on a timely basis, or such feedback may not be favorable, which could further delay our development programs. If the results of ongoing and future clinical trials for LYR-210 are positive, we plan to submit an NDA in the United States. However, no assurance can be given that we will be successful in the near term, obtain regulatory approval or have any commercial sales of LYR-210.

Any clinical test may fail to produce results satisfactory to the FDA or foreign regulatory authorities. Pre-clinical and clinical data can be interpreted in different ways by different reviewers and regulators, which could delay, limit or prevent regulatory approval. Drug-related adverse events during a pre-clinical study or clinical trial could cause us to repeat a trial or study, perform an additional trial or study, expand the size and/or duration of a trial or study, terminate a trial or study or even cancel a pre-clinical or clinical program. The failure of pre-clinical studies or clinical trials to demonstrate safety and effectiveness for the desired indications could harm the development of that product candidate and other product candidates. This failure could cause us to

abandon a product candidate and could delay development of other product candidates. Any delay in, or termination of, our clinical trials would delay the filing of our NDAs with the FDA and, ultimately, our ability to commercialize our product candidates and generate product revenues. A number of companies in the biotechnology and pharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. Even if our future and ongoing pre-clinical studies and clinical trials are completed as planned, we cannot be certain that their results will support the safety and effectiveness of LYR-210, LYR-220 and/or any future product candidate.

If we experience delays in the commencement or completion of, or have to extend or expand, our pre-clinical studies or clinical trials, or if we terminate a pre-clinical study or clinical trial prior to completion, the commercial prospects of LYR-210, LYR-220 or any future product candidate could be harmed, and our ability to generate revenues from LYR-210, LYR-220 or any future product candidate may be delayed. In addition, any delays in our pre-clinical studies or clinical trials could increase our costs, slow down the development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may harm our business, financial condition and results of operations. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of pre-clinical studies or clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

Our pre-clinical studies and clinical trials may fail to demonstrate adequately the safety and efficacy of any of our product candidates and the development of our product candidates may be delayed or unsuccessful, which could prevent or delay regulatory approval and commercialization.

Both of our current product candidates are in clinical or pre-clinical development stages. Notwithstanding the data obtained to date with respect to LYR-210 and LYR-220 in CRS, LYR-210 and LYR-220 will require additional clinical and non-clinical development, regulatory review and approval in multiple jurisdictions, substantial investment, access to sufficient commercial manufacturing capacity and significant marketing efforts before we can generate any revenue from our product sales. In addition, if we encounter safety or efficacy problems, developmental delays or regulatory issues or other problems, our developmental plans and business could be significantly harmed.

If the development of LYR-210, LYR-220 or any other future product candidate is unsuccessful, our ability to generate revenues will be adversely affected. Our development of current and future product candidates is subject to the risks of failure and delay inherent in the development of new products and product candidates, including:

- delays in product development, pre-clinical or clinical testing or manufacturing;
- unplanned expenditures in product development, pre-clinical or clinical testing or manufacturing;
- failure to receive regulatory approvals;
- failure to secure rights from third parties for new technology;
- failure to achieve market acceptance; and
- emergence of superior or equivalent products.

In addition, product candidates in later stages of clinical trials may fail to show the desired safety profiles and efficacy results despite having progressed through pre-clinical studies and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. Based upon negative or inconclusive results, we may decide, or regulators may require us, to conduct additional clinical

trials or pre-clinical studies. In addition, data obtained from trials and studies are susceptible to varying interpretations, and regulators may not interpret our data as favorably as we do, which may delay, limit or prevent regulatory approval.

Additionally, we have not conducted, nor do we believe we are required to conduct, any head-to-head trials comparing LYR-210 to other approved or experimental treatments for CRS. Any such head-to-head trial, if conducted, may show that LYR-210 is not more effective than any of such other drugs. Material adverse differences in the relative efficacy of LYR-210 could significantly harm the adoption of LYR-210 and our business prospects.

Because of these risks, our research and development efforts may not result in any commercially viable products. If a significant portion of these development efforts are not successfully completed, required regulatory approvals are not obtained, or any approved products are not commercially successful, our business, financial condition and results of operations may be materially harmed.

Success in pre-clinical or earlier clinical trials may not be indicative of results in future clinical trials.

Success in pre-clinical studies and early clinical trials does not ensure that later clinical trials will generate the same results or otherwise provide adequate data to demonstrate the efficacy and safety of a product candidate. Pre-clinical studies and Phase 1 and Phase 2 clinical trials are primarily designed to test safety, to study pharmacokinetics and pharmacodynamics and to understand the side effects of product candidates at various doses and schedules. Success in pre-clinical studies and early clinical trials does not ensure that later, large-scale efficacy trials will be successful nor does it predict final results. Our product candidates may fail to show the desired safety and efficacy in clinical development despite positive results in pre-clinical studies or having successfully advanced through initial clinical trials.

In addition, the design of a clinical trial can determine whether its results will support approval of a product, and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. As an organization, we have limited experience designing clinical trials and may be unable to design and execute a clinical trial to support regulatory approval. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials even after achieving promising results in pre-clinical studies and earlier-stage clinical trials. Data obtained from pre-clinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval. In addition, we may experience regulatory delays or rejections as a result of many factors, including changes in regulatory policy during the period of our product candidate development. Any such delays could negatively impact our business, financial condition, results of operations and prospects.

If the FDA does not conclude that certain of our product candidates satisfy the requirements for the Section 505(b)(2) regulatory approval pathway, or if the requirements for such product candidates under Section 505(b)(2) are not as we expect, the approval pathway for those product candidates may likely take significantly longer, cost significantly more and entail significantly greater complications and risks than anticipated, and in either case may not be successful.

We intend to seek FDA approval for our current product candidates, LYR-210 and LYR-220, and we may seek FDA approval for future product candidates, through the Section 505(b)(2) regulatory pathway. The Drug Price Competition and Patent Term Restoration Act of 1984, also known as the Hatch-Waxman Amendments, added Section 505(b)(2) to the Federal Food, Drug and Cosmetic Act, or FDCA. Section 505(b)(2) permits the filing of an NDA where at least some of the information required for approval comes from trials that were not conducted by or for the applicant and for which the applicant has not obtained a right of reference. Section 505(b)(2), if applicable to us under the FDCA, would allow an NDA we submit to the FDA to rely in part on data in the public domain or the FDA's prior conclusions regarding the safety and effectiveness of approved drugs, which could expedite the development program for our product candidates by potentially decreasing the

amount of clinical data that we would need to generate in order to obtain FDA approval. If the FDA does not allow us to pursue the Section 505(b)(2) regulatory pathway as we anticipate, 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 our product candidates, and complications and risks associated with the development of our product candidates, would likely substantially increase. Moreover, inability to pursue the Section 505(b)(2) regulatory pathway could result in competitive products reaching the market before our product candidates, which could 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, or that a competitor would not obtain approval first along with subsequent market exclusivity from the FDA, thereby delaying potential approval of our product.

In addition, the pharmaceutical industry is highly competitive, and Section 505(b)(2) NDAs are subject to special requirements designed to protect the patent rights of sponsors of previously approved drugs that are referenced in a Section 505(b)(2) NDA. These requirements may give rise to patent litigation and mandatory delays in approval of our NDAs for up to 30 months or longer depending on the outcome of any litigation. It is not uncommon for a manufacturer of an approved product to file a citizen petition with the FDA seeking to delay approval of, or impose additional approval requirements for, pending competing products. If successful, such petitions can significantly delay, or even prevent, the approval of the new product. However, even if the FDA ultimately denies such a petition, the FDA may substantially delay approval while it considers and responds to the petition. In addition, even if we are able to utilize the Section 505(b)(2) regulatory pathway, there is no guarantee this would ultimately lead to accelerated product development or earlier approval.

Moreover, even if our product candidates are approved under Section 505(b)(2), the approval may be subject to limitations on the indicated uses for which the products may be marketed or to other conditions of approval, or may contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the products.

We have conducted, are conducting and in the future, we may conduct clinical trials for our product candidates in sites outside the United States, and the FDA may not accept data from trials conducted in foreign locations.

We have conducted and are conducting clinical trials for LYR-210 outside the United States, specifically in Australia, Austria, Czech Republic, New Zealand and Poland, and we may in the future choose to conduct other clinical trials outside the United States for LYR-210, LYR-220 or any of our other future product candidates. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of this data is subject to certain conditions imposed by the FDA. For example, the clinical trial must be well designed and conducted and performed by qualified investigators in accordance with good clinical practice, or GCP, including review and approval by an IEC and receipt of informed consent from subjects. In general, the patient population for any clinical trials conducted outside of the United States must be representative of the population for which we intend to seek approval for the product in the United States. In addition, while these clinical trials are subject to the applicable local laws, FDA acceptance of the data will be dependent upon its determination that the trials also complied with all applicable U.S. laws and regulations. There can be no assurance the FDA will accept data from trials conducted outside of the United States. If the FDA does not accept the data from our clinical trials of our product candidates, it would likely result in the need for additional trials, which would be costly and time-consuming and delay or permanently halt our development of our product candidates.

In addition, there are risks inherent in conducting clinical trials in multiple jurisdictions, inside and outside of the United States, such as:

- regulatory and administrative requirements of the jurisdiction where the trial is conducted that could burden or limit our ability to conduct our clinical trials;

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- foreign exchange fluctuations;
- manufacturing, customs, shipment and storage requirements;
- cultural differences in medical practice and clinical research; and
- the risk that the patient populations in such trials are not considered representative as compared to the patient population in the target markets where approval is being sought.

Interim and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publish interim or preliminary data from our clinical trials. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Interim or preliminary data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published. As a result, interim and preliminary data should be viewed with caution until the final data are available. Differences between interim or preliminary data and final data could significantly harm our business prospects.

LYR-210 and LYR-220 are drug-device combinations, which may result in additional regulatory and other risks.

LYR-210 and LYR-220 are drug-device combination products. We may experience delays in obtaining regulatory approval of these product candidates given the increased complexity of the review process when approval of a drug and a delivery device is sought under a single marketing application. Both LYR-210 and LYR-220 will be regulated as drug-device combination products, which require coordination within the FDA and similar foreign regulatory agencies for review of the product candidates' device and drug components. The determination whether a combination product requires a single marketing application or two separate marketing applications for each component is made by the FDA on a case-by-case basis. Although we believe a single marketing application for the approval of a combination product would be successful, there can be no assurance that the FDA will not determine that separate marketing applications are necessary. This determination could significantly increase the resources and time required to bring a particular combination product to market. Although the FDA and similar foreign regulatory agencies have systems in place for the review and approval of combination products such as ours, we may experience delays in the development and commercialization of our product candidates due to regulatory timing constraints and uncertainties in the product development and approval process, as well as coordination between two different centers within FDA responsible for review of the different components of the combination product.

Failure to successfully develop or supply the device component, delays in or failure of the studies conducted by us, our collaborators, or third-party providers, or failure of our Company, our collaborators, or third-party providers to obtain or maintain regulatory approval or clearance of the device component of LYR-210 or LYR-220, as appropriate, could result in increased development costs, delays in or failure to obtain regulatory approval, and associated delays in these product candidates reaching the market. Further, failure to successfully develop or supply the device, or to gain or maintain its approval, could adversely affect sales of LYR-210 and LYR-220.

If we fail to obtain the necessary U.S. regulatory approvals to commercialize any product candidate, we will not be able to generate revenue in the U.S. market.

We cannot assure you that we will receive the approvals necessary to commercialize our product candidates, or any product candidate we acquire or develop in the future. We will need FDA approval to

commercialize our product candidates in the United States and approvals from equivalent regulatory authorities in foreign jurisdictions to commercialize our product candidates in those jurisdictions. Satisfaction of the FDA's regulatory requirements typically takes many years, depends upon the type, complexity and novelty of the product candidate and requires substantial resources for research, development and testing. We cannot predict whether our research and clinical efforts will result in drugs that the FDA will determine are safe for humans and effective for their intended uses. The FDA has substantial discretion in the drug approval process and may require us to conduct additional pre-clinical and clinical testing, perform post-marketing studies, address manufacturing concerns, or otherwise limit or impose conditions on any approval we obtain. The approval process may also be delayed by changes in government regulation, future legislation or administrative action or changes in FDA policy that occur prior to or during our regulatory review. Delays in obtaining regulatory approvals may:

- delay commercialization of, and our ability to derive product revenues from, our product candidates;
- impose costly procedures on us; and
- diminish any competitive advantages that we may otherwise enjoy.

Even if we receive approval of an NDA or comparable foreign regulatory filing for our product candidates, the FDA or the applicable foreign regulatory body may approve our product candidates for a more limited indication than we originally requested, and the FDA may not approve the labeling that we believe is necessary or desirable for the successful commercialization of our product candidates.

Even if we comply with all FDA requests, the FDA may ultimately reject one or more of our NDAs. We cannot be sure that we will ever obtain regulatory clearance for our product candidates. Failure to obtain FDA approval of our product candidates will severely undermine our business by leaving us without a commercially available product, and therefore without any source of revenues, until another product candidate can be developed or obtained and ultimately approved. There is no guarantee that we will ever be able to develop or acquire another product candidate or that we will be able to obtain FDA approval to commercialize such product candidate.

Even if we obtain FDA approval for our product candidates in the United States, we may never obtain approval for or commercialize them in any other jurisdiction, which would limit our ability to realize its full market potential.

We intend either on our own or through collaborations or partnerships, to market our products in international markets. In order to market any products in the European Union and many other foreign jurisdictions, 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. However, the failure to obtain approval in one jurisdiction may negatively impact our ability to obtain approval elsewhere. In addition, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not guarantee regulatory approval in any other country.

Approval processes vary among countries and can involve additional product testing and validation and additional administrative review periods. Seeking foreign regulatory approval could result in difficulties and increased costs for us and require additional pre-clinical studies or clinical trials which could be costly and time consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our products in those 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. 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 product we develop will be unrealized.

The regulatory approval processes of the FDA and comparable foreign authorities are lengthy, costly, time-consuming and inherently unpredictable, and if we are ultimately unable to obtain regulatory approval for our product candidates, our business will be substantially harmed. We cannot predict when or if, and in which territories, we, or any of our potential future collaborators, will obtain marketing approval to commercialize a product candidate.

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. We have not obtained regulatory approval for any product candidate and it is possible that neither LYR-210, LYR-220 nor any future product candidates we may seek to develop in the future will ever obtain regulatory approval. Neither we nor any future collaborator is permitted to market any of our product candidates in the United States until we receive regulatory approval of an NDA from the FDA. It is possible that the FDA may refuse to accept for substantive review any NDAs that we submit for our product candidates or may conclude after review of our data that our application is insufficient to obtain marketing approval of our product candidates.

Prior to obtaining approval to commercialize a product candidate in the United States or abroad, we or our collaborators must demonstrate with substantial evidence from well-controlled clinical trials, and to the satisfaction of the FDA or foreign regulatory agencies, that such product candidates are safe and effective for their intended uses in patients. Results from non-clinical studies and clinical trials can be interpreted in different ways. Even if we believe the non-clinical or clinical data for our product candidates are promising, such data may not be sufficient to support approval by the FDA and other regulatory authorities. The FDA may also require us to conduct additional pre-clinical studies or clinical trials for our product candidates either prior to or post-approval, or it may object to elements of our clinical development program. Depending on the extent of these or any other FDA-required studies, approval of any NDA or other application that we submit may be delayed by several years, or may require us to expend significantly more resources than we have available.

Of the large number of potential products in development, only a small percentage successfully complete the FDA or foreign regulatory approval processes and are commercialized. The lengthy and costly approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market our product candidates, which would significantly harm our business, results of operations and prospects.

Moreover, principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and receive compensation in connection with such services. Under certain circumstances, we may be required to report some of these relationships to the FDA or comparable foreign regulatory authorities. The FDA or comparable foreign regulatory authorities may conclude that a financial relationship between us and a principal investigator has created a conflict of interest or otherwise affected interpretation of the study. The FDA or comparable foreign regulatory authorities may therefore question the integrity of the data generated at the applicable clinical trial site and the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA or comparable foreign regulatory authorities, as the case may be, and may ultimately lead to the denial of marketing approval of one or more of our product candidates.

If we encounter delays or difficulties enrolling patients in our clinical trials, our clinical development activities and receipt of regulatory approvals could be delayed or otherwise adversely affected.

The timely completion of clinical trials in accordance with their protocols depends, among other things, on our ability to enroll a sufficient number of patients who remain in the trial until its conclusion. Trials may be subject to delays as a result of patient enrollment taking longer than anticipated or patient withdrawal. We may encounter delays in enrolling, or be unable to enroll, a sufficient number of patients to complete any of our clinical trials, and even once enrolled we may be unable to retain a sufficient number of patients to complete any of our trials. We may not be able to initiate or continue clinical trials for our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. We cannot predict how successful we will be at enrolling subjects in future clinical trials. The enrollment of patients depends on many factors, including:

- the patient eligibility criteria defined in the protocol;
- the size of the patient population required for analysis of the trial's primary endpoints;
- the proximity of patients to trial sites;
- the design of the trial;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;
- clinicians' and patients' perceptions as to the potential advantages of the product candidate being studied in relation to other available therapies, including any new products that may be approved for the indications we are investigating;
- the perceived risks and benefits of the product candidate in the trial;
- the availability of alternative therapies;
- our ability to obtain and maintain patient consents; and
- the risk that patients enrolled in clinical trials will drop out of the trials before completion.

In addition, our clinical trials will compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition will reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials in such clinical trial site.

Delays or failures in planned patient enrollment or retention may result in increased costs, program delays or both, which could have a harmful effect on our ability to develop LYR-210, LYR-220 and/or any other future product candidates, or could render further development impossible.

Our product candidates may cause serious adverse events or undesirable side effects including injury and death or have other properties which may delay or prevent their regulatory approval, limit the commercial profile of an approved label, or, result in significant negative consequences following marketing approval, if any. If any of our product candidates receives marketing approval and we, or others, later discover that the drug is less effective than previously believed or causes undesirable side effects that were not previously identified, our ability, or that of any potential future collaborators, to market the drug could be compromised.

Before obtaining regulatory approvals for the commercial sale of our product candidates, we must demonstrate through lengthy, complex and expensive pre-clinical testing and clinical trials that our product candidates are both safe and effective for use in each target indication, and failures can occur at any stage of testing. Clinical trials often fail to demonstrate safety and efficacy of the product candidate studied for the target indication. Serious adverse events, or SAEs, or undesirable side effects 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. Results of our clinical trials or pre-clinical studies could reveal a high and unacceptable severity and prevalence of side effects, toxicities or unexpected characteristics, including death. For example, in our Phase 1 clinical trial for our most advanced product candidate, LYR-210, there has been one SAE in the active group (acute myocardial infarction), which was considered not related to LYR-210. For more information, see “Business—LYR-210 for the Treatment of CRS—Overview of Our Clinical Development.”

In addition, subjects treated with LYR-210 have experienced adverse events, including facial pain, nasopharyngitis, sinusitis, upper respiratory tract infection, procedural headache, nasal discomfort and nasal odor, among others.

If unacceptable side effects arise in the development of our product candidates, we, the FDA, the IRBs at the institutions in which our studies are conducted or DSMB, could materially modify, suspend or terminate our clinical trials or the FDA or comparable foreign regulatory authorities could order us to cease pre-clinical studies or clinical trials, require us to conduct additional animal or human studies regarding the safety and efficacy of our product candidates which we have not planned or anticipated, or deny approval of our product candidates for any or all targeted indications. Many product candidates that initially showed promise in early stage testing have later been found to cause side effects that prevented further development of the product candidate. Treatment-related side effects could also affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff. We currently train and expect to have to train medical personnel using our product candidates to understand the side effect profiles for our clinical trials and upon any commercialization of any of our product candidates. Inadequate training in recognizing or managing the potential side effects of our product candidates could result in patient injury or death. Any of these occurrences may harm our business, financial condition and prospects significantly.

If any of our product candidates receives marketing approval, and we or others later identify undesirable side effects caused by any such product, including during any long-term follow-up observation period recommended or required for patients who receive treatment using our products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw approvals of such product;
- we may be required to recall a product or change the way such product is administered to patients;
- additional restrictions may be imposed on the marketing of the particular product or the manufacturing processes for the product;
- regulatory authorities may require additional warnings on the label, such as a “black box” warning or contraindication;

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- regulatory authorities may require long-term patient registries for the product;
- we may be required to implement a Risk Evaluation and Mitigation Strategy, or REMS, or create a medication guide outlining the risks of such side effects for distribution to patients;
- the product could become less competitive;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

There can be no assurance that we will resolve any issues related to any product-related adverse events to the satisfaction of the FDA or any regulatory agency in a timely manner or at all. Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and could significantly harm our business, results of operations and prospects.

Changes in methods of product candidate manufacturing or formulation may result in additional costs or delay.

As product candidates proceed through pre-clinical studies to late-stage clinical trials towards potential approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods and formulation, are altered along the way in an effort to optimize processes and results. Such changes carry the risk that they will not achieve these intended objectives. Any of these changes could cause our product candidates to perform differently and affect the results of planned clinical trials or other future clinical trials conducted with the altered materials. Such changes may also require additional testing, FDA notification or FDA approval. This could delay completion of clinical trials, require the conduct of bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidates and jeopardize our ability to commence sales and generate revenue.

Our insurance policies are expensive and protect us only from some business risks, which leaves us exposed to significant uninsured liabilities.

We do not carry insurance for all categories of risk that our business may encounter. Some of the policies we currently maintain include general liability, employment practices liability, property, auto, workers' compensation, umbrella, and directors' and officers' insurance.

Any additional product liability insurance coverage we acquire in the future, may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive and in the future we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. If we obtain marketing approval for LYR-210 and/or LYR-220, we intend to acquire insurance coverage to include the sale of commercial products; however, we may be unable to obtain product liability insurance on commercially reasonable terms or in adequate amounts. A successful product liability claim or series of claims brought against us could cause our share price to decline and, if judgments exceed our insurance coverage, could adversely affect our results of operations and business, including preventing or limiting the development and commercialization of any product candidates we develop. We do not carry specific biological or hazardous waste insurance coverage, and our property, casualty and general liability insurance policies specifically exclude coverage for damages and fines arising from biological or hazardous waste exposure or contamination. Accordingly, in the event of contamination or injury, we could be held liable for damages or be penalized with fines in an amount exceeding our resources, and our clinical trials or regulatory approvals could be suspended.

We also expect that operating as a public company will make it more difficult and more expensive for us to obtain director and officer 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 people to serve on our board of directors, our board committees or as executive officers. We do not know, however, if we will be able to maintain existing insurance with adequate levels of coverage. Any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our cash position and results of operations.

Our employees and independent contractors, including principal investigators, CROs, consultants, vendors, and any third parties we may engage in connection with research, development, regulatory, manufacturing, quality assurance and other pharmaceutical functions and commercialization may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could have a material adverse effect on our business.

Misconduct by our employees and independent contractors, including principal investigators, CROs, consultants, vendors, and any third parties we may engage in connection with research, development, regulatory, manufacturing, quality assurance and other pharmaceutical functions and commercialization, could include intentional, reckless or negligent conduct or unauthorized activities that violate: (i) the laws and regulations of the FDA, the European Medicines Agency, or the EMA, and other similar regulatory authorities, including those laws that require the reporting of true, complete and accurate information to such authorities; (ii) manufacturing standards; (iii) data privacy, security, fraud and abuse and other healthcare laws and regulations; or (iv) laws that require the reporting of true, complete and accurate financial information and data. Specifically, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Activities subject to these laws could also involve the improper use or misrepresentation of information obtained in the course of pre-clinical studies or clinical trials, creation of fraudulent data in pre-clinical studies or clinical trials or illegal misappropriation of drug product, which could result in regulatory sanctions and cause serious harm to our reputation. It is not always possible to identify and deter misconduct by employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with such laws 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 civil, criminal and administrative penalties, damages, monetary fines, disgorgements, possible exclusion from participation in Medicare, Medicaid, other U.S. federal healthcare programs or healthcare programs in other jurisdictions, integrity oversight and reporting obligations to resolve allegations of non-compliance, individual imprisonment, other sanctions, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations.

Our business and operations would suffer in the event of system failures.

Our computer systems, as well as those of our CROs and other contractors, vendors, suppliers and consultants, are vulnerable to damage from computer viruses, unauthorized access, natural disasters (including hurricanes), terrorism, war and telecommunication and electrical failures. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our product candidate development programs and our business. For example, the loss of pre-clinical studies or clinical trial data from completed, ongoing or planned trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in a loss of or damage to our data or applications, or inappropriate disclosure of personal, confidential or proprietary information, we could incur liability and the further development of LYR-210, LYR-220 or any other product candidate could be delayed.

In the ordinary course of our business, we directly or indirectly collect and store sensitive data, including intellectual property, confidential information, pre-clinical and clinical trial data, proprietary business

information, personal data and personally identifiable health information of our clinical trial subjects and employees, in our data centers and on our networks, or on those of third parties. The secure processing, maintenance and transmission of this information is critical to our operations. Despite our security measures, our information technology and infrastructure has been and, from time to time, may be vulnerable to attacks by hackers or internal bad actors, or breached due to employee error, a technical vulnerability, malfeasance or other disruptions. Although, to our knowledge, we have not experienced any material security breach to date, any such breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, significant regulatory penalties, and such an event could disrupt our operations, damage our reputation, and cause a loss of confidence in us and our ability to conduct clinical trials, which could adversely affect our business reputation and delay our clinical development of our product candidates.

Risks Related to Healthcare Laws and Other Legal Compliance Matters

We will be subject to extensive and costly government regulation.

Product candidates employing our technology will be subject to extensive and rigorous domestic government regulation including regulation by the FDA, the Centers for Medicare and Medicaid Services, or CMS, other divisions of the United States Department of Health and Human Services, the United States Department of Justice, state and local governments, and their respective equivalents outside of the United States. The FDA regulates the research, development, pre-clinical and clinical testing, manufacture, safety, effectiveness, record-keeping, reporting, labeling, packaging, storage, approval, advertising, promotion, sale, distribution, import, and export of pharmaceutical products. If products employing our technologies are marketed abroad, they will also be subject to extensive regulation by foreign governments, whether or not they have obtained FDA approval for a given product and its uses. Such foreign regulation may be equally or more demanding than corresponding United States regulation.

Government regulation substantially increases the cost and risk of researching, developing, manufacturing, and selling our products. The regulatory review and approval process, which includes pre-clinical testing and clinical trials of each product candidate, is lengthy, expensive, and uncertain. We or our collaborators must obtain and maintain regulatory authorization to conduct pre-clinical studies and clinical trials. We or our collaborators must obtain regulatory approval for each product we intend to market, and the manufacturing facilities used for the products must be inspected and meet legal requirements. Securing regulatory approval requires the submission of extensive pre-clinical and clinical data and other supporting information for each proposed therapeutic indication in order to establish the product's safety and efficacy, potency and purity, for each intended use. The development and approval process takes many years, requires substantial resources, and may never lead to the approval of a product.

Even if we are able to obtain regulatory approval for a particular product, the approval may limit the indicated medical uses for the product, may otherwise limit our ability to promote, sell, and distribute the product, may require that we conduct costly post-marketing surveillance, and/or may require that we conduct ongoing post-marketing studies. Material changes to an approved product, such as, for example, manufacturing changes or revised labeling, may require further regulatory review and approval. Once obtained, any approvals may be withdrawn, including, for example, if there is a later discovery of previously unknown problems with the product, such as a previously unknown safety issue.

If we, our collaborators, consultants, contract manufacturers, CROs or other vendors, fail to comply with applicable regulatory requirements at any stage during the regulatory process, such noncompliance could result in, among other things, delays in the approval of applications or supplements to approved applications; refusal of a regulatory authority, including the FDA, to review pending market approval applications or supplements to approved applications; warning letters; fines; import and/or export restrictions; product recalls or

seizures; injunctions; total or partial suspension of production; civil penalties; withdrawals of previously approved marketing applications or licenses; recommendations by the FDA or other regulatory authorities against governmental contracts; and/or criminal prosecutions.

Enacted and future healthcare legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and could adversely affect our business.

In the United States, the EU and other jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes and proposed changes to the healthcare system that could prevent or delay marketing approval of our products in development, restrict or regulate post-approval activities involving any product candidates for which we obtain marketing approval, impact pricing and reimbursement and impact our ability to sell any such products profitably. In particular, there have been and continue to be a number of initiatives at the U.S. federal and state levels that seek to reduce healthcare costs and improve the quality of healthcare. In addition, new regulations and interpretations of existing healthcare statutes and regulations are frequently adopted.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively the ACA, was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers. Among the provisions of the ACA, those of greatest importance to the pharmaceutical and biotechnology industries include the following:

- an annual, non-deductible fee payable by any entity that manufactures or imports certain branded prescription drugs and biologic agents (other than those designated as orphan drugs), which is apportioned among these entities according to their market share in certain government healthcare programs;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 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;
- new requirements to report certain financial arrangements with physicians and teaching hospitals, including reporting "transfers of value" made or distributed to prescribers and other healthcare providers and reporting investment interests held by physicians and their immediate family members;
- 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;
- 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;
- extension of a manufacturer's 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 certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and

- establishment of a Center for Medicare Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been judicial and Congressional challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. For example, the creation of the Independent Payment Advisory Board, which had been included as part of the provisions of the ACA, was repealed in February 2018. The current presidential administration and Congress will likely continue to seek to modify, repeal, or otherwise invalidate all, or certain provisions of, the ACA. It is uncertain the extent to which any such changes may impact our business or financial condition.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. In August 2011, the Budget Control Act of 2011 resulted in aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2029 unless additional action is taken by Congress. In January 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further 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. These new laws or any other similar laws introduced in the future may result in additional reductions in Medicare and other healthcare funding, which could negatively affect our customers and accordingly, our financial operations.

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, CMS may develop new payment and delivery models, such as bundled payment models. In addition, recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several U.S. Congressional inquiries and proposed and enacted federal legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, and review the relationship between pricing and manufacturer patient programs. The Trump administration's budget proposal for fiscal year 2020 contains further drug price control measures that could be enacted during the 2020 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Further, the Trump administration released a "Blueprint", or plan, to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase drug manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products, and reduce the out of pocket costs of drug products paid by consumers. The Department of Health and Human Services has already started the process of soliciting feedback on some of these measures and, at the same, is immediately implementing others under its existing authority. While any proposed measures will require authorization through additional legislation to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. We expect that additional U.S. federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that the U.S. federal government will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

Individual states in the United States have also increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological 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. Legally-mandated price controls on payment amounts by third-party payors or other restrictions could harm our business, results of operations, financial condition and prospects. In addition, regional healthcare 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 healthcare programs. This could reduce the ultimate demand for our product candidates or put pressure on our product pricing.

In the EU, similar political, economic and regulatory developments may affect our ability to profitably commercialize our product candidates, if approved. In addition to continuing pressure on prices and cost containment measures, legislative developments at the EU or member state level may result in significant additional requirements or obstacles that may increase our operating costs. The delivery of healthcare in the EU, including the establishment and operation of health services and the pricing and reimbursement of medicines, is almost exclusively a matter for national, rather than EU, law and policy. National governments and health service providers have different priorities and approaches to the delivery of healthcare and the pricing and reimbursement of products in that context. In general, however, the healthcare budgetary constraints in most EU member states have resulted in restrictions on the pricing and reimbursement of medicines by relevant health service providers. Coupled with ever-increasing EU and national regulatory burdens on those wishing to develop and market products, this could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to commercialize our product candidates, if approved.

In markets outside of the United States and the EU, reimbursement and healthcare payment systems vary significantly by country, and many countries have instituted price ceilings on specific products and therapies.

In addition, legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA's 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 product 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 action in the United States, the EU or any other jurisdiction. If we or any third parties we may engage are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or such third parties are not able to maintain regulatory compliance, our product candidates may lose any regulatory approval that may have been obtained and we may not achieve or sustain profitability.

Even if we receive regulatory approval of our product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense, and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our product candidates.

Any product candidate for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, packaging, distribution, adverse event reporting, storage, recordkeeping, export, import, advertising and promotional activities for such product, among other things, will be subject to extensive and ongoing requirements of and review by the FDA, the EMA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, establishment registration and drug listing requirements, continued compliance with current good manufacturing practice, or cGMP, requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping and GCP requirements for any clinical trials that we conduct post-approval. In addition, the sponsor of an approved NDA is subject to periodic inspections and other FDA monitoring and reporting obligations, including obligations to monitor and report adverse events and other information such as the failure of a product to meet the specifications in the NDA. NDA sponsors must submit new or supplemental applications

and obtain FDA approval for certain changes to the approved product, product labeling, or manufacturing process. Application holders must also submit advertising and other promotional material to the FDA and report on ongoing clinical trials. The FDA may require changes in the labeling of already approved drug products and require that sponsors conduct post-marketing studies. 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.

Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, including the requirement to implement a REMS, which could include requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk mitigation tools. If any of our product candidates receives marketing approval, the accompanying label may limit the approved use of our product, which could limit sales of the product.

The FDA may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of our approved products. In addition, advertising and promotional materials must comply with FDA rules in addition to other potentially applicable federal and state laws. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure they are marketed 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 market our products outside of their approved indications, we may be subject to enforcement action for off-label marketing. Violations of the FDA's restrictions relating to the promotion of prescription products may also lead to investigations alleging violations of federal and state health care fraud and abuse laws, as well as state consumer protection laws.

The distribution of product samples to physicians must comply with the requirements of the FDCA. NDA sponsors must obtain FDA approval for product, manufacturing, and labeling changes, depending on the nature of the change. Depending on the circumstances, failure to meet these post-approval requirements can result in criminal prosecution, fines, injunctions, consent decrees of permanent injunction, recall or seizure of products, total or partial suspension of production, denial or withdrawal of pre-marketing product approvals, or refusal to allow us to enter into supply contracts, including government contracts.

In addition, later discovery of previously unknown adverse events or other problems with our products, manufacturers or manufacturing processes, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may yield various results, including:

- restrictions on manufacturing such products;
- restrictions on the labeling or marketing of a product;
- restrictions on product distribution or use;
- requirements to conduct post-marketing studies or clinical trials;
- warning letters or holds on clinical trials;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;

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- fines, restitution or disgorgement of profits or revenues;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our products;
- product seizure or detention; or
- injunctions or the imposition of civil or criminal penalties.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response, and could generate negative publicity. Any failure to comply with ongoing regulatory requirements may significantly and adversely affect our ability to commercialize and generate revenues. If regulatory sanctions are applied or if regulatory approval is withheld or withdrawn, the value of our company and our operating results will be adversely affected.

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of LYR-210, LYR-220 and/or any other future product candidate. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained which would adversely affect our business, prospects and ability to achieve or sustain profitability.

We also 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. 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 FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted.

Changes in funding for the FDA and other government agencies could hinder their ability to hire and retain key leadership and other personnel, or otherwise prevent new products and services from being developed or commercialized in a timely manner, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory, and policy changes. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of other government agencies that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, including for 35 days beginning on December 22, 2018, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

Our business operations and current and future relationships with investigators, healthcare professionals, consultants, third-party payors, patient organizations and customers will be subject to applicable healthcare regulatory laws, which could expose us to penalties.

Our business operations and current and future arrangements with investigators, healthcare professionals, consultants, third-party payors, patient organizations and customers, may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell and distribute our product candidates, if approved. Such laws include:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or providing any remuneration (including any kickback, bribe, or certain rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, lease, order or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in part, under U.S. federal and state healthcare programs such as Medicare and Medicaid. 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;
- the U.S. federal civil and criminal false claims laws, including the civil False Claims Act, which, among other things, impose criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the U.S. federal government, claims for payment or approval that are false or fraudulent, knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim, or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the U.S. federal government. In addition, the government may assert that a claim including items and services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- the federal civil monetary penalties laws, which impose civil fines for, among other things, the offering or transfer of remuneration to a Medicare or state healthcare program beneficiary if the person knows or should know it is likely to influence the beneficiary's selection of a particular provider, practitioner, or supplier of services reimbursable by Medicare or a state healthcare program, unless an exception applies;
- the U.S. federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which 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, or 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; similar to the U.S. 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 the Health Information Technology for Economic and Clinical Health Act of 2009 and its implementing regulations, which also imposes certain obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information without appropriate authorization by covered entities subject to the rule, such as health plans, healthcare clearinghouses and healthcare providers as well as their business associates that perform certain services involving the use or disclosure of individually identifiable health information;
- the FDCA, which prohibits, among other things, the adulteration or misbranding of drugs, biologics and medical devices;

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- the U.S. Physician Payments Sunshine Act and its implementing regulations, which requires certain manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children’s Health Insurance Program to report annually to the government information related to certain payments and other transfers of value 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 consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;
- analogous U.S. state laws and regulations, including: state anti-kickback and false claims laws, which may 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 any third-party payor, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information, which requires tracking gifts and other remuneration and items of value provided to healthcare professionals and entities; state and local laws that require the registration of pharmaceutical sales representatives; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts; and
- similar healthcare laws and regulations in the EU and other jurisdictions, including reporting requirements detailing interactions with and payments to healthcare providers and laws governing the privacy and security of certain protected information, such as the General Data Protection Regulation, or the GDPR, which imposes obligations and restrictions on the collection and use of personal data relating to individuals located in the EU (including health data).

Ensuring that our internal operations and future business arrangements with third parties 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 relationships with physicians and other healthcare providers, some of whom are compensated in the form of stock options for consulting 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 the laws described above or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, exclusion from government-funded healthcare programs, such as Medicare and Medicaid or similar programs in other countries or jurisdictions, integrity oversight and reporting obligations to resolve allegations of non-compliance, disgorgement, individual imprisonment, contractual damages, reputational harm, diminished profits and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs and imprisonment, which could affect our ability to operate our business. Further, defending against any such actions can be costly, time-consuming and may require significant 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.

We are subject to governmental regulation and other legal obligations, particularly related to privacy, data protection and information security, and we are subject to consumer protection laws that regulate our marketing practices and prohibit unfair or deceptive acts or practices. Our actual or perceived failure to comply with such obligations could harm our business.

We are subject to diverse laws and regulations relating to data privacy and security, including, in the United States, HIPAA and, in the EU and the European Economic Area, or EEA, Regulation 2016/679, known as the GDPR. New privacy rules are being enacted in the United States and globally, and existing ones are being updated and strengthened. For example, on June 28, 2018, California enacted the California Consumer Privacy Act, or CCPA, which takes effect on January 1, 2020. The CCPA creates individual privacy rights for California consumers and increases the privacy and security obligations of entities handling certain personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Complying with these numerous, complex and often changing regulations is expensive and difficult, and failure to comply with any privacy laws or data security laws or any security incident or breach involving the misappropriation, loss or other unauthorized use or disclosure of sensitive or confidential patient or consumer information, whether by us, one of our business associates or another third-party, could adversely affect our business, financial condition and results of operations, including but not limited to: investigation costs, material fines and penalties; compensatory, special, punitive and statutory damages; litigation; consent orders regarding our privacy and security practices; requirements that we provide notices, credit monitoring services and/or credit restoration services or other relevant services to impacted individuals; adverse actions against our licenses to do business; and injunctive relief. Furthermore, these rules are constantly changing; for example, the GDPR came into force in May 2018 changing the European regime. Before that, the US-EU Safe Harbor framework was declared invalid in 2015 and replaced with the EU-U.S. Privacy Shield framework which, along with other methods which permit transfer under European privacy law, are under ongoing review and subject to challenge.

The privacy laws in the EU have been significantly reformed. On May 25, 2018, the GDPR entered into force and became directly applicable in all EU member states. The GDPR implements more stringent operational requirements than its predecessor legislation. For example, the GDPR requires us to make more detailed disclosures to data subjects, requires disclosure of the legal basis on which we can process personal data, makes it harder for us to obtain valid consent for processing, will require the appointment of data protection officers when sensitive personal data, such as health data, is processed on a large scale, provides more robust rights for data subjects, introduces mandatory data breach notification through the EU, imposes additional obligations on us when contracting with service providers and requires us to adopt appropriate privacy governance including policies, procedures, training and data audit. If we do not comply with our obligations under the GDPR, we could be exposed to fines of up to the greater of €20 million or up to 4% of our total global annual revenue in the event of a significant breach. In addition, we may be the subject of litigation and/or adverse publicity, which could adversely affect our business, results of operations and financial condition.

We cannot assure you that our third-party service providers with access to our or our customers', suppliers', trial patients' and employees' personally identifiable and other sensitive or confidential information in relation to which we are responsible will not breach contractual obligations imposed by us, or that they will not experience data security breaches or attempts thereof, which could have a corresponding effect on our business, including putting us in breach of our obligations under privacy laws and regulations and/or which could in turn adversely affect our business, results of operations and financial condition. We cannot assure you that our contractual measures and our own privacy and security-related safeguards will protect us from the risks associated with the third-party processing, storage and transmission of such information.

We face potential liability related to the privacy of health information we obtain from clinical trials sponsored by us.

Most healthcare providers, including research institutions from which we obtain patient health information, are subject to privacy and security regulations promulgated under HIPAA, as amended by the

HITECH. We are not currently classified as a covered entity or business associate under HIPAA and thus are not subject to its requirements or penalties. However, any person may be prosecuted under HIPAA's criminal provisions either directly or under aiding-and-abetting or conspiracy principles. Consequently, depending on the facts and circumstances, we could face substantial criminal penalties if we knowingly receive individually identifiable health information from a HIPAA-covered healthcare provider or research institution that has not satisfied HIPAA's requirements for disclosure of individually identifiable health information. In addition, we may maintain sensitive personally identifiable information, including health information, that we receive throughout the clinical trial process, in the course of our research collaborations, and directly from individuals (or their healthcare providers) who enroll in our patient assistance programs. As such, we may be subject to state laws requiring notification of affected individuals and state regulators in the event of a breach of personal information, which is a broader class of information than the health information protected by HIPAA. Our clinical trial programs outside the United States may implicate international data protection laws, including the EU Data Protection Directive and legislation of the EU member states implementing it.

Our activities outside the United States impose additional compliance requirements and generate additional risks of enforcement for noncompliance. Failure by our CROs and other third-party contractors to comply with the strict rules on the transfer of personal data outside of the European Union into the United States may result in the imposition of criminal and administrative sanctions on such collaborators, which could adversely affect our business. Furthermore, certain health privacy laws, data breach notification laws, consumer protection laws and genetic testing laws may apply directly to our operations and/or those of our collaborators and may impose restrictions on our collection, use and dissemination of individuals' health information. Moreover, patients about whom we or our collaborators obtain health information, as well as the providers who share this information with us, may have statutory or contractual rights that limit our ability to use and disclose the information. We may be required to expend significant capital and other resources to ensure ongoing compliance with applicable privacy and data security laws. Claims that we have violated individuals' privacy rights or breached our contractual obligations, even if we are not found liable, could be expensive and time-consuming to defend and could result in adverse publicity that could harm our business.

If we or third-party CMOs, CROs or other contractors or consultants fail to comply with applicable federal, state or local regulatory requirements, we could be subject to a range of regulatory actions that could affect our or our contractors' ability to develop and commercialize our product candidates and could harm or prevent sales of any affected products that we are able to commercialize, or could substantially increase the costs and expenses of developing, commercializing and marketing our products. Any threatened or actual government enforcement action could also generate adverse publicity and require that we devote substantial resources that could otherwise be used in other aspects of our business. Increasing use of social media could give rise to liability, breaches of data security or reputational damage.

We are subject to environmental, health and safety laws and regulations, and we may become exposed to liability and substantial expenses in connection with environmental compliance or remediation activities.

Our operations, including our development, testing and manufacturing activities, are subject to numerous environmental, health and safety laws and regulations. These laws and regulations govern, among other things, the controlled use, handling, release and disposal of and the maintenance of a registry for, hazardous materials and biological materials, such as chemical solvents, human cells, carcinogenic compounds, mutagenic compounds and compounds that have a toxic effect on reproduction, laboratory procedures and exposure to blood-borne pathogens. If we fail to comply with such laws and regulations, we could be subject to fines or other sanctions.

As with other companies engaged in activities similar to ours, we face a risk of environmental liability inherent in our current and historical activities, including liability relating to releases of or exposure to hazardous or biological materials. Environmental, health and safety laws and regulations are becoming more stringent. We may be required to incur substantial expenses in connection with future environmental compliance or

remediation activities, in which case, the production efforts of our third-party manufacturers or our development efforts may be interrupted or delayed.

We and our employees are increasingly utilizing social media tools as a means of communication both internally and externally.

Despite our efforts to monitor evolving social media communication guidelines and comply with applicable rules, there is risk that the use of social media by us or our employees to communicate about our product candidates or business may cause us to be found in violation of applicable requirements. In addition, our employees may knowingly or inadvertently make use of social media in ways that may not comply with our policies and other legal or contractual requirements, which may give rise to liability, lead to the loss of trade secrets or other intellectual property or result in public exposure of personal information of our employees, clinical trial patients, customers and others. Furthermore, negative posts or comments about us or our product candidates in social media could seriously damage our reputation, brand image and goodwill. Any of these events could have a material adverse effect on our business, prospects, operating results and financial condition and could adversely affect the price of our common stock.

Risks Related to Commercialization

Developments by competitors may render our products or technologies obsolete or non-competitive or may reduce the size of our markets.

Our industry has been characterized by extensive research and development efforts, rapid developments in technologies, intense competition and a strong emphasis on proprietary products. We face potential competition from many different sources, including pharmaceutical, biotechnology and specialty pharmaceutical companies either marketing or developing therapeutics to treat CRS. Academic research institutions, governmental agencies, as well as public and private institutions are also potential sources of competitive products and technologies. Our competitors may have or may develop superior technologies or approaches, which may provide them with competitive advantages. Our potential products may not compete successfully. If these competitors access the marketplace before we do with better or less expensive therapeutics, our product candidates, if approved for commercialization, may not be profitable to sell or worthwhile to continue to develop. Technology in the pharmaceutical industry has undergone rapid and significant change, and we expect that it will continue to do so. Any compounds, products or processes that we develop may become obsolete or uneconomical before we recover any expenses incurred in connection with their development. The success of our product candidates will depend upon factors such as product efficacy, safety, reliability, availability, timing, scope of regulatory approval, acceptance and price, among other things. Other important factors to our success include speed in developing product candidates, completing clinical development and laboratory testing, obtaining regulatory approvals and manufacturing and selling commercial quantities of potential products.

Our product candidates are intended to compete directly or indirectly with existing products and treatments. Even if approved and commercialized, our product candidates may fail to achieve market acceptance with hospitals, physicians or patients. Hospitals, physicians or patients may conclude that our potential products are less safe or effective or otherwise less attractive than these existing drugs. If our product candidates do not receive market acceptance for any reason, our revenue potential would be diminished, which would materially adversely affect our ability to become profitable.

Significant competition exists in the treatment of CRS. We will need to compete with all currently available or future therapies within the indications where our development is focused. LYR-210, if approved and commercialized, will face significant competition. The main classes of marketed products that are available for the treatment of CRS include nasal saline irrigation, intranasal corticosteroidal sprays and antibiotics, as well as surgical intervention. In addition, one company is currently marketing, and several companies are also currently developing, biologic monoclonal antibodies, or mAbs, for the treatment of nasal polyps. If these biologic mAbs

are successfully developed and approved for marketing, they could represent competition for LYR-220 for the segment of patients that have polyps. Finally, one company is developing an oral DP-2 antagonist currently in Phase 2 clinical trials for CRS patients that could represent competition across the spectrum of CRS patients.

There are a number of companies developing or marketing therapies for the treatment and management of CRS that may compete with our current product candidates, including many major pharmaceutical and biotechnology companies. These companies include, among others: Hoffman-La Roche, GlaxoSmithKline, Gossamer Bio, AnaptysBio, Regeneron, OptiNose and Intersect ENT.

Most of our competitors, including many of those listed above, have substantially greater capital resources, robust product candidate pipelines, established presence in the market and expertise in research and development, manufacturing, pre-clinical and clinical testing, obtaining regulatory approvals and reimbursement and marketing approved products than we do. As a result, our competitors may achieve product commercialization or patent protection earlier than we can. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified clinical, regulatory, scientific, sales, marketing and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient, or are less expensive than any products that we may develop or that would render any products that we may develop obsolete or noncompetitive.

The successful commercialization of our product candidates will depend in part on the extent to which governmental authorities and health insurers establish coverage, adequate reimbursement levels and pricing policies. Failure to obtain or maintain coverage and adequate reimbursement for our product candidates, if approved, could limit our ability to market those products and decrease our ability to generate revenue.

The availability of coverage and adequacy of reimbursement by governmental healthcare programs such as Medicare and Medicaid, private health insurers and other third-party payors are essential for most patients to be able to afford medical services and pharmaceutical products such as our product candidates, assuming FDA approval. Our ability to achieve acceptable levels of coverage and reimbursement for our products or procedures using our products by governmental authorities, private health insurers and other organizations will have an effect on our ability to successfully commercialize our product candidates. Obtaining coverage and adequate reimbursement for our products may be particularly difficult because of the higher prices often associated with drugs administered under the supervision of a physician. Separate reimbursement for the product itself or the treatment or procedure in which our product is used may not be available. A decision by a third-party payor not to cover or separately reimburse for our products or procedures using our products, could reduce physician utilization of our products once approved. Assuming there is coverage for our product candidates or procedures using our product candidates by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. Patients are unlikely to use our product candidates unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our product candidates. Similarly, our product candidates are physician-administered treatments and as such, separate reimbursement for the product itself may or may not be available. Instead, the hospital or administering physician may be reimbursed only for providing the treatment or procedure in which our product is used. To the extent separate coverage and reimbursement should become available for LYR-210, we anticipate that it will be sold to physicians on a “buy and bill” basis. Buy and bill products must be purchased by healthcare providers before they can be administered to patients. Healthcare providers subsequently must seek reimbursement for the product from the applicable third-party payor, such as Medicare or a health insurance company. Healthcare providers may be reluctant to administer our product candidates, if approved, because they would have to fund the purchase of the product and then seek reimbursement, which may be lower than their purchase price, or because they do not want the additional administrative burden required to obtain reimbursement for the product.

Further, the status of reimbursement codes for any of our product candidates, if approved, could also affect reimbursement. J-Codes and Q-Codes are reimbursement codes maintained by the Centers for Medicare and Medicaid Services, or CMS, that are a component of the Healthcare Common Procedure Coding System and are typically used to report injectable drugs that ordinarily cannot be self-administered. We currently do not have a specific J-Code or Q-Code for any of our product candidates. If our product candidates are approved, we may apply for one but cannot guarantee that a J-Code or Q-Code will be granted. To the extent separate coverage or reimbursement is available for any product candidate, if approved, and a specific J-Code or Q-Code is not available, physicians would need to use a non-specific miscellaneous J-Code to bill third-party payors for these physician-administered drugs. Because miscellaneous J-Codes may be used for a wide variety of products, health plans may have more difficulty determining the actual product used and billed for the patient. These claims must often be submitted with additional information and manually processed, which can delay claims processing times as well as increase the likelihood for claim denials and claim errors. We cannot be sure that coverage and reimbursement in the United States, the EU or elsewhere will be available for our product candidates or any product that we may develop, and any reimbursement that may become available may not be adequate or may be decreased or eliminated in the future.

Third-party payors increasingly are challenging prices charged for pharmaceutical products and services, and many third-party payors may refuse to provide coverage and reimbursement for particular drugs and biologics when an equivalent generic drug, biosimilar or a less expensive therapy is available. It is possible that a third-party payor may consider our product candidates as substitutable and only offer to reimburse patients for the less expensive product. Even if we show improved efficacy or improved convenience of administration with our product candidates, pricing of existing third-party therapeutics may limit the amount we will be able to charge for our product candidates. These payors may deny or revoke the reimbursement status of a given product or establish prices for new or existing marketed products at levels that are too low to enable us to realize an appropriate return on our investment in our product candidates. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize our product candidates, and may not be able to obtain a satisfactory financial return on our product candidates.

There is significant uncertainty related to the insurance coverage and reimbursement of newly-approved products. In the United States, third-party payors, including private and governmental payors, such as the Medicare and Medicaid programs, play an important role in determining the extent to which new drugs and biologics will be covered. The Medicare and Medicaid programs increasingly are used as models in the United States for how private payors and other governmental payors develop their coverage and reimbursement policies for drugs and biologics. Some third-party payors may require pre-approval of coverage for new or innovative drug therapies before they will reimburse healthcare providers who use such therapies. We cannot predict at this time what third-party payors will decide with respect to the coverage and reimbursement for our product candidates.

No uniform policy for coverage and reimbursement for products exists among third-party payors in the United States. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our product candidates to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. Furthermore, rules and regulations regarding reimbursement change frequently, in some cases on short notice, and we believe that changes in these rules and regulations are likely.

Outside the United States, international operations are generally subject to extensive governmental price controls and other market regulations, and we believe the increasing emphasis on cost-containment initiatives in the EU and other jurisdictions have and will continue to put pressure on the pricing and usage of our product candidates. In many countries, the prices of medical products are subject to varying price control mechanisms as part of national health systems. Other countries allow companies to fix their own prices for medical products, but monitor and control company profits. Additional foreign price controls or other changes in pricing regulation

could restrict the amount that we are able to charge for our product candidates. Accordingly, in markets outside the United States, the reimbursement for our product candidates may be reduced compared with the United States and may be insufficient to generate commercially-reasonable revenue and profits.

Moreover, increasing efforts by governmental and third-party payors in the United States and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for newly approved products and, as a result, they may not cover or provide adequate payment for our product candidates. We expect to experience pricing pressures in connection with the sale of our product candidates due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs and biologics and surgical procedures and other treatments, has become intense. As a result, increasingly high barriers are being erected to the entry of new products.

Our clinical studies were designed to demonstrate the safety and efficacy of LYR-210 based on FDA requirements and may not be seen as compelling to physicians or patients.

Our success depends on the medical community's acceptance of LYR-210, if approved, as a treatment for CRS patients. LYR-210 was previously studied in an open-label, Phase 1 clinical trial with 20 patients in New Zealand and Australia, which achieved its primary endpoint of safety at week 4. In the Phase 1 trial, we also observed that patients generally experienced significant and rapid, clinically meaningful and durable improvement in SNOT-22 scores. Significant reduction in SNOT-22 scores was observed at week 1, and this reduction persisted through week 25, which was the end of the trial. While the results of this early clinical trial suggest a favorable safety and efficacy profile, the study design and results, and the design and results of future clinical trials we conduct, may not be viewed as compelling to our physician customers or patients. If physicians do not find our data compelling, even if LYR-210 receives marketing approval they may choose not to use our products or limit their use. We cannot assure you that any data that we or others generate will be consistent with that observed in the Phase 1 clinical trial of LYR-210, nor that results will be maintained beyond the time points studied. We also cannot assure you that any data that may be collected will be compelling to the medical community because the data may not be clinically meaningful and may not demonstrate that LYR-210 is an attractive procedure when compared against data from alternative treatments.

Even if either LYR-210 or LYR-220 receives marketing approval, it may fail to achieve market acceptance by physicians, patients, third-party payors or others in the medical community necessary for commercial success.

If either LYR-210 or LYR-220 receives marketing approval, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. If it does not achieve an adequate level of acceptance, we may not generate significant product revenues or become profitable. The degree of market acceptance of LYR-210 or LYR-220, if approved for commercial sale, will depend on a number of factors, including but not limited to:

- perceptions by members of the healthcare community, including physicians, about the safety and effectiveness of our platform;
- the perception by members of the healthcare community, including physicians, or patients that the process of administering LYR-210 or LYR-220, is not unduly cumbersome;
- the efficacy and potential advantages compared to alternative treatments;
- effectiveness of sales and marketing efforts;
- the cost of treatment in relation to alternative treatments;
- our ability to offer our products for sale at competitive prices;

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- the convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support;
- the timing of market introduction of competitive products;
- the availability of third-party coverage and adequate reimbursement;
- product labeling or product insert requirements of the FDA, the EMA or other regulatory authorities, including any limitations or warnings contained in a product's approved labeling;
- the prevalence and severity of any side effects; and
- any restrictions on the use of our product together with other medications.

If our product candidates are approved, but do not achieve an adequate level of acceptance by physicians, healthcare payors, and patients, we may not generate sufficient revenue from these products, and we may not be able to achieve or sustain profitability. Our efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may never be successful. In addition, our ability to successfully commercialize our product candidates will depend on our ability to manufacture our products through third-party manufacturers, differentiate our products from competing products and defend the intellectual property of our products.

Because we expect sales of LYR-210, if approved, to generate substantially all of our product revenues for a substantial period, the failure of this product to find market acceptance would harm our business and could require us to seek additional financing.

If physicians or patients are not willing to change current practices and adopt our office-based administration procedure for LYR-210 and LYR-220, our products may fail to gain market acceptance, and our business will be harmed.

Our initial product candidates, LYR-210 and LYR-220, are bioresorbable polymeric matrices designed to be administered in a brief, non-invasive, in-office procedure by an ENT physician under endoscopic visualization via a single-use applicator. While we believe ENT physicians will be able to administer our product candidates, if successfully developed and approved, in conjunction with an endoscopy procedure, thereby making the placement aligned with the existing care continuum for CRS patients and eliminating the need for ENT physicians to schedule separate surgical time, ENT physicians may not adopt our in-office procedure for a number of reasons, including:

- lack of significant experience with the placement procedure via a single-use applicator;
- lack of availability of adequate insurance coverage or reimbursement for the placement procedure;
- perceived inadequacy of evidence supporting clinical benefits or cost-effectiveness of the placement procedure and/or our products in general over existing alternatives;
- a perception that patients may be unable to tolerate the placement procedure in the physician office setting; and
- liability risks generally associated with the use of new products and procedures.

If ENT physicians do not adopt the placement procedure for any reason, including those listed above, our ability to grow our business would be impaired, even if LYR-210 and LYR-220 receive marketing approval.

We believe recommendations and support of our products by notable ENT physicians could influence market acceptance and adoption. If we do not receive support from influential ENT physicians, our ability to achieve broad market acceptance for our products may be impaired.

In addition, if patient receptivity toward treatment in an ENT physician office setting becomes less favorable in the future, this shift could negatively impact market acceptance of our products. Any negative change due to patient receptivity could also be compounded by patients reporting to physicians or other patients through word-of-mouth or social media.

Additionally, while it is currently more cost-effective to the healthcare system for providers to perform the placement procedure in an ENT physician's office than a FESS procedure in an operating room, healthcare economics are subject to change. If the use of our products were to cease being more cost-effective than FESS due to changes in reimbursement economics, our products may fail to gain market acceptance, our future growth would be limited and our business may be adversely affected.

If we are unable to establish sales, marketing and distribution capabilities either on our own or in collaboration with third parties, we may not be successful in commercializing LYR-210 or LYR-220, if approved, and we may not be able to generate any revenue.

We do not have any infrastructure for the sales, marketing or distribution of our products, and the cost of establishing and maintaining such an organization may exceed the cost-effectiveness of doing so.

We expect to build our own focused sales, distribution and marketing infrastructure to market LYR-210 and LYR-220 in the United States, if approved. There are significant expenses and risks involved with establishing our own sales, marketing and distribution 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 LYR-210. Additionally, if the commercial launch of LYR-210 or LYR-220 for which we recruit a sales force and establish marketing capabilities 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.

Factors that may inhibit our efforts to commercialize our product candidates on our own include:

- our inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future products;
- our inability to equip medical and sales personnel with effective materials, including medical and sales literature to help them educate physicians and other healthcare providers regarding applicable diseases and our future products;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines;
- our inability to develop or obtain sufficient operational functions to support our commercial activities; and

- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

We do not anticipate having the resources in the foreseeable future to allocate to the sales and marketing of LYR-210, LYR-220 or any future product candidates in markets outside of the United States. Therefore, our future sales in these markets will largely depend on our ability to enter into and maintain collaborative relationships for such capabilities, the collaborator's strategic interest in the product and such collaborator's ability to successfully market and sell the product. We intend to selectively pursue collaborative arrangements regarding the sale and marketing of LYR-210, if approved, for certain markets outside of the United States; however, we cannot assure that we will be able to establish or maintain such collaborative arrangements, or if able to do so, that they will have effective sales forces.

If we are unable to build our own sales force or negotiate a collaborative relationship for the commercialization of LYR-210 or LYR-220, we may be forced to delay the potential commercialization of LYR-210 or LYR-220 or reduce the scope of our sales or marketing activities for LYR-210 or LYR-220. If we elect to increase our expenditures to fund commercialization activities ourselves, we will need to obtain additional capital, which may not be available to us on acceptable terms, or at all. We could enter into arrangements with collaborative partners at an earlier stage than otherwise would be ideal and we may be required to relinquish rights to LYR-210 or LYR-220 or otherwise agree to terms unfavorable to us, any of which may have an adverse effect on our business, operating results and prospects.

If we are unable to establish adequate sales, marketing and distribution capabilities, either on our own or in collaboration with third parties, we will not be successful in commercializing LYR-210 or LYR-220 and may not become profitable and may incur significant additional losses. We will be competing with many companies that currently have extensive and well-funded marketing and sales operations. Without an internal team or the support of a third party to perform marketing and sales functions, we may be unable to compete successfully against these more established companies.

Our future growth may depend, in part, on our ability to penetrate foreign markets, where we would be subject to additional regulatory burdens and other risks and uncertainties.

Our future profitability may depend, in part, on our ability to commercialize our product candidates in foreign markets for which we may rely on collaboration with third parties. We are evaluating the opportunities for the development and commercialization of our product candidates in foreign markets. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the applicable regulatory authority in that foreign market, and we may never receive such regulatory approval for any of our product candidates. To obtain separate regulatory approvals in other countries we may be required to comply with numerous and varying regulatory requirements of such countries regarding the safety and efficacy of our product candidates and governing, among other things, clinical trials and commercial sales, pricing and distribution of our product candidates, and we cannot predict success in these jurisdictions. If we obtain approval of our product candidates and ultimately commercialize our product candidates in foreign markets, we would be subject to additional risks and uncertainties, including:

- our customers' ability to obtain reimbursement for our product candidates in foreign markets;
- our inability to directly control commercial activities if we are relying on third parties;
- the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements;
- different medical practices and customs in foreign countries affecting acceptance in the marketplace;

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- import or export licensing requirements;
- longer accounts receivable collection times;
- longer lead times for shipping;
- language barriers for technical training and the need for language translations;
- reduced protection of intellectual property rights in some foreign countries;
- the existence of additional potentially relevant third-party intellectual property rights;
- foreign currency exchange rate fluctuations; and
- the interpretation of contractual provisions governed by foreign laws in the event of a contract dispute.

Foreign sales of our product candidates could also be adversely affected by the imposition of governmental controls, political and economic instability, trade restrictions and changes in tariffs.

In some countries, particularly the countries in Europe, 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 drug. 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 candidate 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 business could be harmed, possibly materially.

The sizes of the patient populations that our product candidates are intended to treat have not been established with precision. If the market opportunities for our product candidates are smaller than we estimate, or if any approval that we obtain is based on a narrower definition of the patient population than we anticipate, our revenue and ability to achieve profitability may be materially adversely affected.

The precise incidence and prevalence of the conditions we aim to address with our programs is unknown and cannot be precisely determined. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our product candidates, are based on beliefs and estimates. These estimates have been derived from a variety of sources, including the scientific literature, surveys of clinics, patient foundations or market research, and may prove to be incorrect. Further, new information may change the estimated incidence or prevalence of these diseases, and the incidence or prevalence of these diseases is subject to change.

The total addressable market across all of our product candidates will ultimately depend upon, among other things, the indications and conditions of use for which the product candidates are approved and may be marketed, acceptance by the medical community and patient access, drug pricing and reimbursement. The sizes of the patient populations that our product candidates are intended to treat in the United States and other major markets and elsewhere may turn out to be smaller than expected, patients may not be otherwise amenable to treatment with our product candidates or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business. Further, even if we obtain significant market share for our product candidates, we may never achieve profitability despite obtaining such significant market share.

If we cannot compete for market share against other drug companies, we may not achieve sufficient product revenues and our business will suffer.

If our product candidates receive FDA approval, they will compete with a number of existing and future drugs and therapies developed, manufactured and marketed by other companies. Existing or future competing products may provide greater therapeutic convenience or clinical or other benefits for a specific indication than our products, or may offer comparable performance at a lower cost. If our products fail to capture and maintain market share, we may not achieve sufficient product revenues and our business will suffer.

We will compete against fully integrated pharmaceutical companies and smaller companies that are collaborating with larger pharmaceutical companies, academic institutions, government agencies and other public and private research organizations. Many of these competitors may have compounds already approved or in development in the therapeutic categories that we are targeting with our current and future product candidates. In addition, many of these competitors, either alone or together with their collaborative partners, may operate larger research and development programs or have substantially greater financial resources than we do, as well as greater experience in:

- developing product candidates;
- undertaking pre-clinical testing and clinical trials;
- obtaining NDA approval by the FDA and comparable foreign regulatory approvals of product candidates;
- formulating and manufacturing products; and
- launching, marketing and selling products.

If we obtain approval to commercialize any products outside of the United States, a variety of risks associated with international operations could materially adversely affect our business.

If either LYR-210 or LYR-220 is approved for commercialization, we intend to selectively partner with third parties to market it in certain jurisdictions outside the United States. We expect that we will be subject to additional risks related to international pharmaceutical operations, including:

- different regulatory requirements for drug approvals and rules governing drug commercialization in foreign countries;
- reduced protection for intellectual property rights;
- foreign reimbursement, pricing and insurance regimes;
- potential noncompliance with the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act 2010 and similar anti-bribery and anticorruption laws in other jurisdictions; and
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad.

We have no prior experience in these areas. In addition, there are complex regulatory, tax, labor and other legal requirements imposed by both the European Union and many of the individual countries in Europe with which we will need to comply. Many U.S.-based biotechnology companies have found the process of marketing their own products in Europe to be very challenging.

Certain legal and political risks are also inherent in foreign operations. For example, it may be more difficult for us to enforce our agreements or collect receivables through foreign legal systems. There is a risk that foreign governments may nationalize private enterprises in certain countries where we may operate. In certain countries or regions, terrorist activities and the response to such activities may threaten our operations more than in the United States. Social and cultural norms in certain countries may not support compliance with our corporate policies including those that require compliance with substantive laws and regulations. Also, changes in general economic and political conditions in countries where we may operate are a risk to our financial performance and future growth. Additionally, the need to identify financially and commercially strong partners for commercialization outside the United States who will comply with the high manufacturing and legal and regulatory compliance standards we require is a risk to our financial performance. As we operate our business globally, our success will depend, in part, on our ability to anticipate and effectively manage these and other related risks. There can be no assurance that the consequences of these and other factors relating to our international operations will not have an adverse effect on our business, financial condition or results of operations.

Potential product liability lawsuits against us could cause us to incur substantial liabilities and limit commercialization of any products that we may develop.

The use of our product candidates, including LYR-210 and LYR-220, in clinical trials and the sale of any products for which we obtain marketing approval exposes us to the risk of product liability claims. For example, complications arising from the placement procedure for LYR-210 or LYR-220, or from the degradation or dislodgment of the LYR-210 or LYR-220 polymeric matrix within the sinuses after placement, or from foreign growth occurring in the sinus after placement, could give rise to product liability claims against us. Product liability claims might be brought against us by consumers, healthcare providers, pharmaceutical companies or others selling or otherwise coming into contact with our products. On occasion, large judgments have been awarded in class action lawsuits based on products that had unanticipated adverse effects. If we cannot successfully defend against product liability claims, we could incur substantial liability and costs, which may not be covered by insurance. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- impairment of our business reputation and significant negative media attention;
- withdrawal of participants from our clinical trials;
- significant costs to defend the related litigation and related litigation;
- distraction of management's attention from our primary business;
- substantial monetary awards to patients or other claimants;
- inability to commercialize LYR-210 or LYR-220 or any other product candidate;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- decreased demand for LYR-210 or LYR-220 or any other product candidate, if approved for commercial sale; and
- loss of revenue.

Risks Related to Our Dependence on Third Parties

We will rely on third parties for the manufacture of materials for our research programs, pre-clinical studies and clinical trials and we do not have long-term contracts with any of these parties. This reliance on third parties increases the risk that we will not have sufficient quantities of such materials, product candidates, or any therapies that we may develop and commercialize, or that such supply will not be available to us at an acceptable cost, which could delay, prevent, or impair our development or commercialization efforts.

Although we currently conduct certain manufacturing operations internally, we currently have no plans to build our own clinical or commercial scale manufacturing capabilities. Instead, we expect to rely on third parties for the manufacture of our product candidates and related raw materials for future pre-clinical and clinical development, as well as for commercial manufacture if any of our product candidates receive marketing approval. We do not have a long-term agreement with any of the third-party manufacturers we currently use to provide pre-clinical and clinical drug supply, and purchase any required materials on a purchase order basis. Certain of these manufacturers are critical to our production and the loss of these manufacturers to one of our competitors or otherwise, or an inability to obtain quantities at an acceptable cost or quality, could delay, prevent or impair our ability to timely conduct pre-clinical studies or clinical trials, and would materially and adversely affect our development and commercialization efforts. The facilities used by third-party manufacturers to manufacture our product candidates must be approved by the FDA pursuant to inspections that will be conducted after we submit an NDA to the FDA. We do not control the manufacturing process of, and are completely dependent on, third-party manufacturers for compliance with cGMP requirements for manufacture of drug products and other laws and regulations. If these third-party 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. Some of our contract manufacturers may not have produced a commercially-approved product and therefore may not have obtained the requisite FDA approvals to do so. In addition, we have no control over the ability of third-party 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.

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, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products. In addition, we may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms.

Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- failure of third-party manufacturers to comply with regulatory requirements and maintain quality assurance;
- breach of the manufacturing agreement by the third party;
- failure to manufacture our product according to our specifications;
- failure to manufacture our product according to our schedule or at all;
- misappropriation of our proprietary information, including our trade secrets and know-how; and

- termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Our product candidates and any products that we may develop may compete with other product candidates and products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us. Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval, and any related remedial measures may be costly or time-consuming to implement. We do not currently have arrangements in place for redundant supply or a second source for all required raw materials used in the manufacture of our product candidates. If our current third-party manufacturers cannot perform as agreed, we may be required to replace such manufacturers and we may be unable to replace them on a timely basis or at all. Our current and anticipated future dependence upon others for the manufacture of our product candidates or products may adversely affect our future profit margins and our ability to commercialize any products that receive marketing approval on a timely and competitive basis.

We rely on third parties to conduct our pre-clinical studies and clinical trials. Any failure by a third party to conduct the clinical trials according to GCPs and in a timely manner may delay or prevent our ability to seek or obtain regulatory approval for or commercialize our product candidates.

We are dependent on third parties to conduct our pre-clinical studies and clinical trials, including our ongoing clinical trials for LYR-210, and we expect to rely on third parties to conduct any future clinical trials and pre-clinical studies for our product candidates, including LYR-220. Specifically, we have used and relied on, and intend to continue to use and rely on, medical institutions, clinical investigators, CROs and consultants to conduct our clinical trials in accordance with our clinical protocols and regulatory requirements. These CROs, investigators and other third parties play a significant role in the conduct and timing of these trials and subsequent collection and analysis of data. While we have agreements governing the activities of our third-party contractors, we have limited influence over their actual performance. Nevertheless, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the applicable protocol and legal, regulatory and scientific standards, and our reliance on the CROs and other third parties does not relieve us of our regulatory responsibilities. We and our CROs are required to comply with GCP requirements, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for all of our product candidates in clinical development. Regulatory authorities enforce these GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of our CROs or trial sites fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable, and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials complies with GCP regulations. In addition, our clinical trials must be conducted with product produced under cGMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

There is no guarantee that any such CROs, investigators or other third parties will devote adequate time and resources to such trials or perform as contractually required. If any of these third parties fail to meet expected deadlines, adhere to our clinical protocols or meet regulatory requirements, or otherwise performs in a substandard manner, our clinical trials may be extended, delayed or terminated. In addition, many of the third parties with whom we contract may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other drug development activities that could harm our competitive position. In addition, principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and may receive cash or equity compensation in connection with such services. If these relationships and any related compensation result in perceived or actual conflicts of interest, or the FDA concludes that the financial relationship may have affected the interpretation of the trial, the integrity of the data generated at the applicable clinical trial site may be questioned, and the utility of the clinical

trial itself may be jeopardized, which could result in the delay or rejection of any NDA we submit to the FDA. Any such delay or rejection could prevent us from commercializing our product candidates.

If any of our relationships with these third-parties terminate, we may not be able to enter into arrangements with alternative third parties or do so on commercially reasonable terms. Switching or adding additional CROs, investigators and other third parties involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we carefully manage our relationships with our CROs, investigators and other third parties, there can be no assurance that we will not encounter challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition and prospects.

We may collaborate with third parties for the development and commercialization of LYR-210, LYR-220 and any of our future product candidates. We may not succeed in establishing and maintaining collaborative relationships, which may significantly limit our ability to develop and commercialize LYR-210, LYR-220 or our future product candidates successfully, if at all.

We may seek collaborative relationships for the development and commercialization of LYR-210, LYR-220 or any future product candidates. Failure to obtain a collaborative relationship for LYR-210, LYR-220 or any future product candidates may significantly impair the potential for these product candidates. We also may need to enter into collaborative relationships to provide funding to support our other research and development programs. The process of establishing and maintaining collaborative relationships is difficult, time-consuming and involves significant uncertainty, such as:

- a collaboration partner may shift its priorities and resources away from our product candidates due to a change in business strategies, or a merger, acquisition, sale or downsizing;
- a collaboration partner may seek to renegotiate or terminate their relationships with us due to unsatisfactory clinical results, manufacturing issues, a change in business strategy, a change of control or other reasons;
- a collaboration partner may cease development in therapeutic areas which are the subject of our strategic collaboration;
- a collaboration partner may not devote sufficient capital or resources towards our product candidates;
- a collaboration partner may change the success criteria for a product candidate, thereby delaying or ceasing development of such candidate;
- a significant delay in initiation of certain development activities by a collaboration partner will also delay payment of milestones tied to such activities, thereby impacting our ability to fund our own activities;
- a collaboration partner could develop a product that competes, either directly or indirectly, with our product candidate;
- a collaboration partner with commercialization obligations may not commit sufficient financial or human resources to the marketing, distribution or sale of a product;
- a collaboration partner with manufacturing responsibilities may encounter regulatory, resource or quality issues and be unable to meet demand requirements;

- a collaboration partner may terminate a strategic alliance;
- a dispute may arise between us and a partner concerning the research, development or commercialization of a product candidate resulting in a delay in milestones, royalty payments or termination of an alliance and possibly resulting in costly litigation or arbitration which may divert management attention and resources; and
- a partner may use our products or technology in such a way as to invite litigation from a third party.

If any collaborator fails to fulfill its responsibilities in a timely manner, or at all, our research, clinical development, manufacturing or commercialization efforts related to that collaboration could be delayed or terminated, or it may be necessary for us to assume responsibility for expenses or activities that would otherwise have been the responsibility of our collaborator. If we are unable to establish and maintain collaborative relationships on acceptable terms or to successfully transition terminated collaborative agreements, we may have to delay or discontinue further development of one or more of our product candidates, undertake development and commercialization activities at our own expense or find alternative sources of capital. Moreover, any collaborative partners we enter into agreements with in the future may shift their priorities and resources away from our product candidates or seek to renegotiate or terminate their relationships with us.

If we seek, but are not able to establish, collaborations, we may have to alter our development and commercialization plans.

Our product development programs and the potential commercialization of our product candidates will require substantial additional capital. We may decide to collaborate with pharmaceutical and biotechnology companies for the development and potential commercialization of our product candidates.

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 design or results of clinical trials, the likelihood of approval by the FDA or comparable regulatory authorities outside the United States, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. Collaborations are complex and time-consuming to negotiate and document. In addition, 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.

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 such product candidate, 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. 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 revenue.

Data provided by collaborators and others upon which we rely that has not been independently verified could turn out to be false, misleading, or incomplete.

We rely on third-party vendors, such as CROs, scientists and collaborators to provide us with significant data and other information related to our projects, pre-clinical studies or clinical trials and our business. If such third parties provide inaccurate, misleading or incomplete data, our business, prospects and results of operations could be materially adversely affected.

We do not have multiple sources of supply for some of the components used in LYR-210 or LYR-220, nor long-term supply contracts, and certain of our suppliers are critical to our production. If we were to lose a supplier, it could have a material adverse effect on our ability to complete the development of LYR-210 or LYR-220. If we obtain regulatory approval for LYR-210 or LYR-220, we would need to expand the supply of their components in order to commercialize them.

We do not have multiple sources of supply for the components used in the manufacturing of LYR-210 or LYR-220. We also do not have long-term supply agreements with any of our component suppliers. We may not be able to establish additional sources of supply for our product candidates, or may be unable to do so on acceptable terms. Manufacturing suppliers are subject to cGMP quality and regulatory requirements, covering manufacturing, testing, quality control and record keeping relating to our product candidates and subject to ongoing inspections by the regulatory agencies. Failure by any of our suppliers to comply with applicable regulations may result in long delays and interruptions in supply. Manufacturing suppliers are also subject to local, state and federal regulations and licensing requirements. Failure by any of our suppliers to comply with all applicable regulations and requirements may result in long delays and interruptions in supply.

The number of suppliers of the raw material components of our product candidates is limited. In the event it is necessary or desirable to acquire supplies from alternative suppliers, we might not be able to obtain them on commercially reasonable terms, if at all. It could also require significant time and expense to redesign our manufacturing processes to work with another company. Additionally, certain of our suppliers are critical to our production and the loss of these suppliers to one of our competitors or otherwise would materially and adversely affect our development and commercialization efforts.

As part of any marketing approval, regulatory authorities conduct inspections that must be successful prior to the approval of the product. Failure of manufacturing suppliers to successfully complete these regulatory inspections will result in delays. If supply from the approved supplier is interrupted, there could be a significant disruption in commercial supply. An alternative vendor would need to be qualified through an NDA amendment or supplement which could result in further delay. The FDA or other regulatory agencies outside of the United States may also require additional studies if a new supplier is relied upon for commercial production. Switching vendors may involve substantial costs and is likely to result in a delay in our desired clinical and commercial timelines.

If we are unable to obtain the supplies we need at a reasonable price or on a timely basis, it could have a material adverse effect on our ability to complete the development of LYR-210 or LYR-220 or, if we obtain regulatory approval for LYR-210 or LYR-220, to commercialize them.

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

In the ordinary course of our business, we may enter into collaborations, in-licensing arrangements, joint ventures, strategic alliances, partnerships or other arrangements to develop new products and to pursue new markets. Proposing, negotiating and implementing collaborations, in-licensing arrangements, joint ventures, strategic alliances or partnerships may be a lengthy and complex process. Other companies, including those with

substantially greater financial, marketing, sales, technology or other business resources, may compete with us for these opportunities or arrangements. We may not identify, secure, or complete any such transactions or arrangements in a timely manner, on a cost-effective basis, on acceptable terms or at all. We have limited institutional knowledge and experience with respect to these business development activities, and we may also not realize the anticipated benefits of any such transaction or arrangement. In particular, these collaborations may not result in the development of products that achieve commercial success or result in significant revenues and could be terminated prior to developing any products.

Additionally, we may not be in a position to exercise sole decision making authority regarding the transaction or arrangement, which could create the potential risk of creating impasses on decisions, and our future collaborators may have economic or business interests or goals that are, or that may become, inconsistent with our business interests or goals. It is possible that conflicts may arise with our collaborators, such as conflicts concerning the achievement of performance milestones, or the interpretation of significant terms under any agreement, such as those related to financial obligations or the ownership or control of intellectual property developed during the collaboration. If any conflicts arise with any current or future collaborators, they may act in their self-interest, which may be adverse to our best interest, and they may breach their obligations to us. In addition, we may have limited control over the amount and timing of resources that any current or future collaborators devote to our or their future products. Disputes between us and our collaborators may result in litigation or arbitration which would increase our expenses and divert the attention of our management. Further, these transactions and arrangements will be contractual in nature and will generally be terminable under the terms of the applicable agreements and, in such event, we may not continue to have rights to the products relating to such transaction or arrangement or may need to purchase such rights at a premium.

If we enter into in-bound intellectual property license agreements, we may not be able to fully protect the licensed intellectual property rights or maintain those licenses. Future licensors could retain the right to prosecute and defend the intellectual property rights licensed to us, in which case we would depend on the ability of our licensors to obtain, maintain and enforce such licensed intellectual property. These licensors may determine not to pursue litigation against other companies or may pursue such litigation less aggressively than we would. If our licensors do not adequately protect such licensed intellectual property, competitors may be able to use such intellectual property and erode or negate any competitive advantage we may have, which could materially harm our business, negatively affect our position in the marketplace, limit our ability to commercialize our products and product candidates and delay or render impossible our achievement of profitability. Further, entering into such license agreements could impose various diligence, commercialization, royalty or other obligations on us. Future licensors may allege that we have breached our license agreement with them, and accordingly seek to terminate our license, which could adversely affect our competitive business position and harm our business prospects.

Risks Related to Our Intellectual Property

If we are unable to obtain, maintain or adequately protect our intellectual property rights, we may not be able to compete effectively in our markets.

We rely upon a combination of patents, trade secret protection and confidentiality agreements to protect our intellectual property and prevent others from duplicating LYR-210, LYR-220 and any future product candidates.

The strength of patents in the biotechnology and pharmaceutical field involves complex legal, factual and scientific questions and can be uncertain. It is possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. The patent applications that we own may fail to result in issued patents with claims that cover our product candidates in the United States or in other foreign countries. There is no assurance that all of the potentially relevant prior art relating to our patents and patent applications has been found, which can invalidate a patent or prevent a patent from issuing from a

pending patent application. Even if patents do successfully issue and even if such patents cover our product candidates, third parties may challenge the inventorship, ownership, validity, enforceability or scope of such patents, which may result in such patents being narrowed or invalidated, or being held unenforceable. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property, provide exclusivity for our product candidates or prevent others from designing around our claims. In addition, no assurances can be given that third parties will not create new products or methods that achieve similar results without infringing upon our patents. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

If the patent applications we hold with respect to our programs or product candidates fail to issue, if their breadth or strength of protection is threatened, or if they fail to provide meaningful exclusivity for our product candidates, it could dissuade companies from collaborating with us to develop product candidates, and threaten our ability to commercialize future products. Several patent applications covering our product candidates have been filed recently. We cannot offer any assurances about which, if any, patents will issue, the breadth of any such patents or whether any issued patents will be found invalid or unenforceable or will be threatened by third parties. Any successful opposition to these patents or any other patents owned by us could deprive us of rights necessary for the successful commercialization of any product candidates that we may develop.

Further, if we encounter delays in regulatory approvals, the period of time during which we could market a product candidate under patent protection could be reduced. Since patent applications in the United States and most other countries are confidential for a period of time after filing, and some remain so until issued, we cannot be certain that we were the first to file any patent application related to a product candidate. Furthermore, if third parties have filed such patent applications before enactment of the Leahy-Smith Act on March 16, 2013, an interference proceeding in the United States can be initiated by a third party to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. In addition, patents have a limited lifespan. In the United States, the expiration of a patent is generally 20 years after it is filed. Various extensions may be available; however, the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired for the patent covering a product, we may be open to competition from generic competing products.

The issuance of a patent is not conclusive as to its inventorship, ownership, scope, validity or enforceability, and our patents may be challenged in the courts or patent offices in the United States and abroad. In addition, the issuance of a patent does not give us the right to practice the patented invention. Third parties may have blocking patents that could prevent us from marketing our product candidate, if approved, or practicing our own patented technology. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is either not patentable or that we elect not to patent, processes for which patents are difficult to enforce and any other elements of our product candidate discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. Once disclosed, we are likely to lose trade secret protection.

Although we require all of our employees and consultants to assign their inventions to us, to the extent that employees or consultants use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions. Further, although we require that all of our

employees, consultants, collaborators, advisors and any third parties who have access to our proprietary know-how, information or technology enter into confidentiality agreements, we cannot provide any assurances that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently discover our trade secrets or develop substantially equivalent information and techniques. Any of these parties may breach these agreements and we may not have adequate remedies for any specific breach. Misappropriation or unauthorized disclosure of our trade secrets or other confidential proprietary information could impair our competitive position and may have a material adverse effect on our business. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. Additionally, if the steps taken to maintain our trade secrets or other confidential proprietary information are deemed inadequate, we may have insufficient recourse against third parties for misappropriating the trade secret or other confidential proprietary information.

If we are unable to prevent material disclosure of the non-patented intellectual property related to our technologies to third parties, and there is no guarantee that we will have any such enforceable trade secret protection, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, results of operations and financial condition.

Third-party claims of intellectual property infringement may prevent or delay our development and commercialization efforts.

Our commercial success depends in part on our avoiding infringement, or allegations of infringement, of the patents and other proprietary rights of third parties. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, reexamination, and inter partes review proceedings before the United States Patent and Trademark Office, or USPTO, and corresponding foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are pursuing development candidates. Many companies in intellectual property-dependent industries, including the biotechnology and pharmaceutical industries, have employed intellectual property litigation as a means to gain an advantage over their competitors. As the biotechnology and pharmaceutical industries expand and more patents are issued, and as we gain greater visibility and market exposure as a public company, the risk increases that our product candidates may be subject to claims of infringement of the patent rights of third parties. Some claimants may have substantially greater resources than we do and may be able to sustain the costs of complex intellectual property litigation to a greater degree and for longer periods of time than we could. In addition, patent holding companies that focus solely on extracting royalties and settlements by enforcing patent rights may target us.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to composition of matter, drug delivery, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. We cannot guarantee that our technologies, products, compositions and their uses do not or will not infringe third party patent or other intellectual property rights. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. Pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our product candidates or the use of our product candidates. After issuance, the scope of patent claims remains subject to construction as determined by an interpretation of the law, the written disclosure in a patent and the patent's prosecution history. Our interpretation of the relevance or the scope of a patent or a pending application may be incorrect, which may negatively impact our ability to market our product candidates. If any third-party patents were held by a court of competent jurisdiction to cover the composition of matter of any of our product candidates, the manufacturing process of any of our product candidates, the method of use for any of our product candidates, the holders of any such

patents may be able to block our ability to commercialize such product candidate unless we obtained a license under the applicable patents, which may not be available or may not be available on commercially reasonable terms, or until such patents expire.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize one or more of our product candidates and/or harm our reputation and financial results. Defense of these claims, regardless of their merit, could involve substantial litigation expense and could be a substantial diversion of management and employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products, in the case of claims concerning registered trademarks, rename our product candidates, or obtain one or more licenses from third parties, which may require substantial time and monetary expenditure, and which might be impossible or technically infeasible. Furthermore, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us; alternatively or additionally it could include terms that impede or destroy our ability to compete successfully in the commercial marketplace.

We may be 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. It may be difficult to detect infringers who do not advertise the components that are used in their products. Moreover, it may be difficult or impossible to obtain evidence of infringement in a competitor's or potential competitor's product. To counter infringement or unauthorized use, we may be required to file infringement claims on a country-by-country basis, which can be expensive and time-consuming and divert the time and attention of our management and scientific personnel. 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. Any claims we assert against perceived infringers could also 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 addition, in an infringement proceeding, a court may decide that a patent of ours is not valid, is unenforceable and/or is not infringed, or may construe the patent's claims narrowly or refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated, interpreted narrowly or held unenforceable, could put our patent applications at risk of not issuing, and could limit our ability to assert those patents against those parties or other competitors and 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 invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks, which could materially harm our business and negatively affect our position in the marketplace.

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 this type of 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 have a material adverse effect on the price of our common stock.

Recent patent reform legislation has increased the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, and may diminish the value of patents in general.

As is the case with other biopharmaceutical companies, our commercial 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 wide-ranging patent reform legislation in the United States, including the Leahy-Smith America Invents Act, or the Leahy-Smith Act, could increase those uncertainties and costs.

The Leahy-Smith Act includes a number of significant changes to U.S. patent law, including provisions that affect the way patent applications are prosecuted and may also affect patent litigation. Under The Leahy-Smith Act, the United States transitioned from a “first-to-invent” to a “first-to-file” system for deciding which party should be granted a patent when two or more patent applications are filed by different parties claiming the same invention. This will require us to be cognizant going forward of the time from invention to filing of a patent application and be diligent in filing patent applications, but circumstances could prevent us from promptly filing patent applications on our inventions. The Leahy-Smith Act also enlarged the scope of disclosures that qualify as prior art, and it expanded the scope of procedures that a third party may use to challenge a U.S. patent, including post grant review and inter partes review procedures. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in U.S. federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. The Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

In addition, recent court rulings in cases such as *Association for Molecular Pathology v. Myriad Genetics, Inc.*, *BRCA1- & BRCA2-Based Hereditary Cancer Test Patent Litigation*, and *Promega Corp. v. Life Technologies Corp.* have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents once obtained. 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 be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

We may employ individuals who were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of any of our employee’s former employers or other third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, or our ability to hire personnel, which, in any case of the foregoing, could adversely impact our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Obtaining and maintaining our 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.

The USPTO, European and other patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due 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/or applications. We have systems in place to remind us to pay these fees, and we employ an outside firm and rely on our outside counsel to pay these fees due to non-U.S. patent agencies. 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. We employ law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, 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. In such an event, our competitors might be able to enter the market, which could have a material adverse effect on our business.

Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court.

If we initiated legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation.

Such mechanisms include re-examination, post grant review, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover our product candidates.

The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on one or more of our product candidates. Such a loss of patent protection could have a material adverse impact on our business. A defendant could also challenge our ownership of patents assigned to us. We cannot be certain that a third party would not challenge our rights to these patents and patent applications. Any legal proceeding or enforcement action can also be expensive and time-consuming.

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

The term of any individual patent depends on applicable law in the country where the patent is granted. In the United States, provided all maintenance fees are timely paid, a patent generally has a term of 20 years from its application filing date or earliest claimed non-provisional filing date. Extensions may be available under certain circumstances, but the life of a patent and, correspondingly, 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. For patents that are eligible for extension of patent term, we expect to seek extensions of patent terms in the United States

and, if available, in other countries. 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). We might not be granted an extension because of, for example, failure to apply within applicable periods, failure to apply prior to the expiration of relevant patents or otherwise failure to satisfy any of the numerous applicable requirements. Moreover, 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 obtain approval of competing products following our patent expiration by referencing our clinical and pre-clinical data and launch their product earlier than might otherwise be the case. If this were to occur, it could have a material adverse effect on our ability to generate revenue.

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

Filing, prosecuting and defending our intellectual property in all countries throughout the world could 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. Therefore, we may choose not to pursue or maintain protection for certain intellectual property in certain jurisdictions. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent such competitors from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, 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 lawsuit that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license. In addition, many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties (for example, the patent owner has failed to “work” the invention in that country, or the third party has patented improvements) or limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of the patent.

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

While we seek to protect the trademarks we use in the United States and in other countries, we may be unsuccessful in obtaining registrations and/or otherwise protecting these trademarks. If that were to happen, we may be prevented from using our names, brands and trademarks unless we enter into appropriate royalty, license or coexistence agreements, which may not be available or may not be available on commercially reasonable

terms. Over the long term, if we are unable to establish name recognition based on our trademarks, trade names, service marks and domain names, then we may not be able to compete effectively, resulting in a material adverse effect on our business. Our registered or unregistered trademarks or trade names may be challenged, infringed, diluted 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 to build name recognition among potential partners or customers in our markets of interest. At times, competitors may adopt trademarks and trade names similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our registered or unregistered trademarks. Over the long term, if we are unable to establish name recognition based on our trademarks, then we may not be able to compete effectively and our business may be adversely affected. During trademark registration proceedings, we may receive rejections. Although we would be given an opportunity to respond to those rejections, 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 to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings. Effective trademark protection may not be available or may not be sought in every country in which our products are made available. Any name we propose to use for our products in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA objects to any of our proposed product names, we may be required to expend significant additional resources in an effort to identify a usable substitute name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. 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.

Our proprietary rights may not adequately protect our technologies and product candidates, and do not necessarily address all potential threats to our competitive advantage.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business, or permit us to maintain our competitive advantage. The following examples are illustrative:

- others may be able to make products that are the same as or similar to our product candidates but that are not covered by the claims of the patents that we own;
- others, including inventors or developers of our patented technologies who may become involved with competitors, may independently develop similar technologies that function as alternatives or replacements for any of our technologies without infringing our intellectual property rights;
- we might not have been the first to conceive and reduce to practice the inventions covered by our patents or patent applications;
- we might not have been the first to file patent applications covering certain of our patents or patent applications;
- it is possible that our pending patent applications will not result in issued patents;
- it is possible that there are prior public disclosures that could invalidate our patents;
- our issued patents may not provide us with any commercially viable products or competitive advantage, or may be held invalid or unenforceable, as a result of legal challenges by our competitors;

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- the Supreme Court of the United States, other U.S. federal courts, Congress, the USPTO or similar foreign authorities may change the standards of patentability and any such changes could narrow or invalidate, or change the scope of, our or our collaboration partners' patents;
- patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time;
- our competitors might conduct research and development activities in countries where we do not have patent rights, or in countries where research and development safe harbor laws exist, and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- ownership, validity or enforceability of our patents or patent applications may be challenged by third parties; and
- the patents of third parties or pending or future applications of third parties, if issued, may have an adverse effect on our business.

Risks Related to Employee Matters and Managing Growth

We will need to expand our organization, and we may experience difficulties in managing this growth, which could disrupt our operations.

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of product candidate development, regulatory affairs and sales, marketing and distribution. As of _____, 2020, we had _____ full-time employees. To manage our growth activities, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. As we expand our organization, we may have difficulty identifying, hiring and integrating new personnel. Future growth would impose significant additional responsibilities on our management, including the need to identify, recruit, maintain, motivate and integrate additional employees, consultants and contractors. Also, our management may need to divert a disproportionate amount of its attention away from our day-to-day activities and devote a substantial amount of time to managing these growth activities. We may not be able to effectively manage the expansion of our operations, which may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of product candidates. If our management is unable to effectively manage our growth, our expenses may increase more than expected, our ability to generate and/or grow revenues could be reduced, and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize our product candidates and compete effectively will depend, in part, on our ability to effectively manage any future growth.

Many of the biotechnology and pharmaceutical companies that we compete against for qualified personnel and consultants have greater financial and other resources, different risk profiles and a longer history in the industry than we do. If we are unable to continue to attract and retain high-quality personnel and consultants, the rate and success at which we can discover and develop product candidates and operate our business will be limited.

If we lose key management or scientific personnel, cannot recruit qualified employees, directors, officers or other significant personnel or experience increases in our compensation costs, our business may materially suffer.

We are highly dependent on our management and directors, including our chief executive officer, Maria Palasis, Ph.D., and our chief scientific officer, Dana Washburn, M.D., among others. Due to the specialized knowledge each of our officers and key employees possesses with respect to our product candidates and our operations, the loss of service of any of our officers or directors could delay or prevent the successful enrollment and completion of our clinical trials. We do not carry key person life insurance on our officers or directors. Although we have formal employment agreements with our executive officers, these agreements do not prevent them from terminating their employment with us at any time.

In addition, our future success and growth will depend in part on the continued service of our directors, employees and management personnel and our ability to identify, hire, and retain additional personnel. If we lose one or more of our executive officers or key employees, our ability to implement our business strategy successfully could be seriously harmed. Furthermore, replacing executive officers and 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 regulatory approval of and commercialize product candidates successfully. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these additional key personnel 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. In addition, 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 engaged by entities other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to develop and commercialize product candidates will be limited.

Many of our employees have become or will soon become vested in a substantial amount of our common stock or a number of common stock options. Our employees may be more likely to leave us if the shares they own have significantly appreciated in value relative to the original purchase prices of the shares, or if the exercise prices of the options that they hold are significantly below the market price of our common stock, particularly after the expiration of the lock-up agreements described herein. Our future success also depends on our ability to continue to attract and retain additional executive officers and other key employees.

We may engage in acquisitions or strategic partnerships that could disrupt our business, cause dilution to our stockholders, reduce our financial resources, cause or to incur debt or assume contingent liabilities, and subject us to other risks.

In the future, we may enter into transactions to acquire other businesses, products or technologies or enter into strategic partnerships, including licensing. If we do identify suitable acquisition or partnership candidates, we may not be able to make such acquisitions or partnerships on favorable terms, or at all. Any acquisitions or partnerships we make may not strengthen our competitive position, and these transactions may be viewed negatively by customers or investors. We may decide to incur debt in connection with an acquisition or issue our common stock or other equity securities to the stockholders of the acquired company, which would reduce the percentage ownership of our existing stockholders. We could incur losses resulting from undiscovered liabilities of the acquired business or partnership that are not covered by the indemnification we may obtain from the seller or our partner. In addition, we may not be able to successfully integrate any acquired personnel, technologies and operations into our existing business in an effective, timely and non-disruptive manner. Acquisitions or partnerships may also divert management attention from day-to-day responsibilities, lead to a loss of key personnel, increase our expenses and reduce our cash available for operations and other uses. We cannot predict the number, timing or size of future acquisitions or partnerships or the effect that any such transactions might have on our operating results.

We or the third parties upon whom we depend may be adversely affected by natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Natural disasters could severely disrupt our operations and have a material adverse effect on our business, results of operations, financial condition and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as the manufacturing facilities on which we rely, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place may prove inadequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business. For example, following Hurricane Maria, shortages in production and delays in a number of medical supplies produced in Puerto Rico resulted, and any similar interruption due to a natural disaster affecting us or any of our third-party manufacturers could materially delay our operations.

Litigation against us could be costly and time-consuming to defend and could result in additional liabilities.

We may from time to time be subject to legal proceedings and claims that arise in the ordinary course of business or otherwise, such as claims brought by our customers in connection with commercial disputes and employment claims made by our current or former employees. Claims may also be asserted by or on behalf of a variety of other parties, including government agencies, patients or vendors of our customers, or stockholders.

Any litigation involving us may result in substantial costs, operationally restrict our business, and may divert management's attention and resources, which may seriously harm our business, overall financial condition, and results of operations. Insurance may not cover existing or future claims, be sufficient to fully compensate us for one or more of such claims, or continue to be available on terms acceptable to us. A claim brought against us that is uninsured or underinsured could result in unanticipated costs, thereby adversely impacting our results of operations and resulting in a reduction in the trading price of our stock.

Risks Related to Our Common Stock and this Offering

An active trading market for our common stock may not develop.

Prior to this offering, there has been no public market for our common stock. The initial public offering price for our common stock will be determined through negotiations with the underwriters. Although we have applied to have our common stock listed on The Nasdaq Global Market, an active trading market for our shares may never develop or be sustained following this offering. If an active market for our common stock does not develop, it may be difficult for you to sell shares you purchase in this offering without depressing the market price for the shares, or at all.

The market price of our common stock may be volatile and fluctuate substantially, which could result in substantial losses for purchasers of our common stock in this offering.

Our stock price is likely to be volatile. The stock market in general and the market for smaller biopharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, you may not be able to sell your common stock at or above the initial public offering price. The market price for our common stock may be influenced by many factors, including:

- the success of competitive products or technologies;
- actual or expected changes in our growth rate relative to our competitors;

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- results of clinical trials of our product candidates or those of our competitors;
- developments related to our existing or any future collaborations;
- regulatory actions with respect to our product candidates or our competitors' products and product candidates;
- regulatory or legal developments in the United States and other countries;
- development of new product candidates that may address our markets and make our product candidates less attractive;
- changes in physician, hospital or healthcare provider practices that may make our product candidates less useful;
- announcements by us, our partners or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations or capital commitments;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to any of our product candidates or clinical development programs;
- failure to meet or exceed financial estimates and projections of the investment community or that we provide to the public;
- the results of our efforts to discover, develop, acquire or in-license additional product candidates or products;
- actual or expected changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- 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 and elsewhere in this prospectus.

After this offering, our executive officers, directors and principal stockholders, if they choose to act together, will continue to have the ability to control or significantly influence all matters submitted to stockholders for approval.

Upon the closing of this offering, based on the number of shares of common stock outstanding as of _____, 2020, our executive officers, directors and stockholders who owned more than 5% of our outstanding common stock before this offering and their respective affiliates will, in the aggregate, hold shares representing approximately _____% of our outstanding voting stock. As a result, if these stockholders choose to act together, they would be able to control or significantly influence all matters submitted to our stockholders for

approval, as well as our management and affairs. For example, these persons, if they choose to act together, would control or significantly influence the election of directors, the composition of our management and approval of any merger, consolidation or sale of all or substantially all of our assets.

If you purchase shares of common stock in this offering, you will suffer immediate dilution of your investment.

The initial public offering price of our common stock will be 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. To the extent shares subsequently are issued under outstanding options or warrants, you will incur further dilution. Based on an assumed initial public offering price of \$ _____ per share (the midpoint of the price range set forth on the cover page of this prospectus), you will experience immediate dilution of \$ _____ per share as of December 31, 2019, 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. In addition, purchasers of common stock in this offering will have contributed approximately _____ % of the aggregate price paid by all purchasers of our stock but will own only approximately _____ % of our common stock outstanding after this offering.

We have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. We expect that we will use the net proceeds of this offering, together with our existing cash and cash equivalents, to fund the clinical development of LYR-210 and LYR-220, for future product candidate and platform development and the remainder, if any, for working capital and other general corporate purposes as set forth under “Use of Proceeds.” However, our use of these proceeds may differ substantially from our current plans. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending their use, we may 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 are eligible to be sold into the market in the near future, which 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, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. After this offering, we will have outstanding _____ shares of common stock based on the number of shares outstanding as of _____, 2020. This includes the shares that we are selling in this offering, which may be resold in the public market immediately without restriction, unless purchased by our affiliates or existing stockholders. The remaining shares are currently restricted as a result of securities laws or lock-up agreements (which may be waived, with or without notice, by BofA Securities, Inc. and Jefferies LLC) but will become eligible to be sold at various times beginning 180 days after this offering, unless held by one of our affiliates, in which case the resale of those securities will be subject to volume limitations under Rule 144 of the Securities Act of 1933, as amended, or Rule 144. Moreover, after this offering, holders of an aggregate of _____ shares of our common stock will have rights, subject to specified 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, until such shares can otherwise be sold without restriction under Rule 144 or until the rights terminate pursuant to the terms of the stockholders’ agreement between us and such holders. We also intend to register all shares of common stock that we may issue under our equity compensation plans. Once we register these shares, they can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates and the lock-up agreements described in the “Underwriting” section of this prospectus.

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 JOBS Act, and may remain an emerging growth company until the last day of the fiscal year following the fifth anniversary of the closing of this offering. However, if certain events occur prior to the end of such five-year period, including if we become a “large accelerated filer,” our annual gross revenues exceed \$1.07 billion or we issue more than \$1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company prior to the end of such five-year period. For so long as we remain an emerging growth company, we are permitted and intend to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include:

- being permitted to provide 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 in this prospectus;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We have taken advantage of reduced reporting burdens in this prospectus. In particular, in this prospectus, we have provided only two years of audited financial statements and have not included all of the executive compensation related information that would be required if we were not an emerging growth company. We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be reduced or more volatile. 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 these accounting standards until they would otherwise apply to private companies.

We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company, and particularly after we are no longer an emerging growth company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of The Nasdaq Global Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance, which in turn could make it more difficult for us to attract and retain qualified members of our board of directors.

We are evaluating these rules and regulations, and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. These rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404, we will be required to furnish a report by our management on our internal control over financial reporting. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants, adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing whether such controls are functioning as documented, and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by Section 404. We may discover significant deficiencies or material weaknesses, which we may not successfully remediate on a timely basis or at all. Any failure to remediate any significant deficiencies or material weaknesses identified by us or to implement required new or improved controls, or difficulties encountered in their implementation, could cause us to fail to meet our reporting obligations or result in material misstatements in our financial statements. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

If securities or industry analysts do not publish research or reports about our business, or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline, even if our business is doing well.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. We do not currently have, and may never obtain, research coverage by securities and industry analysts. If no or few securities or industry analysts commence coverage of us, the trading price for our stock would be negatively impacted. In the event we obtain securities or industry analyst coverage, if any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, our intellectual property or our stock performance, or if our target pre-clinical studies or clinical trials and operating results fail to meet the expectations of analysts, our stock price would likely decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

We are a “smaller reporting company” and the reduced disclosure requirements applicable to smaller reporting companies may make our common stock less attractive to investors.

We are considered a “smaller reporting company.” We are therefore entitled to rely on certain reduced disclosure requirements, such as an exemption from providing selected financial data and executive compensation information. We are also exempt from the requirement to obtain an external audit on the effectiveness of internal control over financial reporting provided in Section 404(b) of the Sarbanes-Oxley Act. These exemptions and reduced disclosures in our SEC filings due to our status as a smaller reporting company mean our auditors do not review our internal control over financial reporting and may make it harder for investors to analyze our results of operations and financial prospects. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock prices may be more volatile.

Provisions in our restated certificate of incorporation and restated bylaws and under Delaware law could make an acquisition of our company, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our restated certificate of incorporation and our restated bylaws, which will become effective upon the closing of this offering may discourage, delay or prevent a merger, acquisition or other change in control of our company 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 include those establishing:

- a classified board of directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our board of directors;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from filling vacancies on our board of directors;
- the ability of our board of directors to authorize the issuance of shares of preferred stock and to determine the terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- the ability of our board of directors to alter our bylaws without obtaining stockholder approval;
- the required approval of the holders of at least two-thirds of the shares entitled to vote at an election of directors to adopt, amend or repeal our bylaws or repeal the provisions of our restated certificate of incorporation regarding the election and removal of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by the chairman of the board of directors, the chief executive officer, the president or the board of directors, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and
- advance notice procedures that stockholders must comply with in order to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

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.

Our restated certificate of incorporation will designate specific courts as the exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us.

Our restated certificate of incorporation, which will become effective upon the closing of this offering, specifies that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for most legal actions involving claims brought against us by stockholders; provided that, the exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Securities Act, the Exchange Act, the rules and regulations thereunder or any other claim for which the federal courts have exclusive jurisdiction; and provided further that, if and only if the Court of Chancery of the State of Delaware dismisses any such action for lack of subject matter jurisdiction, such action may be brought in another state or federal court sitting in the State of Delaware. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and to have consented to the provisions of our restated certificate of incorporation described above.

We believe this provision benefits us by providing increased consistency in the application of Delaware law by chancellors particularly experienced in resolving corporate disputes, efficient administration of cases on a more expedited schedule relative to other forums and protection against the burdens of multi-forum litigation. However, the provision may have the effect of discouraging lawsuits against our directors, officers, employees and agents as it may limit any stockholder's ability to bring a claim in a judicial forum that such stockholder finds favorable for disputes with us or our directors, officers, employees or agents. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any applicable action brought against us, a court could find the choice of forum provisions contained in our restated certificate of incorporation to be inapplicable or unenforceable in such action. If a court were to find the choice of forum provision contained in our restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our business, financial condition or results of operations.

Because we do not anticipate paying any cash dividends on our common shares in the foreseeable future, capital appreciation, if any, would be your sole source of gain.

We have never declared or paid any cash dividends on our common shares. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. As a result, capital appreciation, if any, of our common shares would be your sole source of gain on an investment in our common shares for the foreseeable future. See the "Dividend Policy" section of this prospectus for additional information.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because biopharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Our ability to use our net operating losses and research and development credits to offset future taxable income may be subject to certain limitations.

As of December 31, 2019, we had net operating loss carryforwards, or NOLs, of \$114.3 million for federal income tax purposes and \$95.6 million for state income tax purposes, which may be available to offset our future taxable income, if any, and begin to expire at various dates through 2037. As of December 31, 2019,

we also had federal and state research and development credit carryforwards of \$5.0 million, which begin to expire at various dates through 2034. In general, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, a corporation that undergoes an “ownership change,” generally defined as a greater than 50% change by value in its equity ownership over a three-year period, is subject to limitations on its ability to utilize its pre-change NOLs and its research and development credit carryforwards to offset future taxable income. Our existing NOLs and research and development credit carryforwards 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 and research and development credit carryforwards could be further limited by Sections 382 and 383 of the Code. Future changes in our stock ownership, some of which might be beyond our control, could result in an ownership change under Section 382 of the Code. For these reasons, in the event we experience a change of control, we may not be able to utilize a material portion of the NOLs or research and development credit carryforwards even if we attain profitability.

The impact of the Tax Cuts and Jobs Act on our financial results is not entirely clear and could differ materially from the financial statements provided herein.

On December 22, 2017, the United States enacted the Tax Cuts and Jobs Act, or TCJA, that significantly reformed the Code. The TCJA, among other things, contained 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 interest expense; limitation of the deduction for NOLs and elimination of NOL carrybacks, in each case, for losses arising in taxable years beginning after December 31, 2017 (though any such tax losses may be carried forward indefinitely); and modifying or repealing many business deductions and credits. The financial statements contained herein reflect the effects of the TCJA based on current guidance. However, there remain uncertainties and ambiguities in the application of certain provisions of the TCJA, and, as a result, we made certain judgments and assumptions in the interpretation thereof. The U.S. Treasury Department and the Internal Revenue Service may issue further guidance on how the provisions of the TCJA will be applied or otherwise administered that differs from our current interpretation. In addition, the TCJA could be subject to potential amendments and technical corrections, any of which could materially lessen or increase certain adverse impacts of the legislation on us.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. All statements other than statements of historical facts contained in this prospectus are forward-looking statements, including but not limited to statements regarding:

- our plans to develop and commercialize our product candidates;
- the timing of our ongoing or planned clinical trials for LYR-210, LYR-220 and any future product candidates;
- the timing of and our ability to obtain and maintain regulatory approvals for LYR-210, LYR-220 and any future product candidates;
- the clinical utility of our product candidates;
- our commercialization, marketing and manufacturing capabilities and strategy;
- our expectations about the willingness of healthcare professionals to use LYR-210, LYR-220 and any future product candidates;
- our intellectual property position;
- our expected use of proceeds from this offering;
- our competitive position and the development or and projections relating to our competitors or our industry;
- our ability to identify, recruit and retain key personnel;
- the impact of laws and regulations;
- our expectations regarding the time during which we will be an emerging growth company under the JOBS Act;
- our plans to identify additional product candidates with significant commercial potential that are consistent with our commercial objectives;
- research and development cost;
- our estimates and statements regarding our future revenue, future results of operations and financial position;
- our business strategy;
- our research and development costs;
- our plans and objectives of management for future operations; and
- the plans and objectives of management.

These statements involve known and unknown risks, uncertainties and other important 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 the forward-looking statements.

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In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential,” “would” or “continue” or the negative of these terms or other similar expressions, although not all forward-looking statements contain these words. The forward-looking statements in this prospectus are only predictions and are based largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of known and unknown risks, uncertainties and assumptions, including those described under the sections in this prospectus entitled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and elsewhere in this prospectus. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. The forward-looking statements contained in this prospectus are excluded from the safe harbor protection provided by the Private Securities Litigation Reform Act of 1995 and Section 27A of the Securities Act of 1933, as amended.

MARKET AND INDUSTRY DATA

We obtained the industry, market and competitive position data in this prospectus from our own internal estimates and research as well as from industry and general publications and research, surveys and studies conducted by third parties. Industry publications, studies and surveys generally state that they have been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that each of these studies and publications is reliable, we have not independently verified market and industry data from third-party sources. Management's estimates are derived from publicly available information, their knowledge of our industry and their assumptions based on such information and knowledge, which we believe to be reasonable. While we believe our internal company research as to such matters is reliable and the market definitions are appropriate, neither such research nor these definitions have been verified by any independent source. This data involves a number of assumptions and limitations which are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in "Risk Factors." These and other factors could cause our future performance to differ materially from our assumptions and estimates.

USE OF PROCEEDS

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

Each \$1.00 increase (decrease) in the assumed initial public offering price of \$ _____ per share would increase (decrease) the net proceeds to us from this offering by approximately \$ _____ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each increase (decrease) of 1.0 million in the number of shares we are offering would increase (decrease) the net proceeds to us from this offering, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, by \$ _____ million, assuming the assumed initial public offering price stays the same.

We anticipate that we will use the net proceeds of this offering, together with our existing cash and cash equivalents, for the following purposes:

- approximately \$ _____ million to \$ _____ million to fund the clinical development and pre-commercialization expenses for LYR-210 through _____ ;
- approximately \$ _____ million to \$ _____ million to fund the development of LYR-220 through _____ ; and
- the remainder, if any, for platform development and other research and development expenses for our pipeline, and for working capital and other general corporate purposes.

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. We may also use a portion of the net proceeds to in-license, acquire, or invest in additional businesses, technologies, products or assets, although currently we have no specific agreements, commitments or understandings in this regard. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the closing of this offering or the amounts that we will actually spend on the uses set forth above. Predicting the cost necessary to develop product candidates can be difficult and we anticipate that we will need additional funds to complete the development of any product candidates we identify. The amounts and timing of our actual expenditures and the extent of clinical development may vary significantly depending on numerous factors, including the progress of our development efforts, the status of and results from pre-clinical studies and any ongoing clinical trials 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 and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Based on our planned use of the net proceeds of this offering and our current cash and cash equivalents, we estimate that such funds will be sufficient to enable us to fund our operating expenses and capital expenditure requirements through _____. We have based this estimate on assumptions that may prove to be incorrect, and we could use our available capital resources sooner than we currently expect. We may satisfy our future cash needs through the sale of equity securities, debt financings, working capital lines of credit, corporate collaborations or license agreements, grant funding, interest income earned on invested cash balances or a combination of one or more of these sources.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term and intermediate-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 all available funds and future earnings, if any, for the operation and expansion of our business and do not anticipate declaring or paying any dividends in the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our board of directors after considering our financial condition, results of operations, capital requirements, contractual requirements, business prospects and other factors the board of directors deems relevant, and subject to the restrictions contained in any future financing instruments.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of December 31, 2019, as follows:

- on an actual basis;
- on a pro forma basis to reflect (1) the issuance and sale of 78,306,611 shares of our Series C preferred stock, at a price of \$0.38811 per share, and warrants to purchase 23,491,979 shares of our common stock, in each case, in January 2020, (2) the automatic conversion of all outstanding shares of our preferred stock into 287,426,285 shares of common stock upon the closing of this offering, (3) the automatic cashless exercise of outstanding warrants to purchase shares of common stock, which, based on an assumed initial public offering price of \$ per share, the midpoint of the price range set forth on the cover of this prospectus, would result in the issuance of shares of our common stock upon the closing of this offering and (4) the filing and effectiveness of our restated certificate of incorporation which will occur upon the closing of this offering; and
- on a pro forma as adjusted basis to give further effect to our issuance and sale of shares of common stock in this offering at an assumed initial public offering price of \$ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Our capitalization following the closing of this offering will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing. You should read this information in conjunction with our consolidated financial statements and the related notes appearing at the end of this prospectus and the “Use of Proceeds,” “Selected Consolidated Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” sections and other financial information contained in this prospectus.

	As of December 31, 2019 (in thousands, except share data)		
	Actual	Pro Forma	Pro Forma As Adjusted(1)
Cash and cash equivalents	\$ 9,808	\$	\$
Redeemable convertible preferred stock (Series A-1/A, Series A-1/B, Series A-1/C, Series A-2, Series A-3, Series A-4, Series B and Series C), par value \$0.001 per share; 210,786,340 shares authorized, 209,119,674 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	\$ 130,666	\$	\$
Stockholders’ (deficit) equity			
Preferred stock, \$0.001 par value; no shares authorized, issued or outstanding, actual; no shares authorized and no shares issued or outstanding, pro forma and pro forma as adjusted	—		
Common stock, par value \$0.001 per share; 275,000,000 shares authorized, 7,962,008 shares issued and outstanding, actual; shares authorized, shares issued and outstanding, pro forma; shares authorized, shares issued and outstanding, pro forma as adjusted	8		
Additional paid-in capital	4,411		
Accumulated deficit	(127,757)		
Total stockholders’ (deficit) equity	(123,338)		
Total capitalization	\$ 7,328	\$	\$

- (1) Each \$1.00 increase (decrease) in the assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, additional paid in capital, total stockholders' equity and total capitalization by \$ _____ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting 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 at the assumed initial public offering price per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, additional paid in capital, total stockholders' equity and total capitalization by approximately \$ _____ million.

The number of shares in the table above does not include:

- 19,759,224 shares of common stock issuable upon the exercise of stock options outstanding, pursuant to our 2016 Plan, as of December 31, 2019, at a weighted-average exercise price of \$0.08 per share;
- 7,568,326 shares of common stock issuable upon the exercise of stock options outstanding, pursuant to our 2005 Plan, as of December 31, 2019, at a weighted-average exercise price of \$0.48 per share;
- _____ shares of common stock issuable upon the exercise of stock options granted after December 31, 2019 pursuant to our 2016 Plan;
- _____ shares of our common stock reserved for future issuance under our 2020 Plan, which will become effective in connection with this offering, as well as any automatic increases in the number of shares of our common stock reserved for future issuance under our 2020 Plan; and
- _____ shares of our common stock that will become available for future issuance under our 2020 ESPP, which will become effective in connection with this offering, and shares of our common stock that become available pursuant to provisions in our 2020 ESPP that automatically increase the share reserve under our 2020 ESPP.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the initial 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, 2019, we had a historical net tangible book value (deficit) of \$(127.6) million, or \$(16.03) per share of common stock. Our historical net tangible book value (deficit) per share represents total tangible assets less total liabilities, divided by the number of shares of our common stock outstanding as of December 31, 2019.

Our pro forma net tangible book value as of December 31, 2019 was \$ _____ million, or \$ _____ per share. Pro forma net tangible book value represents the amount of our total tangible assets less total liabilities, after giving effect to (1) the issuance and sale of 78,306,611 shares of our Series C preferred stock, at a price of \$0.38811 per share, and warrants to purchase 23,491,979 shares of our common stock, in each case, in January 2020, (2) the automatic conversion of all shares of our preferred stock into an aggregate of 287,426,285 shares of our common stock in connection with this offering and (3) the automatic cashless exercise of outstanding warrants to purchase shares of common stock, which, based on an assumed initial public offering price of \$ _____ per share, the midpoint of the price range set forth on the cover of this prospectus, would result in the issuance of shares of our common stock upon the closing of this offering. Pro forma net tangible book value per share represents our pro forma net tangible book value divided by the total number of shares outstanding as of December 31, 2019, after giving effect to the pro forma adjustment described above.

After giving further effect to receipt of the net proceeds from our issuance and the sale of _____ shares of common stock in this offering at an assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of December 31, 2019 would have been approximately \$ _____ million, or approximately \$ _____ per share. This amount represents an immediate increase in pro forma net tangible book value of \$ _____ per share to our existing stockholders and an immediate dilution of approximately \$ _____ per share to new investors participating in this offering. We determine dilution by subtracting the pro forma as adjusted net tangible book value per share after this offering from the amount of cash that a new investor paid for a share of common stock. The following table illustrates this dilution:

Assumed initial public offering price per share	\$ _____
Historical net tangible book value (deficit) per share as of December 31, 2019	\$(16.03)
Increase (decrease) per share attributable to the issuance and sale of shares of our Series C preferred stock and warrants to purchase shares of our common stock, in each case, in January 2020 and the conversion of our preferred stock and the automatic cashless exercise of outstanding warrants to purchase shares of our common stock	_____
Pro forma net tangible book value per share as of December 31, 2019	_____
Increase per share attributable to this offering	_____
Pro forma as adjusted net tangible book value per share after this offering	\$ _____
Dilution per share to new investors in this offering	\$ _____

Each \$1.00 increase (decrease) in the assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted net tangible book value per share after this offering by \$ _____ million, and dilution in pro forma net tangible book value per share to new investors by \$ _____, assuming that the number of

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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. Each increase (decrease) of 1.0 million shares in the number of shares offered by us would increase (decrease) our pro forma as adjusted net tangible book value per share after this offering by \$ _____ per share and decrease (increase) the dilution to new investors by \$ _____ per share, assuming that the assumed initial public offering price remains the same, and after deducting the estimated underwriting discounts and commissions and the estimated offering expenses payable by us.

If the underwriters exercise their option to purchase additional shares of our common stock in full, the pro forma as adjusted net tangible book value after this offering would be \$ _____ per share, the increase in pro forma net tangible book value per share would be \$ _____ and the dilution per share to new investors would be \$ _____ per share, in each case assuming an initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting discounts and commissions and the estimated offering expenses payable by us.

The following table summarizes on the pro forma as adjusted basis described above, as of December 31, 2019, the differences between the number of shares purchased from us, the total consideration paid to us in cash and the average price per share that existing stockholders and new investors paid. The calculation below is based on an assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, before deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	<u>Shares Purchased</u>		<u>Total Consideration</u>		<u>Average Price</u>
	<u>Number</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>	<u>Per Share</u>
Existing stockholders		%	\$	%	\$
New investors					
Total		100.0%		100.0%	\$

A \$1.00 increase or decrease in the assumed initial public offering price of \$ _____ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the total consideration paid by new investors by \$ _____ million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by _____ percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by _____ percentage points, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same. An increase or 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 or decrease the total consideration paid by new investors by \$ _____ million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by _____ % and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by _____ percentage points, assuming no change in the assumed initial public offering price.

The foregoing tables and calculations are based on the number of shares of our common stock outstanding as of December 31, 2019, after giving effect to the automatic conversion of all outstanding shares of our preferred stock into common stock in connection with this offering, and exclude:

- 19,759,224 shares of common stock issuable upon exercise of stock options outstanding under our 2016 Plan as of December 31, 2019, at a weighted-average exercise price of \$0.08 per share;
- 7,568,326 shares of common stock issuable upon exercise of stock options outstanding under our 2005 Plan as of December 31, 2019, at a weighted-average exercise price of \$0.48 per share;
- _____ shares of common stock issuable upon the exercise of stock options granted after December 31, 2019 pursuant to our 2016 Plan;

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- shares of our common stock reserved for future issuance under our 2020 Plan, which will become effective in connection with this offering, as well as any automatic increases in the number of shares of our common stock reserved for future issuance under our 2020 Plan; and
- shares of our common stock that will become available for future issuance under our 2020 ESPP, which will become effective in connection with this offering, and shares of our common stock that become available pursuant to provisions in our 2020 ESPP that automatically increase the share reserve under our 2020 ESPP.

To the extent any of these outstanding options is exercised, there will be further dilution to new investors. If all of such outstanding options had been exercised as of December 31, 2019, the pro forma as adjusted net tangible book value per share after this offering would be \$, and total dilution per share to new investors would be \$.

If the underwriters exercise their option to purchase additional shares of our common stock in full:

- the percentage of shares of common stock held by existing stockholders will decrease to approximately % of the total number of shares of our common stock outstanding after this offering; and
- the number of shares held by new investors will increase to , or approximately % of the total number of shares of our common stock outstanding after this offering.

SELECTED CONSOLIDATED FINANCIAL DATA

You should read the following selected consolidated financial data together with our consolidated financial statements and the related notes appearing at the end of this prospectus and the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” section of this prospectus. We have derived the consolidated statement of operations data for the years ended December 31, 2019 and 2018 and the consolidated balance sheet data as of December 31, 2019 and 2018 from our audited consolidated financial statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of results that may be expected in any future period.

	Years Ended December 31,	
	2019	2018
	(in thousands, except share and per share data)	
Consolidated Statement of Operations Data:		
Grant revenues	\$ —	\$ 1,244
Operating expenses:		
Research and development	12,032	4,975
General and administrative	4,487	3,528
Total operating expenses	<u>16,519</u>	<u>8,503</u>
Loss from operations	(16,519)	(7,259)
Other income:		
Interest income (expense), net	213	36
Other income, net	—	10
Change in fair value of tranche liability	—	1,184
Total other income, net	<u>213</u>	<u>1,230</u>
Net loss	<u>\$ (16,306)</u>	<u>\$ (6,029)</u>
Net loss per share attributable to common stockholders—basic and diluted ⁽¹⁾	<u>\$ (2.37)</u>	<u>\$ (1.07)</u>
Weighted-average common shares outstanding—basic and diluted ⁽¹⁾	<u>6,998,502</u>	<u>5,728,033</u>
Pro forma net loss per share attributable to common stockholders—basic and diluted (unaudited) ⁽¹⁾	<u>\$ (0.08)</u>	
Pro forma weighted-average common shares outstanding—basic and diluted (unaudited) ⁽¹⁾	<u>216,118,176</u>	

- (1) See Note 2 to our consolidated financial statements included elsewhere in this prospectus for an explanation of the method used to calculate the historical and pro forma basic and diluted net loss per common share and the weighted average number of shares used in the computation of the per share amounts.

	As of December 31,	
	2019	2018
	(in thousands)	
Consolidated Balance Sheet Data:		
Cash and cash equivalents	\$ 9,808	\$ 23,888
Working capital ⁽¹⁾	4,911	22,967
Total assets	14,963	25,359
Total redeemable convertible preferred stock	130,666	130,353
Total stockholders’ deficit	(123,338)	(107,074)

- (1) We define working capital as current assets less current liabilities. See our consolidated financial statements for further details regarding our current assets and current liabilities.

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

You should read the following discussion and analysis of our financial condition and results of operations together with the "Selected Consolidated Financial Data" section of this prospectus and our consolidated financial statements and the related notes included elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this prospectus, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a clinical-stage therapeutics company focused on the development and commercialization of novel integrated drug and delivery solutions for the localized treatment of patients with ear, nose and throat diseases. Our proprietary technology platform, XTreo, is designed to precisely and consistently deliver medicines directly to the affected tissue for sustained periods with a single administration. Our initial product candidates, LYR-210 and LYR-220, are bioresorbable polymeric matrices designed to be administered in a brief, non-invasive, in-office procedure and intended to deliver up to six months of continuous drug therapy to the sinonasal passages for the treatment of chronic rhinosinusitis, or CRS. The therapeutic embedded within LYR-210 and LYR-220 is mometasone furoate, which is the active ingredient in various U.S. Food and Drug Administration, or FDA, approved drugs and has a well-established efficacy and safety profile. CRS is an inflammatory disease of the paranasal sinuses which leads to debilitating symptoms and significant morbidities and affects approximately 14 million people in the United States. We are advancing LYR-210 as a preferred alternative to surgery in an ongoing Phase 2 LANTERN clinical trial for CRS patients who have failed medical management. In our Phase 1 clinical trial, LYR-210 met its primary safety endpoint, and we observed that patients generally experienced significant and rapid, clinically meaningful and durable improvement in SNOT-22 scores, an established patient symptom severity scale, through week 25, which was the end of the trial. We are also developing LYR-220 for use in CRS patients who have an enlarged nasal cavity due to sinus surgery but continue to require treatment to manage CRS symptoms. Beyond CRS, we believe our XTreo platform has potential applications in other disease areas, which we are actively exploring to further broaden its therapeutic potential.

We were incorporated as a Delaware corporation on November 21, 2005, and our headquarters is located in Watertown, Massachusetts. On July 16, 2018, we formally changed our name to Lyra Therapeutics, Inc. Our operations to date have been limited to organizing and staffing our company, business planning, raising capital, developing our technology, building our intellectual property portfolio and conducting research and development activities for our product candidates. We do not have any products approved for sale and have not generated any revenue from product sales. To date, we have funded our operations primarily through private placements of redeemable convertible preferred stock and funding from government contracts. From inception through December 31, 2019, we have raised an aggregate of \$148.9 million to fund our operations, of which \$131.8 million were gross proceeds from sales of our redeemable convertible preferred stock, \$0.3 million were gross proceeds from the issuance of common stock and \$16.8 million were gross proceeds from government contracts. In January 2020, we raised \$30.4 million of gross proceeds from the sale of our Series C redeemable convertible preferred stock.

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We have incurred significant net operating losses in every year since our inception and expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. Our net losses may fluctuate significantly from quarter to quarter and year to year and could be substantial. Our net losses were \$16.3 million and \$6.0 million for the years ended December 31, 2019 and 2018, respectively. As of December 31, 2019, we had an accumulated deficit of \$127.8 million. We anticipate that our expenses will increase significantly as we:

- conduct additional clinical trials of our most advanced product candidate, LYR-210, including the Phase 2 LANTERN trial which commenced in May 2019 and one or more planned pivotal Phase 3 clinical trials of LYR-210;
- advance the development of LYR-220;
- continue to discover and develop additional product candidates;
- establish manufacturing and supply chain capacity sufficient to provide commercial quantities of any product candidates for which we may obtain marketing approval;
- seek regulatory and marketing approvals for product candidates that successfully complete clinical trials, if any;
- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain regulatory approval in geographies in which we plan to commercialize our products ourselves;
- maintain, expand and protect our intellectual property portfolio;
- hire additional staff, including clinical, scientific, technical, regulatory, operational, financial commercial and support personnel, to execute our business plan; and
- add clinical, scientific, operational, financial and management information systems and personnel to support our product development and potential future commercialization efforts, and to enable us to operate as a public company.

We do not expect to generate revenue from product sales unless and until we successfully complete clinical development and obtain regulatory approval for a product candidate. Additionally, we currently use contract research organizations, or CROs, to carry out our clinical development activities. We do not yet have a sales organization. If we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. Furthermore, commencing upon the closing of this offering, we will incur additional costs associated with operating as a public company. As a result, we will need substantial additional funding to support our continuing operations and pursue our growth strategy. Until such time as we can generate significant revenue from product sales, if ever, we expect to fund our operations through public or private equity or debt financings or other sources, including strategic collaborations. We may, however, be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all. Our failure to raise capital or enter into such other arrangements as and when needed would have a negative impact on our financial condition and our ability to develop our current product candidates, or any additional product candidates, if developed.

Because of the numerous risks and uncertainties associated with therapeutics product development, we are unable to accurately predict the timing or amount of increased expenses or when or if we will be able to achieve or maintain profitability. Even if we are able to generate revenue from product sales, we may not become profitable. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce or terminate our operations.

As of December 31, 2019, we had cash and cash equivalents totaling \$9.8 million. We believe that the net proceeds from this offering, together with our existing cash and cash equivalents and the funds we raised in January 2020, will enable us to fund our operating expenses and capital expenditure requirements into . We have based these estimates on assumptions that may prove to be imprecise or incorrect, and we may use our available capital resources sooner than we currently expect. See “—Liquidity and Capital Resources.” Because of the numerous risks and uncertainties associated with the development of our product candidates and any future product candidates, our platform and technology and because the extent to which we may enter into collaborations with third parties for development of any of our product candidates is unknown, we are unable to estimate the amounts of increased capital outlays and operating expenses associated with completing the research and development of our product candidates.

If we raise additional funds through collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce, or terminate our product development programs or any future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Financial Operations Overview

Revenue

To date, we have not generated any revenue from product sales and do not expect to generate any revenue from the sale of products in the foreseeable future. If our development efforts for our product candidates are successful and result in regulatory approval and successful commercialization efforts, we may generate revenue in the future from product sales. We cannot predict if, when, or to what extent we will generate revenue from the commercialization and sale of our product candidates. We may never succeed in obtaining regulatory approval for any of our product candidates.

To date, all of our revenue has been derived from government awards. In July 2016, we were awarded a grant from the National Institutes of Health, or NIH, titled “Novel Bioabsorbable, Flexible Polymeric Stent for Pulmonary Artery Stenosis,” which we refer to as PED-PA. The amount awarded of approximately \$1.0 million related to the award period of August 2016 through July 2019.

In September 2016, we received a fixed-fee award of approximately \$0.4 million from NIH for the development leading to the commercialization of bioresorbable stents, or BRS, for the treatment of coarctation of the aorta in neonates, which we refer to as PED-CA. In November 2017, we were awarded an amendment to this contract which increased the amount by approximately \$3.0 million. We recognized revenue under the government awards as we incurred qualifying expenses. During the years ended December 31, 2019 and 2018, we recognized \$0 and approximately \$1.2 million, respectively, of revenue under the NIH awards. In 2019, we focused our efforts on the development of LYR-210 and our other product development efforts and are no longer conducting research under the NIH awards and as a result do not expect any future revenue from government awards.

Operating Expenses

Our operating expenses since inception have consisted solely of research and development costs and general and administrative costs.

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for our research activities, including the development of and pursuit of regulatory approval of our most advanced product candidate, LYR-210, for the treatment of CRS, which include:

- employee-related expenses, including salaries, benefits and stock-based compensation expense for personnel engaged in research and development functions;
- expenses incurred in connection with the preclinical and clinical development of our product candidates, including under agreements with CROs, investigative sites and consultants;
- costs of manufacturing our product candidates for use in our preclinical studies and clinical trials as well as manufacturers that provide components of our product candidates for use in our preclinical and potential future clinical trials;
- consulting and professional fees related to research and development activities;
- costs related to compliance with clinical regulatory requirements; and
- facility costs and other allocated expenses, which include expenses for rent and maintenance of our facility, utilities, depreciation and other supplies.

We expense research and development costs as incurred. We recognize costs for certain development activities, such as clinical trials, based on an evaluation of the progress to completion of specific tasks using data such as clinical site activations, patient enrollment, or information provided to us by our vendors and our clinical investigative sites. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and may be reflected in our consolidated financial statements as prepaid or accrued research and development expenses.

Our external research and development expenses consist primarily of costs such as fees paid to consultants, contractors and CROs in connection with our preclinical and clinical development activities. We typically use our employee and infrastructure resources across our development programs and we do not allocate personnel costs and other internal costs to specific product candidates or development programs with the exception of the costs to manufacture our product candidates.

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect that our research and development expenses will continue to increase for the foreseeable future as we initiate additional clinical trials, including one or more clinical trials for LYR-210 and LYR-220, scale our manufacturing processes, continue to discover and develop additional product candidates and hire additional clinical and scientific personnel.

The successful development of LYR-210, LYR-220 and other potential future product candidates is highly uncertain. Accordingly, at this time, we cannot reasonably estimate or know the nature, timing and costs of the efforts that will be necessary to complete the development of these product candidates. We are also unable to predict when, if ever, we will generate revenue and material net cash inflows from the commercialization and sale of any of our product candidates for which we may obtain marketing approval. We may never succeed in achieving regulatory approval for any of our product candidates. The duration, costs and timing of preclinical studies, clinical trials and development of our product candidates will depend on a variety of factors, including:

- successful completion of clinical trials with safety, tolerability and efficacy profiles for LYR-210, LYR-220 and any potential future product candidates that are satisfactory to the FDA or any comparable foreign regulatory authority;

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- approval of an IND for LYR-220 and any potential future product candidate to commence planned or future clinical trials in the United States or foreign countries;
- significant and changing government regulation and regulatory guidance;
- timing and receipt of marketing approvals from applicable regulatory authorities;
- establishing arrangements with contract manufacturing organizations, or CMOs, for third-party clinical and commercial manufacturing to obtain sufficient supply of our product candidates;
- obtaining and maintaining patent and other intellectual property protection and regulatory exclusivity for our product candidates;
- commercializing the product candidates, if and when approved, whether alone or in collaboration with others;
- acceptance of the product, if and when approved, by patients, the medical community and third-party payors;
- competition with other therapies; and
- maintenance of a continued acceptable safety profile of the products following approval.

A change in the outcome of any of these variables with respect to the development, manufacture or commercialization enabling activities of any of our product candidates would significantly change the costs, timing and viability associated with the development of that product candidate. For example, if the FDA or another regulatory authority were to require us to conduct clinical trials beyond those that we anticipate will be required for the completion of clinical development of a product candidate, or if we experience significant delays in our clinical trials due to patient enrollment or other reasons, we would be required to expend significant additional financial resources and time on the completion of clinical development.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, for personnel in executive, finance and administrative functions. General and administrative expenses also include direct and allocated facility-related costs as well as professional fees for legal, patent, consulting, investor and public relations, accounting, auditing, tax services and insurance costs.

We expect that our general and administrative expenses will increase in the future to support continued research and development activities and potential commercialization of our product candidates. These increases will likely include increased costs related to the hiring of additional personnel and fees to outside consultants, attorneys and accountants, among other expenses. Additionally, we expect to incur increased expenses associated with being a public company, including costs of additional personnel, accounting, audit, legal, regulatory and tax-related services associated with maintaining compliance with exchange listing and Securities and Exchange Commission, or SEC, requirements, director and officer insurance costs, and investor and public relations costs.

Interest Income (Expense), Net

Interest income (expense), net, primarily consists of non-cash interest expense incurred on our convertible notes, non-cash accretion of the fair value of the conversion feature related to our convertible notes, and interest income earned on our cash and cash equivalents.

Change in Fair Value of Tranche Liability

Change in fair value of tranche liability consists of non-cash changes in the fair value of the tranche rights associated with our Series B redeemable convertible preferred stock which provided investors with the right to participate in a subsequent offering of Series B redeemable convertible preferred stock in the event specified development milestone was achieved. We classified the tranche rights as a derivative liability on our consolidated balance sheet that was initially recorded at fair value and that we remeasured to fair value at each reporting date, and we recognized changes in the fair value of the derivative associated with the tranche rights as a component of other income in our consolidated statement of operations and comprehensive loss. The tranche liability was valued using the Black-Scholes option pricing model, which considered as inputs (a) the expected stock price volatility of the underlying common stock, (b) the expected term of the tranche right, (c) the risk-free interest rate and (d) expected dividends. The tranche rights were settled in 2018.

Critical Accounting Policies and Use of Estimates

Our management's discussion and analysis of financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States, or GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities and expenses and the disclosure of contingent assets and liabilities in our consolidated financial statements during the reporting periods. These items are monitored and analyzed by us for changes in facts and circumstances, and material changes in these estimates could occur in the future. We base our estimates on historical experience, known trends and events, and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Changes in estimates are reflected in reported results for the period in which they become known. Actual results may differ materially from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in the notes to our consolidated financial statements appearing elsewhere in this prospectus, we believe the following accounting policies used in the preparation of our consolidated financial statements require the most significant judgments and estimates.

Accrued Research and Development Expenses

As part of the process of preparing our consolidated financial statements, we are required to estimate our accrued research and development expenses. This process involves reviewing purchase orders and open contracts, 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 services when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us monthly in arrears for services performed, on a pre-determined schedule or when contractual milestones are met; however, some require advance payments. We make estimates of our accrued expenses as of each balance sheet date in our consolidated financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. The significant estimates in our accrued research and development expenses include the following costs incurred for services in connection with research and development activities for which we have not yet been invoiced:

- vendors in connection with the preclinical development activities;
- vendors in connection with the testing of preclinical and clinical trial materials;
- CROs in connection with preclinical and clinical studies; and
- investigative sites in connection with clinical trials.

We contract with CROs to conduct clinical and other research and development services on our behalf. We base our expenses related to CROs on our estimates of the services received and efforts expended pursuant to quotes and contracts with them. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our CROs will exceed the level of services provided and result in a prepayment of the research and development expense. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or amount of prepaid expense accordingly. Non-refundable advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made.

Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in reporting amounts that are too high or too low in any particular period. To date, there have not been any material adjustments to our prior estimates of accrued research and development expenses.

Stock-Based Compensation

We apply the fair value recognition provisions of ASC 718, *Compensation—Stock Compensation*, or ASC 718, for stock-based awards granted to employees and directors for their services on the board of directors. Determining the amount of stock-based compensation to be recorded requires us to develop estimates of the fair value of stock options as of their grant date. We estimate the fair value of each stock option grant using the Black-Scholes option-pricing model. Calculating the fair value of stock-based awards requires that we make subjective assumptions.

Pursuant to ASC 718, we measure stock-based awards granted to employees and members of the board of directors at fair value on the date of grant and recognize the corresponding stock-based compensation expense of those awards on a straight-line basis over the requisite service period, which is generally the vesting period of the respective award. We have historically granted stock options with exercise prices equivalent to the fair value of our common stock as of the date of grant.

We account for stock-based awards to non-employees in accordance with ASU No. 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*, or ASU No. 2018-07, which permits the valuation of stock-based awards granted to non-employees to be measured at fair value at the grant date rather than on an accelerated attribution basis over the vesting period and recognizes non-employee stock-based compensation expense over the related service period of the non-employee award. Prior to January 1, 2019, we accounted for stock-based payments to non-employees in accordance with ASC 505-50, *Equity-Based Payments to Non-Employees*, or ASC 505-50. Pursuant to ASC 505-50, we measured stock-based awards granted to non-employees at fair value as the awards vest and recognize the resulting value as expense during the period the related services are rendered, which is typically the vesting period. At the end of each financial reporting period prior to completion of the service, we re-measured the unvested portion of these awards using the then-current fair value of our common stock and updated assumption inputs in the Black-Scholes option-pricing model.

The Black-Scholes option-pricing model uses the following inputs: the fair value of our common stock, the expected volatility of our common stock, the expected term of our stock options, the risk-free interest rate for a period that approximates the expected term of our stock options and our expected dividend yield. Due to the lack of a public market for our common stock and a lack of company-specific historical and implied volatility data, we have based our computation of expected volatility on the historical volatility of a representative group of public companies with similar characteristics to us, including stage of product development, life science industry

focus, length of trading history and similar vesting provisions. The historical volatility data is calculated based on a period of time commensurate with the expected term assumption. We will continue to apply this process until a sufficient amount of historical information regarding the volatility of our own stock price becomes available or until circumstances change, such that the identified entities are no longer representative companies. In the latter case, more suitable, similar entities whose share prices are publicly available would be utilized in the calculation. We use the simplified method as prescribed by the SEC Staff Accounting Bulletin No. 107, *Share-Based Payment*, to calculate the expected term for options granted to employees as we do not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term. Under this approach, the weighted-average expected option term is presumed to be the average of the contractual term (ten years) and the vesting term (generally four years) of our stock options. We utilize this method due to lack of historical exercise data and the “plain-vanilla” nature of our stock-based awards. The expected term is applied to the stock option grant group as a whole, as we do not expect substantially different exercise or post-vesting termination behavior among our employee population. For options granted to non-employees, we utilize the contractual term of the arrangement as the basis for the expected term assumption. The risk-free interest rate is based on a treasury instrument whose term is consistent with the expected term of the stock options. The expected dividend yield is assumed to be zero as we have never paid cash dividends and have no current plans to pay any cash dividends on our common stock.

The fair value of stock options granted to employees, directors and non-employees was estimated on the date of grant using the Black-Scholes option-pricing model, with the following range of assumptions for the years ended December 31, 2019 and 2018:

	Years Ended December 31,	
	2019	2018
Risk-free interest rate	2.2%	3.1%
Expected dividend yield	—%	—%
Expected term (in years)	6.1	6.1
Expected volatility	76.8%	80.7%

These assumptions represented our best estimates, but the estimates involve inherent uncertainties and the application of our judgment. As a result, if factors change and we use significantly different assumptions or estimates, our stock-based compensation expense could be materially different.

The following table presents the grant dates, number of underlying shares of common stock and the per share exercise prices of stock options granted between January 1, 2018 and the date of this prospectus, along with the fair value per share utilized to calculate stock-based compensation expense:

Grant Date	Type of Award	Number of Common Shares	Exercise Price of Award per Share(1)	Fair Value of Common Stock per Share on Grant Date	Per Share Estimated Fair Value of Award(2)(3)
November 5, 2018	Option	1,980,500	\$ 0.08	\$ 0.08	\$ 0.06
March 6, 2019	Option	6,315,361	\$ 0.08	\$ 0.08	\$ 0.05
June 20, 2019	Option	1,170,000	\$ 0.13	\$ 0.13	\$ 0.09
September 24, 2019	Option	3,225,761	\$ 0.13	\$ 0.25(4)	\$ 0.19
February 6, 2020	Option	3,767,171	\$ 0.25	\$ 0.25	\$ 0.17

- (1) The Exercise Price of Award per Share represents the fair value of our common stock on the date of grant, as determined by our board of directors, after taking into account our most recently available contemporaneous valuations of our common stock as well as additional factors that may have changed since the date of such contemporaneous valuations through the date of grant.
- (2) The Per Share Estimated Fair Value of Award reflects the fair value of options as estimated at the date of grant using the Black-Scholes option-pricing model.

- (3) For the purposes of recording stock-based compensation for stock options granted to non-employees, upon adoption of ASU No. 2018-07 on January 1, 2019, we measure the fair value of the award at the grant date rather than on an accelerated attribution basis over the vesting period and recognize non-employee stock-based compensation expense over the related service period of the non-employee award. Prior to adoption of ASU No. 2018-07, we measured the fair value of the award on the service completion date (vesting date). At the end of each reporting period prior to completion of the services, we re-measured the value of any unvested portion of the award based on the then-current fair value of the award and adjusted expense accordingly.
- (4) We undertook a retrospective valuation of the fair value of our common stock as of September 19, 2019 and this value represents our estimated fair value per common share in accordance with such retrospective valuation, as no contemporaneous valuation was performed at the time of such grants.

Determination of Fair Value of Common Stock

As a private company with no active public market for our common stock, our board of directors has historically determined the fair value of our common stock on each date of grant, with input from management. Our board of directors periodically determined the estimated per share fair value of our common stock at various dates using contemporaneous valuations performed by third parties. Once a public trading market for our common stock has been established in connection with the completion of this offering, it will no longer be necessary for us to estimate the fair value of our common stock in connection with our accounting for stock options.

We performed contemporaneous valuations, with the assistance of a third-party specialist, as of September 30, 2018, May 31, 2019 and January 23, 2020, which resulted in valuations of our common stock of \$0.08, \$0.13 and \$0.25 per share, respectively. As no contemporaneous valuation was performed at the time of such grants, we performed a retrospective valuation as of September 19, 2019, which resulted in a valuation of our common stock of \$0.25 per share. In conducting the valuations, we considered all objective and subjective factors that we believed to be relevant for each valuation conducted, including our best estimate of our business condition, prospects and operating performance at each valuation date. Within the valuations performed, a range of factors, assumptions and methodologies were used. The significant factors included:

- the lack of an active public market for our common stock and redeemable convertible preferred stock;
- the prices at which we sold shares of our redeemable convertible preferred stock in arm's length transactions and the superior rights, preferences and privileges of the convertible preferred stock relative to our common stock, including the liquidation preferences of our preferred stock;
- our results of operations and financial condition, including cash on hand;
- the material risks related to our business;
- our stage of development and business strategy;
- the composition of, and changes to, our management team and board of directors;
- the market performance of publicly traded companies in the life sciences and biotechnology sectors, as well as recently completed initial public offerings, or IPOs, of companies in the life sciences and biotechnology sectors; and
- the likelihood of achieving a liquidity event such as an IPO given prevailing market conditions.

Historically, the dates of our valuations have not coincided with the dates of our stock-based compensation grants. In determining the exercise prices of the stock options granted, our board of directors considered, among other things, the most recent valuations of our common stock and our assessment of additional objective and subjective factors we believed were relevant as of the grant date. The additional factors considered when determining any changes in fair value of our common stock between the most recent valuation and the grant dates included the status of our stage of research and development, our operating and financial performance and current business conditions. The fair value of 3,225,761 options granted on September 24, 2019 was determined retrospectively as no contemporaneous valuation was performed at the time of such grants.

There are significant judgments and estimates inherent in the determination of the fair value of our common stock. These judgments and estimates are management's best estimates and include assumptions regarding our future operating performance, the time to completing an initial public offering or other liquidity event, the related company valuations associated with such events and the determinations of the appropriate valuation methods. If we had made different assumptions, our stock-based compensation expense, net loss and net loss per common share could have been different.

Common Stock Valuation Methodologies

Our common stock valuations were prepared in accordance with the guidelines in the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation*, which prescribes several valuation approaches for determining the value of an enterprise, such as the cost, market and income approaches, and various methodologies for allocating the value of an enterprise to its capital structure and specifically the common stock.

Our common stock valuation as of September 30, 2018 was prepared using an option pricing method, or OPM, framework and utilized a recent transactions market approach for inferring the equity value implied by our recently completed sales of Series B redeemable convertible preferred stock. 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. Under this method, the common stock has value only if the funds available for distribution to stockholders exceeded the value of the preferred stock liquidation preference at the time of the liquidity event, such as a strategic sale or a merger. A discount to reflect a lack of marketability of 40% was then applied to arrive at a \$0.08 per share valuation of our common stock.

Our common stock valuation as of May 31, 2019 was prepared using a hybrid method of two potential liquidity outcomes: a merger and acquisition scenario utilizing the Guideline Transaction approach and an IPO scenario utilizing the Direct Waterfall approach. The hybrid method is a probability-weighted expected return method, or PWERM, where the equity value in one or more scenarios is calculated using the OPM. 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. For the May 31, 2019 valuation, we (i) assigned a 90% probability of occurrence to the merger and acquisition scenario, with a 30% weighted average cost of capital within this scenario, then reflected a calculated discount for lack of marketability of 34.5%; and (ii) we assigned a 10% probability of occurrence to the IPO scenario, with a 30% weighted average cost of capital and a 0.75-year estimated term to an IPO event, then reflected a calculated discount for lack of marketability of 15%.

Our common stock valuation as of September 19, 2019 was prepared using a hybrid method of two potential liquidity outcomes: a merger and acquisition scenario utilizing the Guideline Transaction approach and an IPO scenario utilizing the Direct Waterfall approach. For the retrospective September 19, 2019 valuation, we

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(i) assigned a 60% probability of occurrence to the merger and acquisition scenario, with a 25% weighted average cost of capital within this scenario, then reflected a calculated discount for lack of marketability of 30%; and (ii) we assigned a 40% probability of occurrence to the IPO scenario, with a 25% weighted average cost of capital and a 0.53-year estimated term to an IPO event, then reflected a calculated discount for lack of marketability of 10%.

Our common stock valuation as of January 23, 2020 was prepared using a recent transactions market approach for inferring the equity value implied by our recent sales of Series C redeemable convertible preferred stock and a hybrid of the OPM and Direct Waterfall, including a future IPO scenario utilizing the Direct Waterfall approach, to allocate the total equity value. For the January 23, 2020 valuation, we (i) assigned a 45% probability of occurrence to the merger and acquisition scenario and applied a discount for lack of marketability of 30%; and (ii) we assigned a 55% probability of occurrence to the IPO scenario, with a 25% weighted average cost of capital and a 0.19-year estimated term to an IPO event, then reflected a calculated discount for lack of marketability of 5%.

Tranche Rights

Our sale of Series B redeemable convertible preferred stock provided our investors with the right to participate in a subsequent offering of Series B redeemable convertible preferred stock in the event specified development milestone was achieved. We classified the tranche rights as a derivative liability on our consolidated balance sheet because it met the definition of a freestanding financial instrument that could have required the Company to transfer assets upon exercise. We remeasured the derivative liability associated with the tranche right to fair value at each reporting date, and recognized changes in the fair value of the derivative liability as a component of other income (expense) in our consolidated statements of operations and comprehensive loss. The fair value of the derivative liability was determined using the Black-Scholes option pricing model, which considered as inputs (a) the expected stock price volatility of the underlying common stock, (b) the expected term of the tranche right, (c) the risk-free interest rate and (d) expected dividends.

Results of Operations

Comparison of the Years Ended December 31, 2019 and 2018

The following table summarizes our results of operations for the years ended December 31, 2019 and 2018 (in thousands):

	<u>Years Ended December 31,</u>		<u>Dollar Change</u>
	<u>2019</u>	<u>2018</u>	
Grant revenues	\$ —	\$ 1,244	\$ (1,244)
Operating expenses:			
Research and development	12,032	4,975	(7,057)
General and administrative	4,487	3,528	(959)
Total operating expenses	16,519	8,503	(8,016)
Loss from operations	(16,519)	(7,259)	(9,260)
Other income:			
Interest income (expense), net	213	36	177
Other income, net	—	10	(10)
Change in fair value of tranche liability	—	1,184	(1,184)
Total other income, net	213	1,230	(1,017)
Net loss	<u>\$ (16,306)</u>	<u>\$ (6,029)</u>	<u>\$ (10,277)</u>

Revenue

Grant revenue decreased from \$1.2 million for the year ended December 31, 2018 to \$0 for the year ended December 31, 2019. The decrease was a result of the conclusion of our activities related to the NIH awards.

Research and Development Expenses

Research and development expense increased by \$7.0 million to \$12.0 million for the year ended December 31, 2019 from \$5.0 million for the year ended December 31, 2018.

The increase in research and development expense was primarily attributable to an increase in clinical development external costs of \$3.5 million for the year ended December 31, 2019, primarily as a result of Phase 2 LANTERN clinical trial costs associated with LYR-210; an increase in chemistry, manufacturing and controls costs of \$0.7 million for the year ended December 31, 2019, primarily as a result of increased spending on LYR-210 as it began the Phase 2 LANTERN clinical trial; an increase in employee compensation and benefits of \$1.1 million for the year ended December 31, 2019, primarily as result of an increase in headcount and a decrease in charges to Arsenal Medical, Inc., or Arsenal, a company which shared certain common owners with us, for employee compensation and benefit costs related to our employees working on Arsenal-sponsored projects in accordance with the terms of the Transition Services Agreement between the two companies. Additionally, research and development expense increased by \$1.4 million for the year ended December 31, 2019, as a result of a decrease in non-employee related charges to Arsenal and a resulting increase in facilities and allocated expenses.

General and Administrative Expenses

General and administrative expense increased by \$1.0 million from \$3.5 million for the year ended December 31, 2018 to \$4.5 million for the year ended December 31, 2019.

The increase in general and administrative expenses was primarily attributable to an increase in employee compensation and benefits of \$0.3 million for the year ended December 31, 2019, primarily due to an increase in headcount and related expenses; an increase in consulting and professional services of \$0.5 million for the year ended December 31, 2019, primarily as a result of increased consulting and professional fees resulting from the growth in our general business operations; and the write-off the \$0.2 million receivable from the NIH as a result of the conclusion of our activities related to the NIH awards.

Interest Income (Expense), net

Interest income (expense), net consists of interest income earned on our cash and cash equivalents and non-cash interest expense incurred on our convertible notes payable. Interest income increased \$0.2 million from \$36,000 for the year ended December 31, 2018 to \$0.2 million for the year ended December 31, 2019. The increase was attributable to the interest earned on higher average cash and cash equivalents balances during the year ended December 31, 2019 after the closing of the second tranche of our Series B redeemable convertible preferred stock financing in October 2018.

Change in Fair Value of Tranche Liability

Change in fair value of tranche liability consists of the change in fair value of the tranche rights related to the sale of our Series B redeemable convertible preferred stock. It decreased from \$1.2 million for the year ended December 31, 2018 to none for the year ended December 31, 2019. The decrease was attributable to the change in fair value of the tranche rights which were settled in October 2018.

Liquidity and Capital Resources

Sources of Liquidity

We have funded our operations from inception through December 31, 2019 primarily through gross proceeds of \$131.8 million from sales of our redeemable convertible preferred stock and \$16.8 million from government contracts. The following table provides information regarding our total cash and cash equivalents at December 31, 2019 and 2018 (in thousands):

	As of	
	December 31,	
	2019	2018
Cash and cash equivalents	\$ 9,808	\$ 23,888

Cash Flows

The following table provides information regarding our cash flows for the years ended December 31, 2019 and 2018 (in thousands):

	Years Ended December 31,	
	2019	2018
Net cash used in operating activities	\$ (13,754)	\$ (6,640)
Net cash used in investing activities	(211)	(37)
Net cash (used in) provided by financing activities	(115)	29,213
Net (decrease) increase in cash and cash equivalents	<u>\$ (14,080)</u>	<u>\$ 22,536</u>

Net Cash Used in Operating Activities

The cash used in operating activities resulted primarily from our net losses adjusted for non-cash charges and changes in components of working capital.

Net cash used in operating activities was \$13.8 million for the year ended December 31, 2019 compared to \$6.6 million for the year ended December 31, 2018. The increase in cash used in operating activities of \$7.2 million was attributable to:

- \$10.3 million increase in net loss;
- \$1.1 million increase in non-cash charges for the year ended December 31, 2019 primarily because there was no non-cash income in the year ended December 31, 2019, which differed from the prior year which had \$1.2 million of non-cash income from the change in fair value of the tranche liability; and
- \$2.0 million increase in changes in the components of working capital.

Net Cash Used in Investing Activities

Net cash used in investing activities was \$0.2 million for the year ended December 31, 2019 compared to \$37,000 for the year ended December 31, 2018. The increase in cash used for investing activities of \$0.2 million was attributable to an increase in purchases of property and equipment.

Net Cash Provided by Financing Activities

Net cash provided by financing activities was \$0.1 million for the year ended December 31, 2019 compared to \$29.2 million for the year ended December 31, 2018. The decrease in cash provided by financing activities of \$29.1 million was attributable to:

- net proceeds of \$28.7 million from the sale of our Series B redeemable convertible preferred stock and the \$0.5 million of proceeds from the sale of our convertible notes payable during the year ended December 31, 2018;
- \$0.1 million increase in proceeds from the exercise of common stock options in the year ended December 31, 2019 compared to the year ended December 31, 2018; and
- \$0.2 million in payments for deferred financing costs in the year ended December 31, 2019.

Funding Requirements

We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the research and development for, initiate later stage clinical trials for, and seek marketing approval for, our product candidates. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. Furthermore, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company. 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 would be forced to delay, reduce or eliminate our research and development programs or future commercialization efforts.

We expect that the net proceeds from this offering, together with our existing cash and cash equivalents and the funds we raised in January 2020 will enable us to fund our operating expenses and capital expenditure requirements into . We have based this estimate on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Our future capital requirements will depend on many factors, including:

- the costs of conducting future clinical trials of LYR-210;
- the costs of manufacturing additional material for one or more pivotal Phase 3 clinical trials of LYR-210 and potential future clinical studies we might conduct for our other product candidates;
- the costs of scaling up our manufacturing process and supply chain capacity to provide sufficient quantities of LYR-210 for the potential commercialization of LYR-210 if our clinical development program is successful and we obtain marketing approval;
- the advancement of LYR-220;
- the scope, progress, results and costs of discovery, preclinical development, laboratory testing and clinical trials for other potential product candidates we may develop, if any;
- the costs, timing and outcome of regulatory review of our product candidates;
- our ability to establish and maintain collaborations on favorable terms, if at all;
- the achievement of milestones or occurrence of other developments that trigger payments under any collaboration agreements we might have at such time;

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- the costs and timing of future commercialization activities, including product sales, marketing, manufacturing and distribution, for any of our product candidates for which we receive marketing approval;
- the amount of revenue, if any, received from commercial sales of our product candidates, should any of our product candidates receive marketing approval;
- the costs of preparing, filing and prosecuting patent applications, obtaining, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- our headcount growth and associated costs as we expand our business operations and our research and development activities; and
- the costs of operating as a public company.

Identifying potential product candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of products that we do not expect to be commercially available for many years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. We do not have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interests may be diluted, and the terms of these securities may include liquidation or other preferences that could adversely affect your rights as a common stockholder. Any debt financing, if available, may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact our ability to conduct our business.

If we raise funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Contractual Obligations

The following table summarizes our significant contractual obligations as of payment due date by period at December 31, 2019 (in thousands):

	<u>Total</u>	<u>Less than 1 year</u>	<u>1 to 3 years</u>	<u>3 to 5 years</u>	<u>More than 5 years</u>
Operating lease obligation ⁽¹⁾	\$ 3,653	\$ 1,059	\$ 2,594	\$ —	\$ —
Total	\$ 3,653	\$ 1,059	\$ 2,594	\$ —	\$ —

- (1) Represents future minimum lease payments under our non-cancelable operating lease which expires April 2023. The minimum lease payments above do not include any related common area maintenance charges, operating expenses or real estate taxes.

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We enter into agreements in the normal course of business with CROs for clinical trials, third party manufacturers for clinical supply manufacturing, professional consultants for expert advice and other vendors for other services for operating purposes. We have not included these payments in the table of contractual obligations above since the contracts do not contain any minimum purchase commitments and are cancelable at any time by us, generally upon 30 days prior written notice and therefore we believe that our non-cancelable obligations under these agreements are not material.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under applicable SEC rules.

Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk related to changes in interest rates. As of December 31, 2019 and 2018, our cash equivalents consisted of interest-bearing checking accounts. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates. Due to the short-term nature and the low risk profile of our interest-bearing accounts, an immediate 10% change in interest rates would not have a material effect on the fair market value of our cash and cash equivalents or on our financial position or results of operations.

We are not currently exposed to significant market risk related to changes in foreign currency exchange rates; however, we have contracted with and may continue to contract with foreign vendors located in Europe, Australia and New Zealand. Our operations may be subject to fluctuations in foreign currency exchange rates in the future.

Inflation generally affects us by increasing our clinical trial costs. We do not believe that inflation had a material effect on our business, financial condition or results of operations during the years ended December 31, 2019 and 2018.

Emerging Growth Company Status

The Jumpstart Our Business Startups Act of 2012, or the JOBS Act, permits an “emerging growth company” such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies.

We are in the process of evaluating the benefits of relying on other exemptions and reduced reporting requirements under the JOBS Act. Subject to certain conditions, as an emerging growth company, or EGC, we intend to rely on certain of these exemptions, including exemptions from the requirement to provide an auditor’s attestation report on our system of internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act and from any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements, known as the auditor discussion and analysis.

BUSINESS

Overview

We are a clinical-stage therapeutics company focused on the development and commercialization of novel integrated drug and delivery solutions for the localized treatment of patients with ear, nose and throat, or ENT, diseases. Our proprietary technology platform, XTreo, is designed to precisely and consistently deliver medicines directly to the affected tissue for sustained periods with a single administration. Our initial product candidates, LYR-210 and LYR-220, are bioresorbable polymeric matrices designed to be administered in a brief, non-invasive, in-office procedure and intended to deliver up to six months of continuous drug therapy to the sinonasal passages for the treatment of chronic rhinosinusitis, or CRS. The therapeutic embedded within LYR-210 and LYR-220 is mometasone furoate, or MF, which is the active ingredient in various U.S. Food and Drug Administration, or FDA, approved drugs and has a well-established efficacy and safety profile. CRS is an inflammatory disease of the paranasal sinuses which leads to debilitating symptoms and significant morbidities and affects approximately 14 million people in the United States. We are advancing LYR-210 as a potential preferred alternative to surgery in an ongoing Phase 2 clinical trial, which we refer to as our LANTERN clinical trial, for CRS patients who have failed medical management, and we expect to report topline data in . In our Phase 1 clinical trial, LYR-210 met its primary safety endpoint, and we observed that patients generally experienced significant and rapid, clinically meaningful and durable improvement on a patient symptom severity scale through week 25, which was the end of the trial. We are also developing LYR-220 for use in CRS patients who have an enlarged nasal cavity due to sinus surgery but continue to require treatment to manage CRS symptoms, and we intend to initiate a proof-of-concept clinical trial for LYR-220 in . Beyond CRS, we believe our XTreo platform has potential applications in other disease areas, which we are actively exploring to further broaden its therapeutic potential.

CRS has been described in the literature as an “unrecognized epidemic” due to its high prevalence, its substantial impact on patient quality of life and the significant limitations of currently available treatment options. We estimate that sinusitis, which includes both CRS and acute rhinosinusitis, impacts approximately 12% of the adult population in the United States, or approximately 30 million people, making it the fifth most common condition in people under the age of 65 and more prevalent than diabetes or heart disease. Of this population, we estimate that approximately 14 million people are affected with CRS. Moreover, we estimate that approximately 8 million people are treated for CRS by physicians annually, of which approximately 4 million fail medical management each year. In the United States, over \$60 billion is spent annually in direct treatment costs for sinusitis, including approximately \$5 billion on sinus surgeries.

We believe LYR-210 and LYR-220, if successfully developed and approved, will be able to treat the entire spectrum of CRS patients, including pre- and post-surgical patients and those with and without nasal polyps, with up to six months of treatment in a single administration. Our most advanced product candidate, LYR-210, is being evaluated in CRS patients who have failed medical management but have not undergone endoscopic sinus surgery, who we refer to as surgically-naïve CRS patients, in our ongoing randomized, sham procedure-controlled, patient-blinded, Phase 2 LANTERN clinical trial. We initiated this trial in May 2019 and expect to report topline data in . In an open-label, multi-center Phase 1 clinical trial, we placed 40 LYR-210 matrices bilaterally in 20 patients at sites in New Zealand and Australia. LYR-210 met its primary safety endpoint in the Phase 1 trial, and we observed significant and rapid, clinically meaningful and durable improvement through week 25 in SinoNasal Outcome Test scores, or SNOT-22 scores, an established patient symptom severity scale. At week 24, improvement versus baseline was observed in 90% of patients, with similar activity observed across both polyp and non-polyp patients. Additionally, we intend to initiate a proof-of-concept clinical trial for LYR-220 in , and to submit a supplemental new drug application, or sNDA, to the FDA for a potentially faster path to approval of LYR-220 if a new drug application, or NDA, for LYR-210 is approved by the FDA.

Our XTreo Platform

XTreo, our innovative and proprietary drug delivery platform, is designed to locally and continuously deliver small molecule drugs to the affected tissue over a sustained period of time from a single administration. The platform is comprised of three interrelated technology components:

- a biocompatible mesh scaffold, which is designed to maximize surface area for drug release while maintaining underlying tissue function;
- an engineered elastomeric matrix, which means a polymeric matrix composed of polymers having elastic characteristics, which has advanced physical properties resulting in implants with “shape memory” that dynamically adapt to nasal anatomy; and
- a versatile polymer-drug complex, which can be customized for the treatment of various chronic diseases treatable with ENT delivery to achieve the desired drug dose and drug elution rate.

Chronic Rhinosinusitis: A Prevalent Disease with High Unmet Medical Needs

CRS is an inflammatory disease of the paranasal sinuses causing the soft, moist layer of mucus-producing tissue, or mucosa, that lines the sinuses to become swollen and inflamed, leading to significant patient morbidities. The inflammation may be caused by infections, allergies or environmental factors, as well as structural issues such as blockages of an ostium. Patients with CRS on average experience a lower quality of life index than people suffering from congestive heart failure, angina, chronic obstructive pulmonary disease or back pain.

CRS has two phenotypes: CRS with nasal polyps, which are teardrop-shaped benign masses arising from the mucosa lining, and CRS without nasal polyps. The non-polyp form of CRS represents approximately 70%-to-90% of CRS patients. We estimate that approximately 8 million people are treated for CRS by physicians annually, of which approximately 4 million fail medical management every year.

Current Treatments and Their Limitations

The goals of therapy for CRS are to reduce mucosal swelling resulting from underlying inflammation, promote sinus drainage, and eradicate infections that may be present. The treatment of CRS is progressive in nature and typically begins with medical management, primarily with topical intranasal steroids and oral steroids. If this treatment is unsuccessful, an ENT physician may perform a sinus surgery.

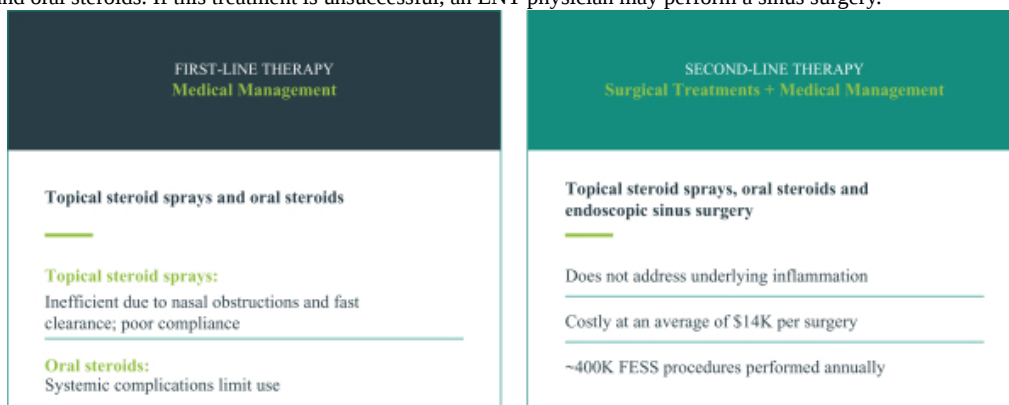


Figure 1. Current Primary Treatment Paradigm for CRS.

Currently, there are no FDA-approved drug therapies for CRS for non-polyp patients, although some drugs approved for nasal polyps are used off-label in this population.

Our Solution for CRS

LYR-210 is an anti-inflammatory implantable drug matrix based on our XTreo platform that is designed to consistently and locally elute MF to the inflamed mucosal tissue for up to six months in surgically-naïve CRS patients who fail medical management. MF, the active ingredient in various FDA-approved drugs, has a well-established efficacy and safety profile, which we believe will support the development process for LYR-210. LYR-210 is designed to enable sustained drug delivery at difficult-to-access nasal inflammation sites without the need for patient compliance, while avoiding the systemic side effects associated with oral steroids. LYR-210 is designed to be administered in a brief, non-invasive, in-office procedure by an ENT physician under endoscopic visualization via a single-use applicator.

LYR-210 is currently being studied in a Phase 2 randomized, sham procedure-controlled, patient-blinded clinical trial, which we refer to as LANTERN, evaluating the safety and efficacy in surgically-naïve CRS patients who have failed previous medical management. The trial was initiated in May 2019 and is currently ongoing at sites in Australia, Austria, Czech Republic, New Zealand and Poland. In January 2020, the FDA cleared our investigational new drug application, or IND, and we expect to open new sites in the United States. We expect to report topline data from the Phase 2 LANTERN clinical trial in

LYR-210 was previously studied in an open-label, Phase 1 clinical trial with 20 patients in New Zealand and Australia, and achieved its primary endpoint of safety at week 4. In the Phase 1 trial, we also observed that patients generally experienced significant and rapid, clinically meaningful and durable improvement in SNOT-22 scores. Significant reduction in SNOT-22 was observed at week 1, and this reduction persisted through week 25, which was the end of the trial. The changes from baseline, or CFBL, in SNOT-22 score were statistically significant ($P < 0.01$) at all measured intervals. The average change from baseline in SNOT-22 score at week 1 was -13.0 points ($P=0.008$ to pre-treatment), achieving the minimal clinically significant difference of -8.9 points. Further, symptom relief as measured by SNOT-22 score was observed through the entire duration of the trial, achieving an average change from baseline of -20.5 points at week 24, the end of the treatment period ($P=0.00005$ to pre-treatment), and -20.0 points ($p < 0.0001$) at week 25, one week after the removal of LYR-210.

We are developing our second pipeline product candidate, LYR-220, for use in CRS patients who continue to require medical management despite having had sinus surgery. LYR-220 is also designed to utilize MF, but will employ an oversized matrix designed for patients whose nasal cavity is enlarged due to sinus surgery. LYR-220 is designed as a potential preferred alternative to revision sinus surgery and post-surgical medical management. We expect to initiate a proof-of-concept clinical trial for LYR-220 in

We believe that the key potential benefits of our current investigational product portfolio, LYR-210 and LYR-220, include:

- **Clinical Activity:** We believe LYR-210 and LYR-220 have the potential to significantly improve symptoms by maintaining a steady, high dose of MF at the site of inflammation for up to six months with a single administration, without any dependence on patient compliance.
- **Patient Compliance:** Because drug delivery for LYR-210 and LYR-220 is designed to be sustained for up to six months with a single administration, the efficacy of LYR-210 and LYR-220 will not depend on patient compliance within the treatment period, unlike other CRS treatment options that require repeated daily administrations, such as topical intranasal steroids and oral steroids.
- **Patient Experience:** LYR-210 and LYR-220 are designed to be administered via a simple, in-office procedure every six months, which is intended to enhance convenience for patients, unlike

the repeated daily medical management and/or time-consuming and painful surgery required by certain other CRS treatment options. Moreover, we believe patients may also benefit from the biocompatible, flexible structure of LYR-210 and LYR-220 that is designed to maximize comfort over the therapy period.

- **Physician Experience:** LYR-210 and LYR-220 are designed to enable physicians to perform the placement of LYR-210 and LYR-220 in-office in conjunction with an endoscopy procedure, thereby making the placement aligned with the existing care continuum for CRS patients and eliminating the need for physicians to schedule separate surgical time. Moreover, the elastomeric matrix encapsulates the underlying mesh fibers to facilitate removal.
- **Localized Delivery:** LYR-210 and LYR-220 are designed to benefit from our XTreo platform, which is intended to provide localized delivery to avoid systemic side effects that are common with certain other CRS treatment options, such as oral steroids.
- **Patient Applicability:** LYR-210 and LYR-220 are designed to treat the entire spectrum of CRS patients who have failed medical management, including pre- and post-surgical patients and those with and without polyps.
- **Pharmacoeconomic Impact:** LYR-210 and LYR-220 are designed as an alternative to surgery (initial or revision), and as such have the potential to provide significant savings to the healthcare industry by reducing the number and frequency of expensive surgical treatment options.

We believe LYR-210 and LYR-220, if approved, would be the only products able to deliver up to six months of continuous topical treatment in a single administration to treat the entire spectrum of CRS patients who fail medical management, including pre- and post-surgery patients and those with and without nasal polyps.

Intellectual Property and Barriers to Entry

We own all the material intellectual property rights related to our platform and product candidate portfolio. As of December 31, 2019, our product candidate portfolio is protected by 21 issued and 27 pending patents worldwide with claims directed to composition of matter, drug delivery and method of use, which, exclusive of possible patent term adjustments or extensions or other forms of exclusivity, are projected to expire between 2030 and 2037.

We also rely upon know-how, continuing technological innovation, and technical barriers to entry, including manufacturing and drug delivery complexities, to develop and maintain our competitive intellectual property position.

Management Team and Investors

Our management team has extensive drug development, manufacturing and commercialization experience across a broad spectrum of disease areas, for both drug and drug-device combination products, with a successful track record in large pharmaceutical, medical device and biotech companies. Additionally, our management team has been involved in the development of successfully approved and commercialized products such as Taxus (drug-eluting stent), AvoneX, Arikayce and Panhematin.

Further, we are supported by a leading group of biotech investors including, among others, ArrowMark Partners, Intersouth Partners, North Bridge Venture Partners, Perceptive Advisors, Polaris Venture Partners, RA Capital and Soleus Capital.

Our Pipeline

The current status of our product candidates is summarized below.

PRODUCT CANDIDATE	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	NEXT ANTICIPATED MILESTONE
LYR-210 Long-acting Mometasone Furoate	Chronic Rhinosinusitis – Surgically-Naïve Patients				Phase 2 Topline Data Readout
LYR-220 Long-acting Mometasone Furoate	Chronic Rhinosinusitis – Operated Patients				Enter Clinic

Our Strategy

Our mission is to transform the ENT treatment paradigm by utilizing our proprietary drug delivery platform, XTreo, to develop safe and effective therapies for the treatment of debilitating diseases treatable with ENT delivery. We intend to achieve this through the following strategies:

- Complete the development and secure FDA approval of LYR-210 for the treatment of CRS.** We believe LYR-210, if approved, is well positioned in the CRS treatment paradigm to provide a preferred alternative to surgery. LYR-210, which is currently in an ongoing randomized, sham procedure-controlled, patient-blinded Phase 2 LANTERN clinical trial, utilizes MF, the active ingredient in various FDA-approved drugs. We expect to report topline data from the Phase 2 LANTERN trial of LYR-210 in . Our goal is to advance LYR-210 through Phase 2 and into one or more pivotal Phase 3 clinical trials, followed by potential marketing approval through a 505(b)(2) NDA submitted to the FDA.
- Advance our second product candidate, LYR-220, into the clinic to provide a comprehensive solution for CRS patients who have failed medical management and surgery.** We are developing a larger version of LYR-210 designed for use in the enlarged nasal cavity of CRS patients who have had sinus surgery. We believe LYR-220, if successfully developed and approved, is well positioned to provide a preferred alternative to revision surgery and post-surgical medical management. LYR-220 is currently in product feasibility studies. We plan to advance LYR-220 into a proof-of-concept clinical trial in and intend to seek approval through the sNDA pathway if an NDA for LYR-210 is approved by the FDA.
- Build a commercialization infrastructure in the U.S. market for LYR-210 and LYR-220.** If any of our product candidates are approved, we plan to launch an efficient, go-to-market commercialization model focused on targeted outreach to our key physician, payer and patient audiences. We plan to build an in-house sales force that will target ENT physicians whose sub-specialty is general otolaryngology or rhinology, which together represent roughly 60% of the 12,000 ENT physicians in the United States. Ensuring physician and patient market access to our products will be critical to our success, and we plan to execute a holistic reimbursement strategy that will integrate payer coverage and physician practice management initiatives. In addition, we also plan to selectively use cost-effective, patient-directed marketing strategies to further increase awareness among the CRS patient community of our products with the goal of increasing ENT physician visits. Finally, we plan to leverage our commercial infrastructure in the subsequent launch of LYR-220 and any future product candidates.

- **Maximize the value of our XTreo platform and expand our product pipeline.** Our XTreo platform provides a versatile drug development engine that enables us to focus on other indications where long-term delivery of existing treatments may provide improved local bioavailability and enhanced efficacy or safety. We plan to utilize our platform to identify additional product candidates, with an initial focus on conditions treatable with nasal delivery, potentially including allergic rhinitis, rare disorders where nasal disease contributes to the disease pathology and central nervous system disorders. In addition, we believe we can adapt our platform to target conditions treatable with delivery to other tissues beyond the nasal cavities, such as the ear.
- **Seek strategic collaborative relationships.** We intend to develop our product candidates on our own in the U.S. and retain all U.S. rights, but seek strategic collaborations ex-U.S. to facilitate the capital-efficient development of our product candidates. We may also enter into collaborative relationships within the U.S. for our future pipeline candidates. We believe these collaborations could potentially provide non-dilutive funding to advance our pipeline candidates while allowing us to benefit from the development expertise of our collaborators.

Our Technology Platform

XTreo, our innovative and proprietary drug delivery platform is designed to locally and continuously deliver small molecule drugs to the affected tissue over a sustained period of time from a single administration. Our technology platform, developed over the past decade, was first patented in 2009 by members of our team who have extensive experience in drug formulation and delivery, material science and biotechnology. This expertise has allowed us to significantly improve upon polymer drug delivery technology and add shape-memory properties to bioresorbable polymeric implants, one of our key innovations.

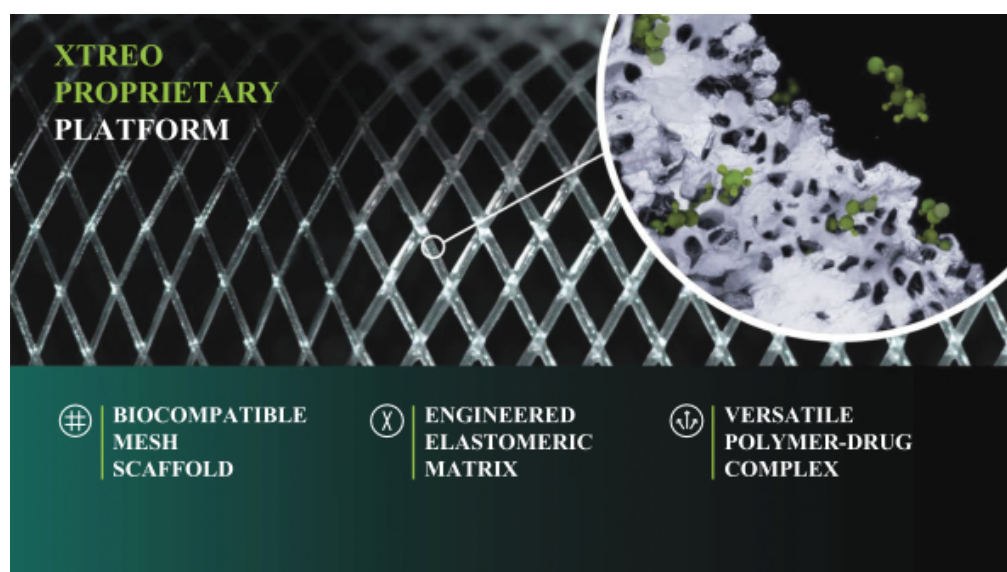


Figure 2. XTreo Proprietary Platform.

XTreo, our drug-eluting bioresorbable technology platform is comprised of three polymeric components, which are designed to work together to enable highly efficient, localized drug delivery (see Figure 2, above). This proprietary technology platform is designed to enable sustained delivery of medications for many

months of therapy, targeting tissues deep in the ENT passages and potentially other diseased tissues that are not accessible with conventional therapeutic approaches. The components of our platform include:

- **Biocompatible Mesh Scaffold**—variants of poly(L-lactide-co-glycolide), or PLGA, braided to form an implantable mesh with a high surface area. Our biocompatible mesh scaffold is intended to provide the foundation for efficient drug delivery. We have designed the mesh scaffold to optimize surface area for drug release while maintaining underlying tissue function through an open-cell design. The mesh scaffold is comprised of bioresorbable polymers and is pliable to maximize patient comfort.
- **Engineered Elastomeric Matrix**—overlying elastomer of poly(L-lactide-co-ε-caprolactone), or PLCL, coating that constrains the intersection points of the braid. Over the last decade we have developed a highly sophisticated and proprietary engineered elastomeric matrix which has advanced physical properties to dynamically conform to nasal anatomy. Its adaptive elastic tension, which gives it shape-memory to resist deformation, is key to ensuring persistent positioning in the target location. The matrix works in conjunction with the underlying mesh to exert outward retention force, keeping it in place as tissue remodels.
- **Versatile Polymer-Drug Complex**—active therapeutic embedded in a polymer designed to control its release. We have extensive drug-delivery know-how which has enabled us to design a versatile polymer-drug complex that can accommodate most small molecule drugs and achieve tunable elution profiles. We believe our versatile polymer-drug complex is potentially amenable to continuous, prolonged drug release across a wide range of drugs for different therapeutic applications. With proprietary bioresorbable polymer-drug formulations, we believe our platform can be used to customize controlled-release drugs for various chronic diseases treatable with ENT delivery and improve the efficacy of therapeutic properties of existing active pharmaceutical ingredients, or APIs, through more prolonged delivery.

The three integrated components are fundamental to the successful function and versatility of the XTreo technology. For application to a targeted tissue, the implant is compressed into a narrow applicator, which allows non-invasive placement deep within cavities of the ear, nose, and throat. The shape-memory properties ensure the implant self-expands as it is administered through the applicator to conformably fit within and adapt to the target anatomy. The implant is designed to be oversized for the target anatomy and therefore will push outwards to stay fixed at the target location. Over time, as inflammation recedes due to the local drug therapy, the shape-memory properties are intended to allow the implant to actively adapt to the anatomy and continue to stay in place to elute drug locally for a prolonged period.

In engineering the implant, we use polymers that are biocompatible and bioresorbable which, if left in place, would gradually dissolve over time. The polymers used in our formulations have established safety profiles as they have previously been used in FDA-approved therapeutics. The mesh scaffold and elastomeric matrix are composed of PLGA and PLCL elastomer, both of which are well-established biodegradable polymers commonly used in medical applications. The customizable polymer drug complex consists of the active therapeutic embedded in the inactive ingredients containing PLCL and poly(L-lactide), or PLA, to control the drug elution rate. The polymer composition and drug formulation are tailored to achieve the desired drug dose and dissolution rate. Our expertise allows us to balance polymer resorption with drug elution to achieve a sustained rate of drug release over months in addition to varying the dosing and release rates to provide chronic local treatment.

Chronic Rhinosinusitis and the Treatment Landscape

Sinuses are air-filled pockets within the bones of the face and skull. The four types of sinuses are frontal, ethmoid, sphenoid and maxillary (see Figure 3, below). One of each type of sinus lies on either side of the face.

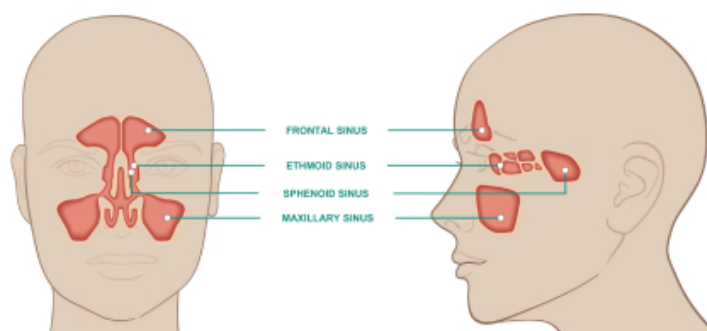


Figure 3. Illustration of Nasal Sinuses.

The sinuses are lined with a soft, moist layer of mucus-producing tissue, or mucosa. Mucus moistens the nasal lining and protects the body from inhaled impurities such as dust, pollutants and bacteria. Each of the maxillary, sphenoid and frontal sinuses has a corresponding ostium, or opening, through which mucus drains. The ethmoid sinuses are a series of cells with multiple, often interconnected openings and drainage pathways. The surface tissues of the sinuses are covered with millions of cilia, which are small, hair-like structures that act in coordination to sweep the mucus through the ostium of each sinus cavity to the back of the throat. The drainage of mucus is a normal process that keeps the sinuses healthy.

CRS is an inflammatory disease of the paranasal sinus causing the mucosa lining to become swollen and inflamed, leading to significant patient morbidities. The inflammation may be caused by infections, allergies or environmental factors, as well as structural issues such as blockages of an ostium. If one or more sinus drainage pathways becomes blocked, normal mucus drainage is prevented and damage to ciliary function may occur. There are two categories of sinusitis: acute and chronic. Acute sinusitis is transient in nature and lasts less than four weeks. Chronic sinusitis is more severe and lasts 12 weeks or longer. The term “chronic sinusitis” is generally used interchangeably with “CRS” in the medical community, and we refer to the condition as CRS in this prospectus. The four cardinal symptoms of CRS are nasal obstruction and congestion, facial pain and pressure, nasal discharge and olfactory loss (loss of sense of smell). Other symptoms include chronic headaches, bodily pain, fatigue, sleep deprivation, depression and recurrent infections. CRS may be diagnosed when two of the four cardinal symptoms persist for 12 weeks or longer and when inflammation is confirmed via endoscopy or CT scan. Patients with CRS experience a lower quality of life index than people suffering from congestive heart failure, angina, chronic obstructive pulmonary disease or back pain. In addition, CRS symptoms are estimated to cause patients to miss over 11 million workdays per year in the United States alone, resulting over \$1 billion in indirect economic costs.

We estimate that sinusitis impacts approximately 12% of the adult population in the United States, or approximately 30 million people, making it the fifth most common condition in people under the age of 65, and more prevalent than diabetes or heart disease. Beyond the United States, sinusitis has a similarly high prevalence in Europe, with approximately 27 million cases in the EU5 (France, Germany, Italy, Spain and the United Kingdom), and in Asia, with approximately 104 million cases in China alone. Of the approximately 30 million people impacted by sinusitis in the United States, we estimate approximately 14 million are affected with CRS. Of these, we estimate that approximately 8 million people are treated for CRS by physicians annually, of which approximately 4 million fail medical management every year.

CRS has two phenotypes: CRS with nasal polyps, which are teardrop-shaped benign masses arising from the mucosa, and CRS without nasal polyps, with the non-polyp form representing approximately 70%-to-90% of CRS patients. Patients with polyps develop non-cancerous polyps on the chronically inflamed surfaces, but both subgroups typically share the same symptoms. Currently, the majority of our competitors target CRS patients with polyps, and there are no approved treatments for CRS without polyps, creating a vast untapped market opportunity for a more effective treatment solution. Given no approved treatments for CRS without polyps exist, there is only off-label drug usage for this segment of the patient population.

Current treatments are directed towards managing the symptoms of CRS through a combination of medical management and surgical intervention techniques. The first line of therapy is medical management involving nasal saline irrigation, intranasal corticosteroidal sprays, oral steroids and antibiotics for patients with an active sinus infection. CRS is the most common reason for adult outpatient antibiotic use in the United States. It has been estimated that antibiotic use to treat infections relating to CRS may cost more than \$150 million per year in the aggregate. Patients whose symptoms persist despite medical management are generally recommended to undergo functional endoscopic sinus surgery (or FESS) or balloon sinus dilation (or BSD), or both. FESS is a highly invasive surgery performed in the operating room, under full anesthesia, to open the blocked sinus pathways by removing inflamed tissue and bone using surgical tools. BSD is a less severe form of endoscopic sinus surgery, often used in combination with FESS, in which small balloon catheters are inserted and inflated to drain the large nasal sinuses. Although FESS and BSD can improve symptoms and quality of life, limitations remain. Neither correct the underlying cause of the inflammation and patients who undergo either or both procedures often experience significant pain and require continued post-operative medical therapy to maintain improvements, with a high incidence of repeat surgeries.

Medical Management

The first-line of treatment for CRS is medical therapy, which typically includes nasal saline irrigation, corticosteroids, and antibiotics for patients with an active infection.

Steroids represent the current first-line standard of care for CRS patients, given they are generally pharmacologically effective at treating inflammation. Intranasal steroid sprays and aerosols, commonly indicated for rhinitis, or inflammation of the nasal passage, are routinely prescribed and used over-the-counter for the treatment of CRS symptoms. Physicians may also prescribe oral steroids on an episodic basis to patients who have not received sufficient symptomatic relief. They are generally prescribed for short-term use by patients with severe symptoms or exacerbations of CRS who are already on maintenance therapy, such as nasal irrigation or intranasal corticosteroid sprays. Finally, physicians may prescribe antibiotics for patients with an active infection.

Intranasal steroid sprays, oral steroids and antibiotics each have significant limitations:

- While intranasal steroid sprays avoid systemic exposure and thus lack such serious side effects, penetration of the spray beyond the nasal cavities into the paranasal sinuses—the site of inflammation—is limited, particularly in pre-operative patients, despite requiring multiple, inconvenient administrations per day. In a published study, a large fraction of the spray is deposited in the anterior nasal cavity without any significant penetration into the paranasal sinuses. Additionally, intranasal spray efficacy is also limited due to fast clearance rates, as it has been demonstrated that mucociliary action removes approximately 50% of the spray from the nasal cavity within 10 to 15 minutes of dosing. Poor patient compliance further limits the effectiveness of intranasal steroid sprays. While a recently launched intranasal exhalation delivery product has been developed to enhance the delivery of steroid to areas of inflammation within the sinus, the product is still subject to the limitations resulting from fast clearance and poor patient compliance.
- Oral steroid therapy is effective at reaching the sinus lining, but it does so by means of systemic exposure and therefore carries the risk of serious side effects associated with prolonged use,

including glaucoma, bone loss, weight gain, psychosis and difficulty in controlling blood glucose levels in patients with diabetes. Additionally, studies have shown that long-term benefits from their use are limited.

- Although antibiotics are generally prescribed for patients with an active infection, their role for treatment of CRS is unclear, and there is limited evidence that supports their use for the treatment of CRS. In addition, their prolonged use can lead to antibiotic resistance, and CRS is identified as a major target in national efforts to reduce unnecessary antibiotic intervention.

Medical management is used as a first-line of medical therapy for pre-operative patients and as maintenance therapy for post-operative patients. Therefore, patients in both stages of the condition are managed medically and hence are subject to the limitations described above. Based on published medical literature, we estimate that at least 50% of CRS patients who are seen by ENT physicians and receive medical management remain symptomatic.

Sinus Surgery

The primary alternative after medical management is FESS, an invasive surgery during which a physician enlarges the inflamed and obstructed sinus pathways by removing inflamed tissue and bone in order to facilitate normal sinus drainage and aeration as well as provide greater access for delivery of steroids. First introduced in the United States in the 1980s, FESS is considered the standard of care for surgical intervention to treat CRS. However, while approximately 400,000 FESS procedures are performed each year, many surgical candidates opt not to have surgery given that it does not correct the underlying inflammation or obviate the need for medical management. Approximately, 65% of patients have recurrent symptoms post-FESS and up to 20% require a revision surgery.

FESS is a highly invasive procedure, requiring general anesthesia and involving significant post-operative discomfort. During this procedure, a physician inserts an endoscope into the nasal cavity to provide visualization of the patient's anatomy, the turbinate is identified with help of the endoscope and the uncinated process is removed exposing the ethmoid bulla. Surgical instruments, powered cutting tools and balloon dilation devices are used to remove or dilate the obstructive tissue and bone. Given the essential role of the ethmoid bulla in sinus function, the ethmoid sinuses are then opened in 75%-to-85% of FESS procedures. The dependent sinuses each drain into the ethmoid sinuses through ostia, which may be enlarged by either surgically removing tissue or via balloon dilation. Following the surgical intervention, physicians often pack the newly opened ethmoid sinuses with gauze or other obstructive sinus packing materials to hold the sinus cavities open. A follow-up office visit is required several days after the procedure to remove the sinus packing materials and depending on the circumstances a patient may have to visit the surgeon two to three times a week for a period of time using nasal irrigation or will be allowed to carry out simple nasal douching several times a day. A typical FESS procedure costs approximately \$14,000 on average.

Since the introduction of FESS, several new technologies, such as image-guided surgical navigation systems, powered surgical instruments and BSD devices have expanded the addressable patient population who can benefit from FESS. For instance, BSD devices were developed to be used in combination with traditional surgical instruments during FESS to treat the dependent sinuses and have now allowed for treatment of some patients in the physician office setting as a standalone procedure. The cost of a BSD procedure can range from \$3,000 to \$7,000 per treatment.

On an annual basis, approximately 4 million CRS patients fail medical management, but ultimately only approximately 400,000 patients choose to undergo an endoscopic sinus surgery each year. Physicians report that many patients, when presented with sinus surgery as a treatment option, opt to forego the procedure. Some patients regard the often temporary benefits provided by surgery as not worth the expense, recovery time or use of general anesthesia.

While sinus surgery is the standard of care for treating CRS after the failure of medical management, it has several significant limitations:

- ***Invasive surgery with significant post-operative pain and nasal care.*** FESS is an invasive surgery that results in irreversible changes to the anatomy and significant post-operative pain, discomfort and recovery time. As with any invasive surgery, a FESS entails the potential for bleeding, infection and scar tissue.
- ***Requirement for post-operative maintenance.*** As the underlying inflammation of CRS is still unaddressed by sinus surgery, patients are required to post-operatively maintain their treatment with medical management. Additionally, reports have shown nasal polyp regrowth following surgery in many cases and post-nasal discharge often times remains a challenge.
- ***Additional FESS procedures may be needed.*** Approximately 65% of patients have recurring symptoms post-FESS, and approximately 20% of patients will require a revision of sinus surgery within five years, 43% of whom will be within the first post-operative year. This is because sinus surgery does not cure the underlying cause of the inflammation of the sinus pathways, which can cause repeat flare ups. We believe the risk of potential revision surgery is a significant deterrent to some patients that would otherwise undergo sinus surgery.
- ***Potential for severe complications.*** As a result of the use of surgical tools in close proximity to the brain, eyes and other critical anatomy, the potential for significant complications is a concern of physicians and patients alike. The risks of FESS, particularly in the frontal sinuses, cause some ENT physicians to avoid performing surgery in the frontal sinus drainage pathway. Major complications, such as cerebral spinal fluid leaks, swelling of the eye or blindness, occur in approximately 0.3% of FESS procedures.

Drug Eluting Stents and Monoclonal Antibodies

For patients with nasal polyps who remain symptomatic following surgery, who we refer to as refractory patients, certain non-surgical options are available. A steroid-eluting implant that continuously delivers three months of MF was approved to treat CRS in adults with nasal polyps. In addition, a subcutaneously-administered biweekly anti-IL-4/IL-13 monoclonal antibody, or mAb, was recently approved also to treat CRS in adults with nasal polyps.

However, each of these treatments have limitations. The drug-eluting stent has only a three month elution profile and has been approved as an addition to intranasal steroid sprays, presenting a more burdensome treatment regimen and requiring patient compliance. Meanwhile, the mAb is generally reserved for the most refractory patients, given that its long-term systemic safety is unknown and that it is priced at a significant premium even when compared to surgical options. In addition, both of these treatment options are only approved for the treatment of nasal polyps, leaving non-polyp patients (who represent approximately 70%-to-90% of all CRS patients) who are refractory with no approved treatment options.

LYR-210 for the Treatment of CRS

We believe LYR-210, if successfully developed and approved, has the potential to become a preferred alternative to surgery for the treatment of CRS. It is the only product candidate that we are aware of that is designed to provide up to six months of local delivery of anti-inflammatory medication with a single administration. The brief, non-invasive, in-office procedure allows for its implantation without the need for surgery. Further, we believe our studies have shown that LYR-210 has the potential to be an effective treatment for both patients with and without polyps. We believe LYR-210 has the potential to be a safe, effective and broadly applicable CRS treatment, designed to enhance patient comfort and physician experience and eliminate

patient compliance issues associated with other CRS treatments, such as intranasal steroid sprays, while achieving reduced costs compared to other CRS treatments, such as sinus surgery.

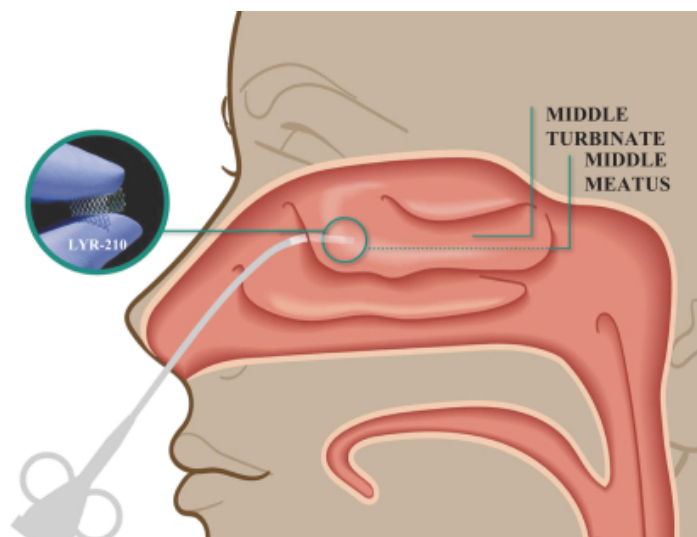


Figure 4. Illustration of Placement of LYR-210 in Middle Meatus.

LYR-210 is an investigational miniaturized local drug delivery system designed to fit within, and conform to, the confined space of a surgically-naïve patient's middle meatus, an air-containing space that plays a fundamental role in drainage of the paranasal sinuses (see Figure 4, above). LYR-210 consists of MF, the active ingredient in various FDA-approved drugs, embedded in biocompatible polymers to aid in the controlled and sustained delivery of MF to the sinonasal mucosal tissue from a single drug administration. LYR-210 has a tubular braid configuration with a uniform diamond pattern throughout and is 13 mm in diameter and 10 mm in length in the unconstrained state. It has elastic properties to promote patient comfort and is designed to be self-retaining against the mucosal tissue to allow effective drug transfer. The matrix is comprised of a base structure and a drug formulation. The base structure is composed of PLGA and PLCL elastomer to provide a 3-dimensional structure and elasticity. The drug formulation matrix consists of the active ingredient, MF, embedded in the inactive ingredients containing PLCL and PLA to control the release rate of MF. The composition and mass of the drug formulation matrix is specified to achieve the drug dose over time.

LYR-210 is intended to be administered bilaterally into the non-operated middle meatus by an ENT physician under endoscopic visualization via a provided, single use applicator. It is designed for office-based administration performed with topical anesthesia. Once administered, LYR-210 is designed to gradually release MF to the inflamed mucosal tissue for up to six months from a single administration. LYR-210 can be removed at six months or earlier at the physician's discretion using standard instruments and, if needed, replaced with a new LYR-210. LYR-210 is made with bioresorbable polymers that, if left in place, would gradually dissolve over time. Moreover, the elastomeric matrix encapsulates the underlying mesh fibers to facilitate removal.

Overview of Our Clinical Development

The table below summarizes our completed and ongoing clinical trials for LYR-210 for CRS in patients who have failed medical management and have not undergone endoscopic sinus surgery.

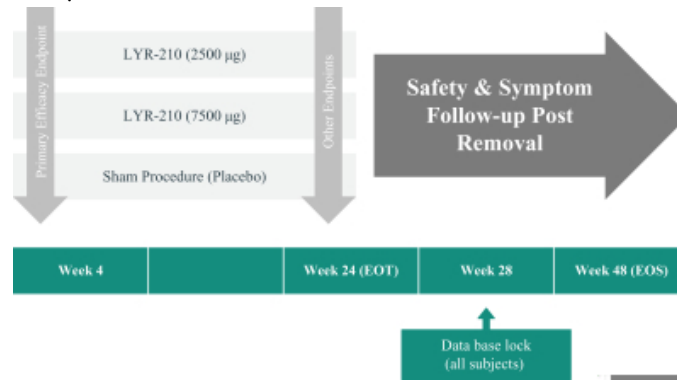
Trial	Status	Trial Design	Trial Objectives	Trial Results
Phase 1	Completed; Results presented in October 2018	<ul style="list-style-type: none"> Prospective, multi-center, non-randomized, single-arm, open-label clinical trial 25 week trial, including 24 week treatment period, plus one week post-removal Bilateral 2,500 mg dose 20 patients 5 study sites 	<ul style="list-style-type: none"> Study objective: Evaluate the safety and feasibility over 24 weeks of continuous anti-inflammatory treatment with a single administration of LYR-210 Primary endpoint: Product-related serious adverse events from baseline to 4 weeks post-procedure Additional data collected: Morning serum cortisol, change in intraocular pressure, plasma pharmacokinetics, quality of life by SNOT-22 (secondary endpoint), endoscopy and MRI 	<ul style="list-style-type: none"> Primary safety endpoint achieved / 2,500 mg was well tolerated during entire duration of treatment Significant and rapid, clinically meaningful and durable improvement in SNOT-22 scores was observed from week 1 through week 25 <ul style="list-style-type: none"> Average change in baseline SNOT-22 score at week 1 was -13.0 points (P= 0.008 to pre-treatment) Symptom relief, as measured by SNOT-22 score, was observed through the entire duration of study, achieving an average change from baseline of -20.5 points at week 24 (P=0.00005 to pre-treatment), which was the end of the treatment period, and -20.0 (p < 0.0001) at week 25, which was the end of the study
Phase 2 (LANTERN)	Initiated May 2019	<ul style="list-style-type: none"> Randomized, blinded, sham-controlled, dose-ranging, parallel-group clinical trial 24 week treatment period, plus 24 week safety follow up post-removal Bilateral 2,500 mg or 7,500 mg dose patients Up to 50 study sites globally 	<ul style="list-style-type: none"> Primary endpoint: Change in composite score of 7-day average of 4 cardinal symptoms from baseline at week 4 Secondary objectives: Symptom improvement at week 24, sinus imaging to assess reduction in inflammation, SNOT-22, time to treatment failure, reduction in inflammation, frequency of exacerbations, pharmacokinetics/pharmacodynamics 	<ul style="list-style-type: none"> Expect to complete enrollment, data base lock and report topline data in

Phase 2

Our Phase 2 LANTERN clinical trial for LYR-210 was initiated in May 2019. The clinical trial is designed as a multi-center, randomized, sham procedure-controlled, patient blinded trial. The study will evaluate patients across up to 50 sites in the United States, Australia, Austria, Czech Republic, New Zealand and

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Poland. The goal of the trial is to evaluate the efficacy of LYR-210 in treating adult surgically-naïve CRS patients who have failed medical management. We expect to report topline data in



EOT = End of Treatment; EOS = End of Study.

Figure 5. Design of Phase 2 LANTERN Clinical Trial for LYR-210.

The trial consists of three arms: (1) an experimental arm with bilateral placement of 2,500 µg of LYR-210 consisting of _____ subjects; (2) an experimental arm with bilateral placement of 7,500 µg of LYR-210 consisting of _____ subjects; and (3) a control arm with a bilateral sham procedure only consisting of _____ subjects (see Figure 5, above). In addition, subjects will be supplied with saline for nasal irrigation treatment during the course of the treatment period.

The primary endpoint of the trial is a change from baseline in the 7-day average scores of the 4-Cardinal Symptoms Score, or 4CSS, at week 4. The FDA prefers a composite score of the cardinal symptoms of CRS for patients with CRS, and we will utilize the 4CSS for the trial. The 4CSS is comprised of four domains that are scored 0-3 with a total score of 12. The four domains are: (1) obstruction and congestion; (2) facial pain and pressure; (3) nasal discharge; and (4) olfactory loss (loss of sense of smell).

The key secondary endpoints for the trial are the change from baseline in 7-day average 4CSS at week 24, time to treatment failure, and change from baseline in Zinreich score (a measure of inflammation) for the posterior ethmoid, frontal or sphenoid sinuses at week 24.

Phase 1

Our Phase 1 clinical trial for LYR-210 was a prospective, multi-center, non-randomized, single-arm, open-label clinical trial with adult surgically-naïve CRS patients who have failed medical management. The objective of the trial was to evaluate safety and feasibility over 24 weeks of continuous anti-inflammatory treatment with a single administration of LYR-210 with an additional measurement taken one week post-removal. The trial was conducted across five sites in New Zealand and Australia. Forty LYR-210 matrices were placed bilaterally in 20 patients with and without nasal polyps. Each matrix contained 2,500 µg of MF. LYR-210 met its primary safety endpoint, and significant and rapid, clinically meaningful and durable improvement on a patient symptom severity scale was observed through 25 weeks.

Study Design	Prospective, multi-center, non-randomized, single-arm, open-label clinical trial
Study Objectives	Safety and feasibility over 24 weeks of continuous anti-inflammatory treatment with a single administration of LYR-210 with an additional measurement taken one week post-removal
Patient Population	Adult CRS patients who have failed medical management and have not had surgery
Number of Subjects	20 patients with CRS (40 LYR-210 matrices placed)
Number of Sites	5 study sites (New Zealand and Australia)
Dose	2,500 mcg bilaterally
Primary Endpoint	Product-related serious adverse events from baseline to week 4
Additional Data Collected	<ul style="list-style-type: none">• Morning serum cortisol• Intraocular pressure• Plasma pharmacokinetics• Quality of life by SNOT-22• Endoscopy and MRI

Figure 6. Description of Phase 1 Clinical Trial for LYR-210.

Twenty patients were enrolled, 12 of whom exhibited no bilateral nasal polyps and eight of whom exhibited bilateral nasal polyps. All 20 patients received bilateral administration of LYR-210 at 2,500 µg in an office setting. The study population was predominantly male with a mean age of 39.9 (range: 24-67) years old. All patients reported moderate-to-severe CRS symptoms with a mean SNOT-22 score of 50.9, of which nine patients reported severe symptoms (SNOT-22 score > 50). All patients complained of nasal obstruction.

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The Phase 1 trial achieved its primary safety endpoint at week 4. LYR-210 at 2,500 µg was well tolerated by patients during the entire duration of treatment and also gave insight into the successful office-based placement of the matrix and clinical outcomes in non-polyp and polyp patients. There were no reports of unexpected adverse events, or AEs, or local nasal AEs, including epistaxis, nasal burning, nasal dryness, nasal irritation and nasal septal perforation during the 24-week MF local dosing treatment duration. Additionally, no change in morning serum cortisol levels or intraocular pressures were noted.

Event ⁽¹⁾ Systemic Organ Class	Number of Patients with Event over full 25-week period ⁽²⁾
All Adverse Events	16
Common AE (> 1 Patient)	
General disorders and administration site conditions	
Facial pain	2
Infections and infestations	
Nasopharyngitis	7
Sinusitis	4
Upper respiratory tract infection	5
Injury, poisoning and procedural complications	
Procedural headache	2
Respiratory, thoracic and mediastinal disorders	
Nasal discomfort	2
Nasal odor	4
All Serious Adverse Events	
Cardiac disorders	
Acute Myocardial Infarction	1

(1) AEs coded using the MedDRA dictionary, version 21.0.

(2) N=20 total patients. Patients experiencing the same AEs are counted only once. An additional 5 AEs occurred during the screening period, prior to treatment and are not included in this table. 25-week period includes one week post-removal.

Figure 7. Adverse Event Profile for Phase 1 Clinical Trial for LYR-210.

The most common reported AEs were nasopharyngitis, upper respiratory tract infection, sinusitis, nasal odor, procedural headache, nasal discomfort, and facial pain. There was one serious adverse event, an acute myocardial infarction, which was deemed to be unrelated to LYR-210. LYR-210 was removed due to AEs before the end of the 24-week treatment period from two patients who dropped out of the trial prior to completion. One patient requested removal after 20 weeks of treatment due to complaints of memory loss, which was deemed to be unrelated to LYR-210. The other patient requested removal after 17 weeks of treatment due to a recurrence of a sinus infection that was non-serious and moderate in severity and the patient reported relief of AE symptoms within four days following removal and medical treatment.

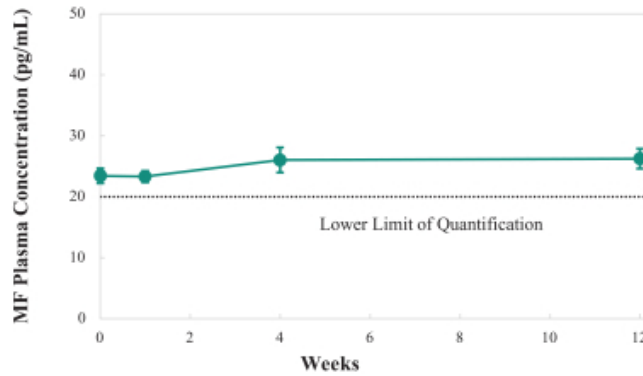
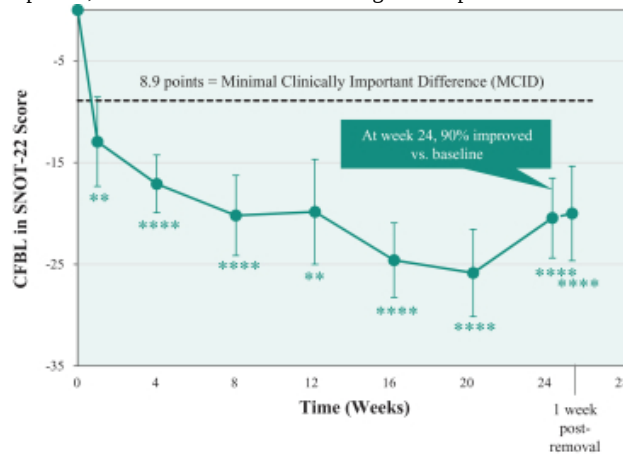


Figure 8. Plasma Drug Concentration for the 50% of Patients with Levels Above LLQ. Note: at day 1, week 1, week 4 and week 12, there were 11, 10, 16 and 10 patients, respectively, whose plasma drug concentration was below the lower limit of quantification, or LLQ.

The trial results indicated low levels of systemically circulated steroid from LYR-210. MF plasma concentrations were unquantifiable in about 50% of patients and near the lower limit of quantification of 20 pg/mL in the other 50% of patients (see Figure 8, above). There were no AEs associated with systemic levels of MF.

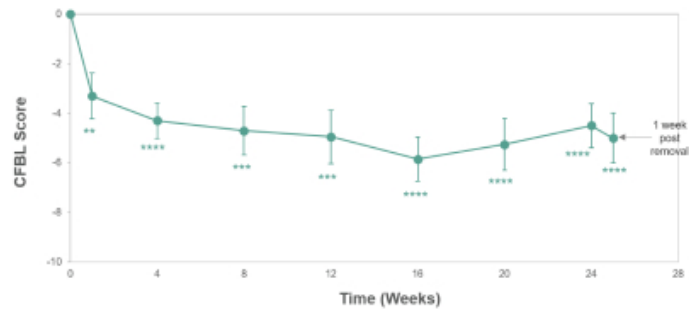
All of the matrices were successfully bilaterally placed in the sinonasal passages, in both non-polyp and polyp patients. In 7 out of the 40 matrices placed, the investigator felt that the initial placement was not ideal, and therefore the matrix was removed and a new matrix was placed. Patients did not report feeling the matrices post-administration. Further, LYR-210 had high levels of intranasal retention out to 24 weeks, with a retention rate of more than 80%. There were no AEs associated with the matrices that were dislodged.

The Sino-Nasal Outcome Test, or SNOT-22, is a disease-specific questionnaire for sinus disease. A validated patient-reported outcome measure, the SNOT-22 is used widely by ENTs to assess disease status and treatment outcomes in CRS patients with and without polyps. It is comprised of 20 questions which address CRS-related symptoms and quality of life that can be grouped into 5 domains including rhinologic, extranasal rhinologic, ear/facial, psychological and sleep. Each question is scored on a scale from 0 to 5 for a total score ranging from 0 to 110 points. Mild disease is defined on the SNOT-22 as a score of 8 to 20, moderate as a score of 21 to 50 and severe as greater than 50. If a patient has a SNOT-22 score of 7 or lower they are considered “normal” or absent of sino-nasal disease. The SNOT-22 minimal clinically important difference, or MCID, which is the smallest change in SNOT-22 score that can be detected by a patient, has been established as a change of 8.9 points.



* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$, **** $P < 0.0001$ to baseline by paired two tailed t-test

Figure 9. Total Symptom Improvement by SNOT-22 Score in Phase 1 Clinical Trial for LYR-210.



** $P < 0.01$, *** $P < 0.001$, **** $P < 0.0001$ to baseline by paired two tailed t-test

Figure 10. Symptom Improvement by Retrospective Analysis of the Scores Corresponding to the Composite 4CSS Extracted from the Corresponding Individual SNOT-22 Scores.

Patients generally experienced significant and rapid, clinically meaningful and durable improvements in CRS symptoms in the Phase 1 trial, as measured by SNOT-22 score (see Figure 9, above). Significant reduction in SNOT-22 scores was observed at week 1 and this reduction persisted through week 25, at the end of the trial (see Figure 9, above). Changes from baseline, or CFBL, in SNOT-22 score were statistically significant ($P < 0.01$) at all measured intervals. The average change from baseline in SNOT-22 score at week 1 was -13.0 points ($P = 0.008$ to pre-treatment), achieving the MCID of -8.9 points. Further, symptom relief was observed through the entire duration of study, and achieved -20.5 points at week 24 ($P = 0.00005$ to pre-treatment), at the time LYR-210 was removed. Significant symptom improvement was achieved in all of the SNOT-22 subdomains at week 24. We conducted a retrospective analysis of symptom improvement as measured by CFBL in the individual domain scores extracted from the individual SNOT-22 scores that correspond to the cardinal symptoms comprising the 4CSS (see Figure 10, above), which is the primary endpoint of our Phase 2 LANTERN clinical trial. This retrospective analysis showed that the CFBL in the individual domain scores were generally consistent with the CFBL in the SNOT-22 scores. This composite score produced as a result of the retrospective analysis was not a primary endpoint of our Phase 1 clinical trial and was done for illustrative purposes only.

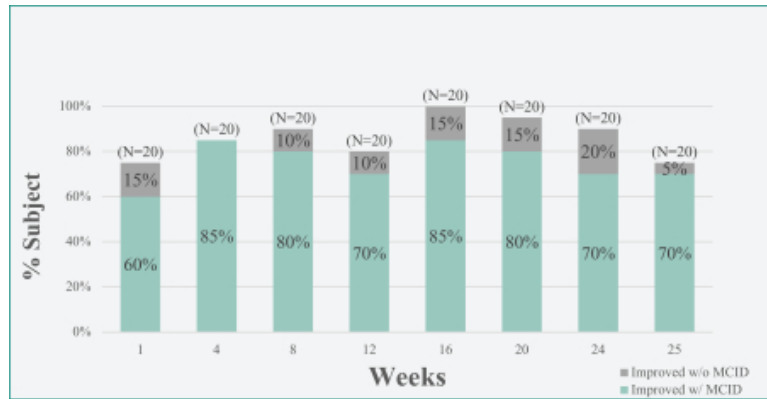
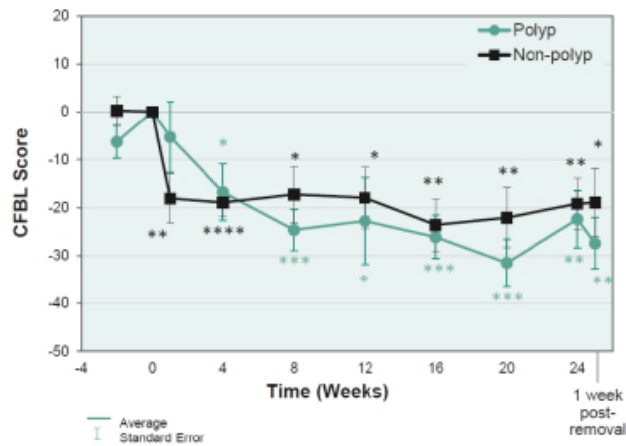


Figure 11. Percent of Patients with Symptom Improvement by SNOT-22 Score, Showing Improvement with MCID and without MCID, in Phase 1 Clinical Trial for LYR-210.

At week 24, 90% of patients improved versus the baseline score, with clinically meaningful improvement observed in 70% of patients (see Figure 11, above).



* P<0.05, **P<0.01, ***P<0.001, **** P<0.0001 to baseline by paired two tailed t-test

Figure 12. Symptom Improvement in Polyp and Non-Polyp Patients by Change from Baseline in SNOT-22 Score in Phase 1 Clinical Trial for LYR-210.

Similar efficacy was observed in both polyp and non-polyp patients (see Figure 12, above). Further, even though each of the clinical trial patients were surgery candidates at the trial entry and no topical intranasal spray was utilized in conjunction with LYR-210 during the 25-week trial, none of the patients underwent sinus surgery during the treatment period.

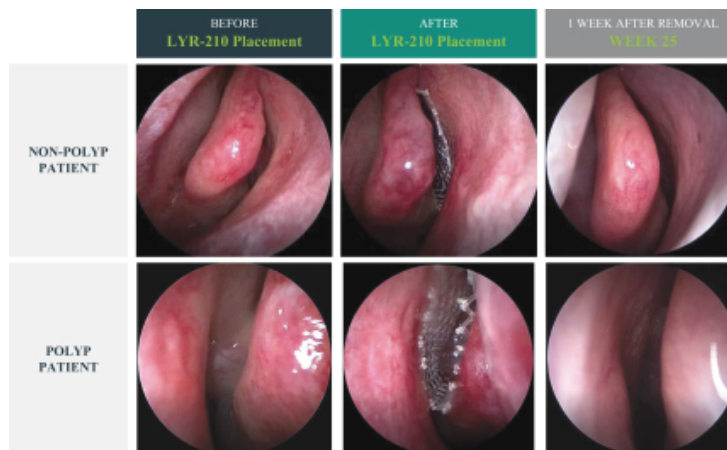


Figure 13. Endoscopy Images Before and After Treatment with LYR-210 in Phase 1 Clinical Trial. For illustrative purposes only.

Figure 13, above, shows via nasal endoscopy images from our Phase 1 clinical trial the impact of LYR-210 observed in a patient without nasal polyps and a patient with nasal polyps at three time points: before LYR-210 placement, after LYR-210 placement and at week 25, one week after LYR-210 was removed. The middle image for each patient shows the deployment of LYR-210 in the middle meatus of a non-polyp and a polyp patient, and how LYR-210 conformed to the walls of the obstructed nasal anatomy to maximize tissue contact. In the third image for each patient, the erythema and inflammation present before treatment was observed to be resolved and less evident after 24 weeks of treatment and one week post-removal.

LYR-220 for the Treatment of CRS

LYR-220 is a new investigative therapy for CRS patients with and without nasal polyps that have failed medical management and have had a prior endoscopic sinus surgery. In the treatment paradigm, LYR-220, if approved, is positioned for use for patients post-surgical intervention who continue to have recurrent CRS symptoms or relapse, as a potential preferred alternative to revision surgery. LYR-220 utilizes the same API as LYR-210, but with a larger matrix to treat larger nasal cavities consistent with those in post-surgical CRS patients. We estimate that 40% of patients that present to an ENT physician with CRS have had a prior surgery. These patients represent the addressable market for LYR-220.

No product is currently approved by the FDA to treat post-surgery CRS patients that do not have polyps, representing the vast majority of such CRS patients, and only a three-month steroid-eluting sinus implant and a mAb have been approved by the FDA for the treatment of post-surgery CRS patients that have polyps. We believe LYR-220 is meaningfully differentiated from currently approved products because, if successfully developed and approved, it would be the only product able to deliver up to six months of topical treatment in a single administration to treat both polyp and non-polyp post-surgery CRS patients who fail medical management. Further, with respect to the mAb, LYR-220 is differentiated because it would provide localized delivery so as to avoid systemic side effects with the added benefit of being a significantly more economical treatment alternative.

We expect to initiate a proof-of-concept clinical trial for LYR-220 in [redacted] and, if LYR-210 is approved by the FDA, to submit an sNDA for a potentially faster path to approval for LYR-220. We believe the clinical development of LYR-220 may require only a single Phase 3 study for registration.

Future Product Candidates

Our XTreo platform provides a versatile drug development engine that enables us to focus on other indications where long-term delivery of existing treatments may provide improved local bioavailability and enhanced efficacy or safety. Other conditions we may pursue with nasal delivery include allergic rhinitis, rare disorders where nasal disease contributes to the disease pathology and central nervous system disorders. Additionally, we believe our platform can be adapted to locally address conditions of the ear.

Post-Approval Commercialization Strategy

If LYR-210 and LYR-220 are successfully developed and approved, we intend to engage in targeted outreach to our key physician, payer and patient audiences. ENT physicians are the primary treaters of CRS patients who have failed medical management and thus represent our target physician base. Given the requirement for endoscopic placement of our products, we plan to build an in-house sales force, consisting of approximately 75-100 employees, that will target ENT physicians whose sub-specialty is general otolaryngology or rhinology, which together represent approximately 60% of the approximately 12,000 ENT physicians in the United States. Given that LYR-210 and LYR-220 can be administered in a brief, simple procedure requiring no additional equipment, we anticipate that our sales representatives' time will primarily be directed at educating the ENT physicians around product attributes and patient selection. We plan to supplement our direct physician outreach with appropriate medical education and marketing efforts to further penetrate our physician base and drive adoption of our products.

Ensuring physician and patient market access to our products will be critical to our success, and we plan to execute a holistic reimbursement strategy, consisting of a reimbursement support hub and approximately 15-20 field-based reimbursement experts, that will integrate payer coverage and physician practice management initiatives. We believe that the primary decision makers from a payer perspective are private payers, which represent approximately 80% of the payer mix for our products. We intend to deploy a market access team to educate payers on the clinical and pharmacoeconomic attributes of our products and to seek to secure favorable coverage policies and to maximize the covered lives that have reimbursement for our products. The team will also secure the necessary codes to facilitate physician and patient payment including a J-code, which is required for physician-administered products. In addition, we expect to be able to use existing current procedural terminology codes for procedures involving the placement and removal of our product candidates, if approved. To maximize access to LYR-210 and LYR-220, we plan to develop a reimbursement support model which aims to reduce physician financial risk associated with physician-administered products.

Subsequent to our initial ENT physician and payer efforts, we also plan to selectively use cost-effective, patient-directed marketing strategies to further increase awareness among the CRS patient community of our products with the goal of increasing ENT physician visits.

In addition, we may also consider entering into collaborative relationships with established entities outside the U.S. for a potentially faster path to bringing our products to market. We may also enter into collaborative relationships within the U.S. for future pipeline product candidates.

Competition

Our industry is highly competitive and subject to rapid and significant technological change as research provides a deeper understanding of the pathology of diseases and new technologies and treatments are developed. We believe our scientific knowledge, technology, and development capabilities provide us with substantial competitive advantages, but we face potential competition from multiple sources, including large pharmaceutical, biotechnology, specialty pharmaceutical and, to a lesser degree, medical device companies.

Our competitors may have significantly greater financial resources, robust drug pipelines, established presence in the market and expertise in research and development, manufacturing, pre-clinical and clinical

testing, obtaining regulatory approvals and reimbursement and marketing approved products than we do. These competitors also compete with us in recruiting and retaining qualified clinical, regulatory, scientific, sales, marketing and management personnel, in establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies.

LYR-210 and LYR-220 are positioned following the failure of medical management and therefore are not anticipated to compete directly with branded, generic or over-the-counter, inhaled corticosteroids. LYR-210 is positioned for use in surgically-naïve CRS patients where the primary competitive treatment is surgical procedures, including FESS with and without BSD and BSD as a standalone procedure. In this space, LYR-210 would be the only product we are aware of that may deliver six months of local treatment with a single administration for both patients with and without polyps as a preferred alternative to surgical interventions. LYR-220 is positioned for use in patients that have had a prior FESS. Currently there are no competitive treatments for post-surgical patients without polyps. For patients with polyps, LYR-220 would compete against steroid-releasing sinus implants and mAbs. We believe LYR-220 has competitive advantages over these interventions, including a longer elution profile than the existing sinus implant and no systemic exposure relative to the mAb. Key competitive factors affecting the commercial success of both LYR-210 and LYR-220 and any other product candidates we may develop are likely to be efficacy, safety and tolerability profile, reliability, convenience of administration, price and reimbursement.

Several companies are also currently developing treatments for CRS patients with nasal polyps, including Hoffmann-La Roche, GlaxoSmithKline, Gossamer Bio, AnaptysBio, Regeneron, OptiNose and Intersect ENT. If these treatments are approved by the FDA, they could represent competition across the spectrum of CRS patients.

Manufacturing and Supply

We currently manufacture our drug delivery products at our facility in Watertown, Massachusetts with components supplied by external suppliers. We perform inspections of these components before use in our manufacturing operations. Using these components, we manufacture, assemble, inspect, and package our implants, and send them to a third-party sterilization vendor. After sterilization, we inspect the product and test via third-party laboratories to determine compliance with our specifications. Upon release of the lot to inventory, the product is labeled and distributed via a third-party vendor to clinical sites.

The API and a number of the components used in our implants are currently supplied to us from single source suppliers. We source our supplies from manufacturers with a track record of Good Manufacturing Procedures (GMP). We rely on single source suppliers for some of our polymer materials, some extrusions and molded components, and for finished goods testing, labeling and distribution. Our ability to supply our products and to develop our product candidates depends, in part, on our ability to obtain successfully the API and polymer materials used in these products in accordance with regulatory requirements and in sufficient quantities. We plan to enter into manufacturing, supply and quality agreements with our single source suppliers. We generally acquire our single source components pursuant to purchase orders placed in the ordinary course of business. We currently maintain sufficient supplies of the API and components from our single source suppliers to support our ongoing Phase 2 LANTERN clinical trial and ongoing development activities. In the future, we intend to maintain sufficient supplies such that our ability to supply the clinic or commercial market will not be compromised and so as to allow for sufficient time necessary to obtain another source of API or components.

We are currently improving our manufacturing capabilities and increasing capacity to better support further clinical studies and commercialization. We plan to use an outsourcing model and choose a contract manufacturer with the appropriate infrastructure, technical experience, quality systems and a track record of FDA compliance. We plan to continue to use an outsourcing model for our operations until we reach a sufficient scale to justify investment in internal manufacturing capacity.

Intellectual Property

We actively seek to protect the intellectual property and proprietary technology platform that we believe is important to our business, which includes seeking and maintaining patents covering our technology platform and products, and any other inventions that are commercially or strategically important to the development of our business. We also rely upon trademarks to build and maintain the integrity of our brand, and we seek to protect the confidentiality of trade secrets that may be important to the development of our business. For more information, please see “Risk Factors—Risks Related to Our Intellectual Property”.

Patents and Patent Applications

As of December 31, 2019, we own 18 issued U.S. patents, nine foreign issued patents, seven U.S. pending applications, and 21 foreign pending applications, out of which 12 issued U.S. patents, nine foreign issued patents, six U.S. pending applications, and 21 foreign pending applications are directed to our XTreo platform, LYR-210, and LYR-220.

All technology material to our business has been developed in-house and is protected with patents and patent applications in two major lineages, along with the beginning of a third, more recent lineage of patent applications. The first lineage dates from 2009 and provides protection potentially until 2030, exclusive of possible patent term adjustments or extensions or other forms of exclusivity. This first lineage includes issued patents in the U.S., Europe, Japan, Canada and Great Britain, that are not limited to any particular drug, site of delivery or patient condition, but specify features of the implant, system, method and polymers. The second lineage dates from 2015 and provides protection potentially until 2036, exclusive of possible patent term adjustments or extensions or other forms of exclusivity. This second lineage includes issued U.S. patents with ENT-specific method claims directed to the specific drug, site of delivery (i.e. middle meatus) and patient condition, along with numerous pending applications in the U.S., Europe, Japan, Canada, China and the Great Britain. The third, more recent lineage dates from 2017 with the prospect of patent protection potentially until 2037, exclusive of possible patent term adjustments or extensions or other forms of exclusivity. This third lineage attempts to capture the drug release features and patient results from the recent clinical trial. It includes pending applications in the U.S. and Great Britain, along with a patent application filed under the Patent Cooperation Treaty that entered the National Phase in October of 2019 in the following countries: the U.S., Canada, Australia, Europe, Korea, Singapore, China and Japan.

Trademarks and Trade Secrets

As of December 31, 2019, our trademark portfolio contained one U.S. trademark registration and eight foreign trademark registrations.

We also rely upon trade secrets, know-how and continuing technologies innovation, and may pursue licensing opportunities in the future, to develop and maintain our competitive position. We seek to protect our proprietary rights through a variety of methods, including confidentiality agreements, invention assignment agreements, non-solicitation and non-compete agreements with suppliers, employees, consultants and others who may have access to proprietary information.

Government Regulation and Product Approval

Government authorities in the United States, at the federal, state and local level, and in other countries extensively regulate, among other things, the research, development, testing, manufacturing, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, import, and export of pharmaceutical products such as those we are developing. We will be required to navigate the various preclinical, clinical and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval of our product candidates. The processes for obtaining regulatory approvals in the United States and other countries, as appropriate, along with subsequent compliance with appropriate federal, state, local and foreign statutes and regulations, require the expenditure of substantial time and resources.

U.S. Government Regulation

In the United States, we are subject to extensive regulation by the FDA, which regulates drugs under the Federal Food, Drug, and Cosmetic Act, or the FDCA, and its implementing regulations, and other federal, state, and local regulatory authorities. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations requires 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 a variety of administrative or judicial sanctions, such as the FDA's refusal to approve pending NDAs, withdrawal of an approval, imposition of a clinical hold, issuance of warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties.

The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA's Good Laboratory Practice 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 at each clinical site before each trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with good clinical practice (GCP) requirements to establish the safety and efficacy of the proposed drug product for each indication;
- submission to the FDA of an NDA;
- satisfactory completion of an FDA advisory committee review, if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with current good manufacturing practice, or cGMP, requirements and to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity;
- satisfactory completion of an FDA inspection of selected clinical sites to assure compliance with GCPs and the integrity of the clinical data;
- payment of user fees; and
- FDA review and approval of the NDA.

We are developing our product candidates using an innovative drug delivery platform comprised of a mesh scaffold, an elastomeric matrix and a polymer-drug complex delivered through a narrow applicator. In the United States, products composed of components that would normally be regulated by different centers at the FDA are known as combination products. Typically, the FDA's Office of Combination Products assigns a combination product to a specific Agency Center as the lead reviewer. The FDA determines which Center will lead a product's review based upon the product's primary mode of action. Depending on the type of combination product, its approval, clearance or licensure may usually be obtained through the submission of a single

marketing application. We anticipate that LYR-210 and LYR-220 will be regulated as drugs, and for each product candidate, the FDA will permit a single regulatory submission seeking approval. However, the FDA sometimes will require separate marketing applications for individual constituent parts of the combination product which may require additional time, effort, and information. Even when a single marketing application is required for a combination product, such as an NDA for a combination pharmaceutical and device product, both the FDA's Center for Drug Evaluation and Research and the FDA's Center for Devices and Radiological Health may participate in the review. An applicant will also need to discuss with the Agency how to apply certain premarket requirements and post-marketing regulatory requirements, including conduct of clinical trials, adverse event reporting and good manufacturing practices, to their combination product.

Preclinical Studies

Preclinical studies include laboratory evaluation of product chemistry, toxicity and formulation, as well as animal studies to assess potential safety and efficacy. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data and any available clinical data or literature, among other things, to the FDA as part of an IND. Some preclinical testing may continue even after the IND is submitted. An IND automatically becomes effective and a clinical trial proposed in the IND may begin 30 days after the FDA receives the IND, unless before that time the FDA raises concerns or questions related to one or more proposed clinical trials and places the clinical trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to commence.

Clinical Trials

Clinical trials involve the administration of the investigational new drug to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. An IRB at each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution, and the IRB must continue to oversee the clinical trial while it is being conducted. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on their www.clinicaltrials.gov website.

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

- Phase 1: The drug is initially introduced into healthy human subjects or patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness.
- Phase 2: The drug is administered to 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.
- Phase 3: The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product, and to provide adequate information for the labeling of the product.
- Phase 4: In some cases, the FDA may conditionally approve an NDA for a product candidate on the sponsor's agreement to conduct additional clinical trials after NDA approval. In other cases, a

sponsor may voluntarily conduct additional clinical trials post approval to gain more information about the drug. Such post approval trials are typically referred to as Phase 4 clinical trials.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA, and more frequently if serious adverse events occur. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects 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 drug has been associated with unexpected serious harm to patients.

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.

Marketing Approval

Assuming successful completion of the required clinical testing, the results of the preclinical and clinical studies, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA requesting approval to market the product for one or more indications. In most cases, the submission of an NDA is subject to a substantial application user fee. Under the Prescription Drug User Fee Act (PDUFA) guidelines that are currently in effect, the FDA has a goal of 10 months to review and act on a standard NDA and 6 months to review and act on a priority NDA, measured from the "filing" date for an NDA for a new molecular entity (NME) or from the receipt date for an NDA for a non-NME product. Measuring from the "filing" date typically adds approximately two months to the timeline for review and decision, because the FDA has sixty days from receipt to make a "filing" decision, as described below.

In addition, under the Pediatric Research Equity Act of 2003 as amended and reauthorized, certain NDAs or supplements to an NDA must contain data that are adequate to assess the safety and effectiveness of the drug 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. 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 from the pediatric data requirements.

The FDA also may require submission of a risk evaluation and mitigation strategy, or REMS, plan to ensure that the benefits of the drug outweigh its risks. The REMS plan could include medication guides, physician communication plans, assessment plans, and/or elements to assure safe use, such as restricted distribution methods, patient registries, or other risk minimization tools.

The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews an NDA to determine, among other things, whether the drug is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards designed to assure the product's continued safety, quality and purity.

The FDA may refer an application for a novel drug to an advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides 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.

Before approving an NDA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application 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. Additionally, before approving an NDA, the FDA may inspect one or more clinical trial sites to assure compliance with GCP requirements.

The FDA generally accepts data from foreign clinical trials in support of an NDA if the trials were conducted under an IND. If a foreign clinical trial is not conducted under an IND, the FDA nevertheless may accept the data in support of an NDA if the study was conducted in accordance with GCP requirements and the FDA is able to validate the data through an on-site inspection, if deemed necessary. Although the FDA generally requests that marketing applications be supported by some data from domestic clinical studies, the FDA may accept foreign data as the sole basis for marketing approval if (1) the foreign data are applicable to the U.S. population and U.S. medical practice, (2) the studies were performed by clinical investigators with recognized competence, and (3) the data may be considered valid without the need for an on-site inspection or, if the FDA considers the inspection to be necessary, the FDA is able to validate the data through an on-site inspection or other appropriate means.

The testing and approval process for an NDA requires substantial time, effort and financial resources, and each may take several years to complete. Data obtained from preclinical and clinical testing are not always conclusive and may be susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. The FDA may not grant approval on a timely basis, or at all.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a complete response letter. A complete response letter generally contains a statement of specific conditions that must be met to secure final approval of the NDA and may require additional clinical testing, preclinical testing, manufacturing or formulation modifications or other changes in order for the FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under a REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

The Hatch-Waxman Amendments

Our current regulatory strategy is to pursue development of LYR-210 as a Section 505(b)(2) NDA. As an alternative path to FDA approval for modifications to formulations or uses of drugs previously approved by the FDA, an applicant may submit an NDA under Section 505(b)(2) of the FDCA. Section 505(b)(2) was enacted as part of the Hatch-Waxman Amendments. A Section 505(b)(2) NDA is an application that contains full reports of investigations of safety and effectiveness, but where at least some of the information required for approval comes from studies 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. This type of application permits reliance for such approvals on literature or on an FDA finding of safety, effectiveness or both for an approved drug product. As such, under Section 505(b)(2), the FDA may rely, for approval of an NDA, on data not developed by the applicant. Therefore, if we can satisfy the conditions required for a Section 505(b)(2) NDA submission, it may eliminate the need for us to conduct some of the preclinical studies or clinical trials for the new product candidate that might otherwise have been required, although the review time is not shortened. The FDA may then approve the new product candidate for the new indication sought by the 505(b)(2) applicant.

Orange Book Listing

In seeking approval for a drug through an NDA, applicants are required to list with the FDA certain patents whose claims cover the applicant's product. Upon approval of an NDA, each of the patents listed in the application for the drug is then published in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, known as the Orange Book. Any applicant who files an Abbreviated New Drug Application (ANDA) seeking approval of a generic equivalent version of a drug listed in the Orange Book or a 505(b)(2) NDA referencing a drug listed in the Orange Book must certify, for each patent listed in the Orange Book for the referenced drug, to the FDA that (1) no patent information on the drug product that is the subject of the application has been submitted to the FDA, (2) such patent has expired, (3) the date on which such patent expires or (4) such patent is invalid or will not be infringed upon by the manufacture, use or sale of the drug product for which the application is submitted. The fourth certification described above is known as a paragraph IV certification. A notice of the paragraph IV certification must be provided to each owner of the patent that is the subject of the certification and to the holder of the approved NDA to which the ANDA refers. The applicant may also elect to submit a "section viii" statement certifying that its proposed label does not contain (or carves out) any language regarding the patented method-of-use rather than certify to a listed method-of-use patent. This section viii statement does not require notice to the patent holder or NDA owner. There might also be no relevant patent certification.

If the reference NDA holder and patent owners assert a patent challenge directed to one of the Orange Book listed patents within 45 days of the receipt of the paragraph IV certification notice, the FDA is prohibited from approving the application until the earlier of 30 months from the receipt of the paragraph IV certification expiration of the patent, settlement of the lawsuit, or a decision in the infringement case that is favorable to the applicant. Even if the 45 days expire, a patent infringement lawsuit can be brought and could delay market entry, but it would not extend the FDA-related 30-month stay of approval.

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. Specifically, the holder of the NDA for the listed drug may be entitled to a period of non-patent exclusivity, during which the FDA cannot approve an ANDA or 505(b)(2) application that relies on the listed drug. For example, a pharmaceutical manufacturer may obtain five years of non-patent exclusivity upon NDA approval of an NCE, which is a drug that contains an active moiety that has not been approved by FDA in any other NDA. An "active moiety" is defined as the molecule or ion responsible for the drug substance's physiological or pharmacologic action. During the five-year exclusivity period, the FDA cannot accept for filing any ANDA seeking approval of a generic version of that drug or any 505(b)(2) NDA for the same active moiety and that relies on the FDA's findings regarding that drug, except that FDA may accept an application for filing after four years if the

follow-on applicant makes a paragraph IV certification. This exclusivity period may be extended by an additional six months if certain requirements are met to qualify the product for pediatric exclusivity, including the receipt of a written request from the FDA that the NDA holder conduct certain pediatric studies, the submission of study reports from such studies to the FDA after receipt of the written request and satisfaction of the conditions specified in the written request.

Expedited Review and Approval Programs

The FDA has various programs, including Fast Track Designation, accelerated approval, priority review, and breakthrough therapy designation, which are intended to expedite or simplify the process for the development and FDA review of drugs that are intended for the treatment of serious or life threatening diseases or conditions and demonstrate the potential to address unmet medical needs. The purpose of these programs is to provide important new drugs to patients earlier than under standard FDA review procedures.

To be eligible for a Fast Track Designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address an unmet medical need. The FDA will determine that a product will fill an unmet medical need if it will provide a therapy where none exists or provide a therapy that may be potentially superior to existing therapy based on efficacy or safety factors. The FDA may review sections of the NDA for a fast track product on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the NDA.

The FDA may give a priority review designation to drugs that offer major advances in treatment, or provide a treatment where no adequate therapy exists. A priority review means that the goal for the FDA to review an application is six months, rather than the standard review of ten months under current PDUFA guidelines. Under the new PDUFA agreement, these six and ten month review periods are measured from the “filing” date rather than the receipt date for NDAs for new molecular entities, which typically adds approximately two months to the timeline for review and decision from the date of submission. Most products that are eligible for Fast Track Designation are also likely to be considered appropriate to receive a priority review.

In addition, products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may be eligible for accelerated approval and may be approved on the basis of adequate and well-controlled clinical trials establishing that the drug product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require a sponsor of a drug receiving accelerated approval to perform post-marketing studies to verify and describe the predicted effect on irreversible morbidity or mortality or other clinical endpoint, and the drug may be subject to accelerated withdrawal procedures.

Moreover, under the provisions of the Food and Drug Administration Safety and Innovation Act, a sponsor can request designation of a product candidate as a “breakthrough therapy.” A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Drugs designated as breakthrough therapies are also eligible for accelerated approval. The FDA must take certain actions, such as holding timely meetings and providing advice, intended to expedite the development and review of an application for approval of a breakthrough therapy.

Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened. We may explore some of these opportunities for our product candidates as appropriate.

Post Approval Requirements

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA and other government authorities, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications, manufacturing changes or other labeling claims, are subject to prior FDA review and approval. There also are continuing annual program fee requirements for any marketed products.

The FDA may impose a number of post-approval requirements as a condition of approval of an NDA. For example, the FDA may require post-marketing testing, including Phase 4 clinical trials, and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state authorities, and are subject to periodic unannounced inspections by the FDA and these state authorities for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP requirements and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program.

Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label, although physicians, in the practice of medicine, may prescribe approved drugs for unapproved indications. The FDA and other authorities actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act, or PDMA, which regulates the distribution of drugs and drug samples at the federal level, and sets minimum standards for the registration and regulation of drug distributors by the states. Both the PDMA and state laws limit the distribution of prescription pharmaceutical product samples and impose requirements to ensure accountability in distribution.

Other Healthcare Laws

Pharmaceutical and medical device manufacturers are subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which they conduct their business. Such laws include, without limitation, U.S. federal anti-kickback, fraud and abuse, false claims, consumer fraud, pricing reporting, data privacy and security, and transparency laws and regulations as well as similar foreign laws in the jurisdictions outside the U.S. Similar state and local laws and regulations may also restrict business practices in the pharmaceutical industry, such as state anti-kickback and false claims laws, which may apply to 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, including private insurers, or by patients themselves; state laws that 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; state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information or which require tracking gifts and other remuneration and items of value provided to physicians, other healthcare providers and entities; state and local laws that require the registration of pharmaceutical sales representatives; and state and local laws governing the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts. Violation of any of such laws or any other governmental regulations that apply may result in penalties, including, without limitation, civil and criminal penalties, damages, fines, additional reporting obligation, the curtailment or restructuring of operations, exclusion from participation in governmental healthcare programs and individual imprisonment.

Coverage and Reimbursement

Sales of any pharmaceutical product depend, in part, on the extent to which such product will be covered by third-party payors, such as federal, state and foreign government healthcare programs, commercial insurance and managed healthcare organizations, and the level of reimbursement for such product by third-party payors. Significant uncertainty exists as to the coverage and reimbursement status of any newly approved product. Decisions regarding the extent of coverage and amount of reimbursement to be provided are made on a plan-by-plan basis. One third-party payor's decision to cover a particular product does not ensure that other payors will also provide coverage for the product. As a result, the coverage determination process can require manufactures to provide scientific and clinical support for the use of a product to each payor separately and can be a time-consuming process, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. For products administered under the supervision of a physician, obtaining coverage and adequate reimbursement may be particularly difficult because of the higher prices often associated with such drugs. Additionally, separate reimbursement for the product itself or the treatment or procedure in which the product is used may not be available, which may impact physician utilization.

In addition, third-party payors are increasingly reducing reimbursements for pharmaceutical products and services. The U.S. government and state legislatures have continued implementing cost-containment programs, including price controls, restrictions on coverage and reimbursement and requirements for substitution of generic products. Third-party payors are more and more challenging the prices charged, examining the medical necessity and reviewing the cost effectiveness of pharmaceutical products, in addition to questioning their safety and efficacy. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit sales of any product.

Decreases in third-party reimbursement for any product or a decision by a third-party payor not to cover a product could reduce physician usage and patient demand for the product.

In international markets, reimbursement and healthcare payment systems vary significantly by country, and many countries have instituted price ceilings on specific products and therapies. For example, the European Union provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. Pharmaceutical products may face competition from lower-priced products in foreign countries that have placed price controls on pharmaceutical products and may also compete with imported foreign products. Furthermore, there is no assurance that a product will be considered medically reasonable and necessary for a specific indication, will be considered cost-effective by third-party payors, that an adequate level of reimbursement will be established even if coverage is available or that the third-party payors' reimbursement policies will not adversely affect the ability for manufacturers to sell products profitably.

Healthcare Reform

In the United States and certain foreign jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes to the healthcare system. In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively the ACA, was signed into law, which substantially changed the way healthcare is financed by both governmental and private insurers in the United States. By way of example, the ACA increased the minimum level of Medicaid rebates payable by manufacturers of brand name drugs from 15.1% to 23.1%; required collection of rebates for drugs paid by Medicaid managed care organizations; imposed a non-deductible annual fee on pharmaceutical manufacturers or importers who sell certain "branded prescription drugs" to specified federal government programs, implemented 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; expanded eligibility criteria for Medicaid programs; creates a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and established a Center for Medicare Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been judicial and Congressional challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. For example, in 2017, Congress enacted the Tax Cuts and Jobs Act, which eliminated the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas, or the Texas District Court Judge, ruled that the individual mandate is a critical and inseparable feature of the ACA, and therefore, because it was repealed as part of the Tax Cuts and Jobs Act, the remaining provisions of the ACA are invalid as well. While the Texas U.S. District Court Judge, as well as the Trump administration and CMS, have stated that the ruling will have no immediate effect, and on December 30, 2018 the Texas District Court Judge issued an order staying the judgment pending appeal, it is unclear how this decision, subsequent appeals, and other efforts to repeal and replace the ACA will impact the ACA.

Other legislative changes have been proposed and adopted since the ACA was enacted, including aggregate reductions of Medicare payments to providers of 2% per fiscal year and reduced payments to several types of Medicare providers, which will remain in effect through 2027 absent additional congressional action. Moreover, there has recently been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted legislation designed, among other things, to bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs and reform government program reimbursement methodologies for pharmaceutical products.

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Individual states in the United States have also become increasingly active in 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, mechanisms to encourage importation from other countries and bulk purchasing. Furthermore, there has been increased interest by third party payors and governmental authorities in reference pricing systems and publication of discounts and list prices.

Employees

As of _____, 2020, we had _____ full-time employees, including _____ employees with M.D. or Ph.D. degrees. Of these full-time employees, _____ employees are engaged in research and development activities. None of our employees is 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 at 480 Arsenal Way, Watertown, Massachusetts, where we lease approximately 22,343 square feet of office and laboratory space. We lease this space under a lease agreement, as amended, that terminates on April 30, 2023. We believe that our facilities are sufficient to meet our current needs and that suitable additional space will be available as and when needed.

Corporate Information

We were incorporated under the laws of the state of Delaware in November 2005 under the name WMR Biomedical, Inc. In July 2018, we changed our name to Lyra Therapeutics, Inc. Our principal executive offices are located at 480 Arsenal Way, Watertown, MA 02472 and our telephone number is (617) 393-4600. Our website address is www.lyratherapeutics.com. The information contained in, or accessible through, our website does not constitute a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

Legal Proceedings

We are not subject to any material legal proceedings.

MANAGEMENT

Executive Officers and Directors

The following table sets forth the name, age and position of each of our executive officers and directors as of the date of this prospectus.

<u>Name</u>	<u>Age</u>	<u>Position</u>
Executive Officers		
Maria Palasis, Ph.D.	55	President and Chief Executive Officer and Director
R. Don Elsey	66	Chief Financial Officer, Treasurer and Secretary
Dana Washburn, M.D.	57	Chief Medical Officer
Laura Edgerly-Pflug	56	Senior Vice President of Technical Operation
Corinne Noyes	52	Senior Vice President of Commercial Strategy and Market Development
Directors		
Michael Altman	37	Director
Edward Anderson	70	Director
Robert S. Langer, D.Sc.	71	Director
C. Ann Merrifield	68	Director
Konstantin Poukalov	36	Director
W. Bradford Smith	64	Director
George Whitesides, Ph.D.	80	Director

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

Executive Officers

Maria Palasis, Ph.D. has served as our President and Chief Executive Officer and a member of our board of directors since January 2015. Prior to her role with us as President and Chief Executive Officer, Dr. Palasis held positions of increasing responsibility, the most recent of which was Executive Vice President and Chief Technology Officer from 2011 to 2015. Before that, in 2008, Dr. Palasis joined Arsenal Medical, Inc., a biotechnology company, as Executive Vice President and subsequently served as President and Chief Executive Officer and a member of the board of directors of Arsenal Medical from January 2015 to June 2018. Before that, from November 1995 to January 2008, Dr. Palasis served as Director at Boston Scientific Corporation, a medical device company, where she managed a portfolio of external biotech and medical device investments and led the development of several combination therapies. Dr. Palasis holds a B.S. and Ph.D. in Chemical Engineering from the University of Cincinnati, and she held a postdoctoral fellowship in molecular biology at the University of Cincinnati School of Medicine. We believe that Dr. Palasis' experience in the industry and knowledge of our company qualifies her to serve on our board of directors.

R. Don Elsey has served as our Chief Financial Officer since August 2019 and as our Treasurer and Secretary since October 2019. Prior to joining our company, from February 2015 to February 2019, Mr. Elsey served as Chief Financial Officer at Senseonics, Inc., a medical device company. From May 2014 until February 2015, Mr. Elsey served as Chief Financial Officer of Regado Biosciences, Inc., a biopharmaceutical company. From December 2012 to February 2014, Mr. Elsey served as Chief Financial Officer of LifeCell Corporation, a privately held regenerative medicine company. Mr. Elsey holds a B.A. in economics and an M.B.A. in finance from Michigan State University.

Dana Washburn, M.D. has served as our Chief Medical Officer since October 2019. Prior to joining our company, from November 2012 to October 2019, Dr. Washburn served in positions of increasing responsibility

at Parexel International, a global contract research organization, most recently as Corporate Vice President, Head, Global Medical Services from 2015 to 2019, where he oversaw clinical research activities in support of client development programs. Before that, from April 2010 to November 2012, Dr. Washburn served in positions of increasing responsibility at Lantheus Medical Imaging, Inc., a medical imaging agent manufacturer, most recently serving as Chief Medical Officer from September 2011 to November 2012. Dr. Washburn holds a B.A. in biology from Dartmouth College and an M.D. from the University of Massachusetts Medical School.

Laura Edgerly-Pflug has served as our Senior Vice President of Technical Operations since July 2019. Prior to joining our company, from October 2016 to June 2019, Ms. Edgerly-Pflug served as Vice President of Manufacturing Operations and Quality Control at Adgero Biopharmaceuticals Holdings, Inc., a biopharmaceutical company, where she led the manufacturing, formulation, analytical, and quality control and assurance activities for the development of a therapeutic. Before that, from January 2014 to September 2016, Ms. Edgerly-Pflug was the Owner at Pflug BioPharm Solutions, a biopharmaceutical consulting firm, where she provided strategic direction and implementation to clients in the areas of manufacturing, quality assurance, new technologies, new products and life cycle initiatives. Before that, from June 2012 to December 2013, Ms. Edgerly-Pflug served as Vice President of Technical Operations and Chemistry, Manufacturing and Controls at Insmed Incorporated, formerly Transave Inc., a pharmaceutical company, where she was responsible for product development and manufacturing of sterile liposomal products from preclinical development through commercialization. From July 2006 to June 2012, she served as Executive Director of Technical Operations and Chemistry, Manufacturing and Controls at Insmed. Ms. Edgerly-Pflug earned a B.S. in Chemistry from Kean College of New Jersey.

Corinne Noyes has served as our Senior Vice President of Commercial Strategy and Market Development since September 2018. Prior to joining our company, from January 2018 to August 2018, Ms. Noyes served as an independent contractor to our Company, providing biopharmaceutical consulting services. Before that, from January 2005 to August 2018, Ms. Noyes worked as a strategic advisor and independent biopharmaceutical consultant providing commercial leadership to emerging life sciences companies, including, among others, AMAG Pharmaceuticals, Inc., Avila Therapeutics, Inc. (Celgene Corporation), Adnexus Therapeutics Inc. (Bristol-Myers Squibb Company), Constellation Pharmaceuticals, Inc., and Editas Medicine, Inc. Before that, from 1997 to 2004, Ms. Noyes held various commercial leadership positions at Biogen Inc., a biotechnology company. Prior to joining Biogen Inc., from 1992 to 1996, Ms. Noyes worked as a health care strategy consultant at Deloitte & Touche LLP. Ms. Noyes holds a B.A. in Humanities and a B.B.A. in Business from St. Mary's College of Notre Dame and an M.B.A. in finance from University of Chicago Graduate School of Business.

Non-Employee Directors

Michael Altman has served as a member of our board of directors since June 2018. Since 2007, Mr. Altman has been employed on the investment team at Perceptive Advisors, a life sciences focused investment firm, where he currently serves as Managing Director and focuses on medical devices, diagnostics, digital health and specialty pharmaceuticals investments. Since October 2018, Mr. Altman has also served as Chief Financial Officer and member of the board of directors of ARYA Sciences Acquisition Corp., a special purpose acquisition company. From October 2005 to October 2007, Mr. Altman served as a healthcare trader and analyst at First New York Securities. Mr. Altman has served on the board of directors of Vitruvius Therapeutics, Inc., a pharmaceutical company, since December 2017, and served on the board of directors of Vensun Pharmaceuticals, Inc., a pharmaceutical company, from November 2016 to January 2019. Mr. Altman holds a B.S. in Business Administration from the University of Vermont. We believe that Mr. Altman's broad operational and transactional experience qualifies him to serve on our board of directors.

Edward Anderson has served as a member of our board of directors since February 2019. Since June 1994, Mr. Anderson has served as the Founder and a Managing Partner at North Bridge Venture Partners & Growth Equity, a venture capital firm. Mr. Anderson holds a B.F.A. from the University of Denver and an

M.B.A. from Columbia University Graduate School of Business. We believe that Mr. Anderson's extensive experience in venture capital investments qualifies him to serve on our board of directors.

Robert S. Langer, D.Sc. has served as a member of our board of directors since March 2006. Since 2005, Dr. Langer has served as a David H. Koch Institute Professor at the Massachusetts Institute of Technology. Dr. Langer has served on the board of directors of Abpro Corporation, a biotechnology company, since December 2016 and since September 2016 on the board of directors of Frequency Therapeutics, Inc., a biotechnology company. Dr. Langer has also served on the board of directors of Rubius Therapeutics, Inc., a biopharmaceutical company, since December 2014 and since December 2010 on the board of directors of Moderna, Inc., a biopharmaceutical company. Dr. Langer has also served on the board of directors of Puretech Health plc, a biotechnology company, and previously served on the boards of directors of Momenta Pharmaceuticals, Inc., a biotechnology company, Wyeth Pharmaceuticals, a biopharmaceutical company, Kala Pharmaceuticals, Inc., a biopharmaceutical company, Fibrocell Science, Inc., a biotechnology company, and Millipore Corp., a life-sciences device manufacturer. Dr. Langer holds a D.Sc. in Chemical Engineering from the Massachusetts Institute of Technology and a B.S. in Chemical Engineering from Cornell University. We believe Dr. Langer's pioneering academic work, extensive medical and scientific knowledge, and experience serving on public company boards of directors qualify him to serve on our board of directors.

C. Ann Merrifield has served as a member of our board of directors since September 2019. Ms. Merrifield has also served as a member of the boards of directors for a portfolio of public and private companies in the life sciences sector which include Flexion Therapeutics, Inc., since June 2014, InVivo Therapeutics Holdings Corp., since November 2014 and Veritas Genetics Inc., since December 2016. From July 2015 to August 2018, she served as a director of Juniper Pharmaceuticals, Inc., until it was acquired by Catalent, Inc. Ms. Merrifield also serves as a Trustee for MassMutual Premier, Select and MML Series Investment Funds, Partners Continuing Care (the post-acute care services division of Partners HealthCare) and the Huntington Theatre Company. From November 2012 to July 2014, Ms. Merrifield served as President, Chief Executive Officer and director of PathoGenetix Inc., a genomics company, which voluntarily filed for Chapter 7 bankruptcy in July 2014. Before that, Ms. Merrifield spent 18 years at Genzyme Corporation, serving in several leadership roles, including President of Genzyme Biosurgery, President of Genzyme Genetics and Senior Vice President, Business Excellence. Ms. Merrifield holds a B.A. in Zoology and a Master of Education from the University of Maine and an M.B.A. from the Tuck School of Business at Dartmouth College. We believe that Ms. Merrifield's extensive industry experience qualifies her to serve on our board of directors.

Konstantin Poukalov has served as a member of our board of directors since January 2020. Since March 2019, Mr. Poukalov has served as Managing Director at Perceptive Advisors, a life sciences focused investment firm. Since August 2019, Mr. Poukalov has also served on the board of directors of Landos Biopharma, Inc., a biopharmaceutical company. From July 2012 to October 2018, Mr. Poukalov served in roles of increasing responsibility at Kadmon Holdings, Inc., a biopharmaceutical company, most recently serving as Executive Vice President and Chief Financial Officer from July 2014 to October 2018. Mr. Poukalov holds a B.S. in Electrical Engineering from Stony Brook University. We believe that Mr. Poukalov's extensive financial and industry experience qualify him to serve on our board of directors.

W. Bradford Smith has served a member of our board of directors since November 2019. Mr. Smith has served as Chief Financial Officer and Treasurer of Homology Medicines, Inc., a genetic medicines company, since April 2017 and as Secretary since July 2017. From March 2014 to April 2017, Mr. Smith was Chief Financial Officer of Ocular Therapeutix, Inc., a biopharmaceutical company. Prior to joining Ocular Therapeutix, Mr. Smith served as Chief Financial Officer of OmniGuide, Inc., a medical device company, from July 2008 to March 2014. Mr. Smith holds a B.S. in Biology from Tufts University and an M.B.A. from the Whittemore School of Business and Economics at the University of New Hampshire. We believe that Mr. Smith's extensive financial and industry experience qualify him to serve on our board of directors.

George Whitesides, Ph.D. has served as a member of our board of directors since March 2006. Since 2004, he has served as the Woodford L. and Ann A. Flowers University Professor at Harvard University.

Dr. Whitesides joined Harvard's department of chemistry in 1982 and served as department chairman from 1986 to 1989. From 1963 to 1982, he was a faculty member at the Massachusetts Institute of Technology. Dr. Whitesides held advisory positions on the National Research Council, National Science Foundation and the Department of Defense's Defense Advanced Research Projects Agency (DARPA), and is a member of the American Academy of Arts and Sciences, National Academy of Sciences, National Academy of Engineering and the American Philosophical Society, among other organizations. Dr. Whitesides has served on the board of directors of Theravance Biopharma, Inc., a biopharmaceutical company, since October 2013. Dr. Whitesides is also a co-founder of a number of companies, including Genzyme Corporation, GelTex Pharmaceuticals Inc., Theravance Biopharma, Inc., Soft Robotics Inc. and Arsenal Medical, Inc. Dr. Whitesides holds an A.B. from Harvard University and a Ph.D. in chemistry from the California Institute of Technology. We believe that Dr. Whitesides' extensive scientific and industry experience qualifies him to serve on our board of directors.

Board Composition and Election of Directors

Director Independence

Our board of directors currently consists of _____ members. Our board of directors has determined that, of our _____ directors, _____, _____, _____, _____ and _____ do not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the rules of The Nasdaq Stock Market LLC, or Nasdaq. There are no family relationships among any of our directors or executive officers.

Classified Board of Directors

In accordance with our restated certificate of incorporation that will go into effect upon the closing of this offering, our board of directors will be divided into three classes with staggered, three-year terms. At each annual meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. Effective upon the closing of this offering, our directors will be divided among the three classes as follows:

- the Class I directors will be _____, _____ and _____, and their terms will expire at our first annual meeting of stockholders following this offering;
- the Class II directors will be _____, _____ and _____, and their terms will expire at our second annual meeting of stockholders following this offering; and
- the Class III directors will be _____, _____ and _____, and their terms will expire at the third annual meeting of stockholders following this offering.

Our restated certificate of incorporation that will go into effect upon the closing of this offering will provide that the authorized number of directors may be changed only by resolution of the board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change in control of our company. Our directors may be removed only for cause by the affirmative vote of the holders of at least two-thirds of our outstanding voting stock entitled to vote in the election of directors.

Our directors were elected to and currently serve on the board pursuant to a voting agreement among us and several of our largest stockholders. See "Certain Relationships and Related Party Transactions—Voting Agreement." This agreement will terminate upon the closing of this offering, after which there will be no further contractual obligations regarding the election of our directors.

Board Leadership Structure

Our board of directors is currently chaired by . Our corporate governance guidelines provide that, if the chairman of the board is a member of management or does not otherwise qualify as independent, the independent directors of the board may elect a lead director. currently serves as our lead director. The lead director's responsibilities include, but are not limited to: presiding over all meetings of the board of directors at which the chairman is not present, including any executive sessions of the independent directors; approving board meeting schedules and agendas; and acting as the liaison between the independent directors and the chief executive officer and chairman of the board. Our corporate governance guidelines further provide the flexibility for our board of directors to modify our leadership structure in the future as it deems appropriate.

Role of the Board in Risk Oversight

One of the key functions of our board of directors is informed oversight of our risk management process. Our board of directors does not have a standing risk management committee, but rather administers this oversight function directly through our board of directors as a whole, as well as through various standing committees of our board of directors that address risks inherent in their respective areas of oversight. In particular, our board of directors is responsible for monitoring and assessing strategic risk exposure and our audit committee has the responsibility to consider and discuss our major financial risk exposures and the steps our management has taken to monitor and control these exposures, including guidelines and policies to govern the process by which risk assessment and management is undertaken. Our audit committee also monitors compliance with legal and regulatory requirements. Our nominating and corporate governance committee monitors the effectiveness of our corporate governance practices, including whether they are successful in preventing illegal or improper liability-creating conduct. Our compensation committee assesses and monitors whether any of our compensation policies and programs has the potential to encourage excessive risk-taking. While each committee is responsible for evaluating certain risks and overseeing the management of such risks, our entire board of directors is regularly informed through committee reports about such risks.

Board Committees

Our board of directors has an audit committee, a compensation committee and a nominating and corporate governance committee, each of which has the composition and the responsibilities described below. In addition, from time to time, special committees may be established under the direction of our board of directors when necessary to address specific issues.

Each of the three standing committees—audit, compensation and nominating and corporate governance—operate under a charter that has been approved by our board of directors. Upon our listing on The Nasdaq Global Market, each committee's charter will be available under the Corporate Governance section of our website at www.lyratherapeutics.com. The reference to our website address does not constitute incorporation by reference of the information contained at or available through our website, and you should not consider it to be a part of this prospectus.

Audit Committee

The audit committee's responsibilities include, among other things:

- appointing, approving the compensation of, and assessing the independence of our registered public accounting firm;
- overseeing the work of our registered public accounting firm, including through the receipt and consideration of reports from such firm;

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- reviewing and discussing with management and the registered public accounting firm our annual and quarterly financial statements and related disclosures;
- coordinating our board of directors' oversight of our internal control over financial reporting, disclosure controls and procedures and code of business conduct and ethics;
- discussing our risk management policies;
- meeting independently with our internal auditing staff, if any, registered public accounting firm and management;
- reviewing and approving or ratifying any related person transactions; and
- preparing the audit committee report required by Securities Exchange Commission, or SEC, rules.

The members of our audit committee are _____, _____ and _____ serves as the chairperson of the committee. All members of our audit committee meet the requirements for financial literacy under the applicable listing rules of Nasdaq, or the Nasdaq rules. Our board of directors has determined that each of these individuals meets the independence requirements of Rule 10A-3 under the Exchange Act and the applicable Nasdaq rules. Each member of our audit committee can read and understand fundamental financial statements in accordance with the Nasdaq audit committee requirements. In arriving at this determination, the board has examined each audit committee member's scope of experience and the nature of their prior and/or current employment. Our board of directors has determined that _____ is an "audit committee financial expert" as defined by applicable SEC rules and has the requisite financial sophistication as defined under the applicable Nasdaq rules.

We believe that the composition and functioning of our audit committee complies with all applicable requirements of the Sarbanes-Oxley Act, and all applicable SEC and Nasdaq rules and regulations. We intend to comply with future requirements to the extent they become applicable to us.

Compensation Committee

The compensation committee's responsibilities include, among other things:

- reviewing and approving, or recommending for approval by the board of directors, the compensation of our CEO and our other executive officers;
- overseeing and administering our cash and equity incentive plans;
- reviewing and making recommendations to our board of directors with respect to director compensation;
- reviewing and discussing annually with management our "Compensation Discussion and Analysis," to the extent required; and
- preparing the annual compensation committee report required by SEC rules, to the extent required.

The members of our compensation committee are _____, _____ and _____ serves as the chairperson of the committee. Our board of directors has determined that each of _____, _____ and _____ is independent under the applicable Nasdaq rules, including the Nasdaq rules specific to membership on the compensation committee, and _____ is a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act.

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We believe that the composition and functioning of our compensation committee complies with all applicable requirements of the Sarbanes-Oxley Act, and all applicable SEC and Nasdaq rules and regulations. We intend to comply with future requirements to the extent they become applicable to us.

Nominating and Corporate Governance Committee

The nominating and corporate governance committee's responsibilities include, among other things:

- identifying individuals qualified to become board members;
- recommending to our board of directors the persons to be nominated for election as directors and to each board committee;
- developing and recommending to our board of directors corporate governance guidelines, and reviewing and recommending to our board of directors proposed changes to our corporate governance guidelines from time to time; and
- overseeing a periodic evaluation of our board of directors.

The members of our nominating and corporate governance committee are _____, _____ and _____ serves as the chairperson of the committee. Our board of directors has determined that _____, _____ and _____ are independent under the applicable Nasdaq rules and the SEC rules and regulations.

Compensation Committee Interlocks and Insider Participation

No member of our compensation committee is or has been our current or former officer or employee. None of our executive officers currently serves, or in the past year has served, as a director or a member of a compensation committee (or other committee serving an equivalent function) of any other entity, one of whose executive officers served as a director or member of our compensation committee.

Code of Ethics and Code of Conduct

We have adopted a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. Upon our listing on The Nasdaq Global Market, our code of business conduct and ethics will be available under the Corporate Governance section of our website at www.lyratherapeutics.com. In addition, we intend to post on our website all disclosures that are required by law or the Nasdaq rules concerning any amendments to, or waivers from, any provision of the code. The reference to our website address does not constitute incorporation by reference of the information contained at or available through our website, and you should not consider it to be a part of this prospectus.

EXECUTIVE AND DIRECTOR COMPENSATION

This section discusses the material components of the executive compensation program for our executive officers who are named in the “2019 Summary Compensation Table” below. In 2019, our “named executive officers” and their positions were as follows:

- Maria Palasis, Ph.D., President and Chief Executive Officer;
- R. Don Elsey, Chief Financial Officer; and
- Laura Edgerly-Pflug, Senior Vice President of Technical Operations.

This discussion may contain forward-looking statements that are based on our current plans, considerations, expectations and determinations regarding future compensation programs. Actual compensation programs that we adopt following the completion of this offering may differ materially from the currently planned programs summarized in this discussion.

2019 Summary Compensation Table

The following table sets forth information concerning the compensation of our named executive officers for the year ended December 31, 2019.

<u>Name and Principal Position</u>	<u>Year</u>	<u>Salary (\$)</u>	<u>Bonus (\$)</u>	<u>Option Awards (\$)(1)</u>	<u>Non-Equity Incentive Plan Compensation (\$)(2)</u>	<u>All Other Compensation (\$)</u>	<u>Total (\$)</u>
Maria Palasis, Ph.D. <i>President and Chief Executive Officer</i>	2019	388,025	—	318,850	135,809	—	842,684
R. Don Elsey <i>Chief Financial Officer</i>	2019	130,625(3)	—	501,247	41,671	54,934(4)	728,477
Laura Edgerly-Pflug <i>Senior Vice President of Technical Operations</i>	2019	152,923(3)	50,000(5)	43,687	40,658	29,158(6)	316,426

- (1) Amounts represent the full grant date fair value of stock options granted during 2019 computed in accordance with ASC Topic 718, rather than the amounts paid to or realized by the named individual. We provide information regarding the assumptions used to calculate the value of all option awards made to named executive officers in Note 8 to the consolidated financial statements included in this prospectus.
- (2) Amounts represent discretionary performance-based annual cash bonuses made by our board for the named executive officers for fiscal year 2019.
- (3) Mr. Elsey commenced employment with us in July 2019, and Ms. Edgerly-Pflug commenced employment with us in a part-time capacity in June 2019 and in a full-time capacity in July 2019.
- (4) Amount represents use of a corporate apartment, commuting expenses and related tax gross-ups.
- (5) Amount represents a signing bonus.
- (6) Amount represents reimbursement of commuting expenses and related tax gross-up.

Narrative to Summary Compensation Table

2019 Salaries

The named executive officers receive a base salary to provide a fixed component of compensation reflecting the executive's skill set, experience, role and responsibilities. For 2019, our board of directors established an annual base salary of \$388,025 for Dr. Palasis, effective January 1, 2019. Mr. Elsey's and Ms. Edgerly-Pflug's 2019 annual base salaries were \$325,000 and \$280,000, respectively, and were established by our board of directors in connection with their commencing employment with us. During the period in which Ms. Edgerly-Pflug was employed with us in a part-time capacity, her annual base salary was \$140,000.

2019 Bonuses

We offer our named executive officers the opportunity to earn annual cash bonuses to compensate them for attaining short-term company goals as approved by our board of directors. For 2019, bonuses were based entirely on (i) completing steps towards a Phase 2 LANTERN trial for LYR-210 and attaining other value-driving milestones, (ii) attaining corporate goals relating to overall business development and fundraising and (iii) building an executive team and board of directors, with these categories weighted at 30%, 50% and 20%, respectively. The 2019 target bonuses for each of Dr. Palasis, Mr. Elsey and Ms. Edgerly-Pflug were 35%, 30% and 25%, respectively, of his or her annual base salary. The target cash bonuses for Mr. Elsey and Ms. Edgerly-Pflug were prorated from their respective dates of hire. The actual annual cash bonuses awarded to each named executive officer for 2019 performance are set forth above in the 2019 Summary Compensation Table in the column titled "Non-Equity Incentive Plan Compensation".

Equity Compensation

We offer stock options to our employees, including our named executive officers, as the long-term incentive component of our compensation program. Our stock options generally allow employees to purchase shares of our common stock at a price equal to the fair market value of our common stock on the date of grant, as determined by the board of directors. With respect to grants made in connection with the commencement of employment, our stock options typically vest as to 25% of the underlying shares on the first anniversary of the vesting commencement date and in equal monthly installments over the following three years, subject to the holder's continued employment with us. From time to time, our board of directors may also construct alternate vesting schedules as it determines are appropriate to motivate particular employees. Historically, our stock options have been intended to qualify as "incentive stock options" to the extent permitted under the Internal Revenue Code.

The following table sets forth the stock options granted to our named executive officers in during 2019.

<u>Named Executive Officer</u>	<u>2019 Stock Options Granted</u>
Maria Palasis, Ph.D.	5,877,861
R. Don Elsey	2,578,761
Laura Edgerly-Pflug	500,000

These options were granted under our 2016 Equity Incentive Plan, which we refer to as the 2016 Plan, with exercise prices equal to the fair market value of our common stock on the date of grant, as determined by the board of directors, and with respect to Dr. Palasis, vest in equal monthly installments over four years following the vesting commencement date and with respect to Mr. Elsey and Ms. Edgerly-Pflug, subject to our standard vesting schedule for grants made in connection with the commencement of employment described above.

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In connection with this offering, we intend to adopt a 2020 Incentive Award Plan, referred to below as the 2020 Plan, in order to facilitate the grant of cash and equity incentives to directors, employees (including our named executive officers) and consultants of our company and to enable our company to obtain and retain services of these individuals. Following the effective date of the 2020 Plan, we will not make any further grants under the 2016 Plan. However, the 2016 Plan will continue to govern the terms and conditions of the outstanding awards granted under it. For additional information about the 2020 Plan, please see the section titled “Incentive Compensation Plans” below.

Other Elements of Compensation

Retirement Plan

We maintain a 401(k) retirement savings plan for our employees, including our named executive officers, who satisfy certain eligibility requirements. Our named executive officers are eligible to participate in the 401(k) plan on the same terms as other full-time employees. We believe that providing a vehicle for tax-deferred retirement savings through our 401(k) plan adds to the overall desirability of our executive compensation package and further incentivizes our employees, including our named executive officers, in accordance with our compensation policies.

Employee Benefits and Perquisites

All of our full-time employees, including our named executive officers, are eligible to participate in our employee benefit plans and programs, including medical, dental, and vision benefits, health spending accounts, and short- and long-term disability, accidental death and dismemberment, and life insurance, to the same extent as our other full-time employees, subject to the terms and eligibility requirements of those plans. For 2019, we did not provide an employer matching contribution under our 401(k) plan.

Outstanding Equity Awards at 2019 Fiscal Year-End

The following table summarizes the number of shares of common stock underlying outstanding equity incentive plan awards for each named executive officer as of December 31, 2019.

<u>Name</u>	<u>Vesting Commencement Date</u>	<u>Number of Securities Underlying Unexercised Options (#) Exercisable</u>	<u>Number of Securities Underlying Unexercised Options (#) Unexercisable</u>	<u>Option Awards</u>		
				<u>Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Options (#)</u>	<u>Option Exercise Price (\$)</u>	<u>Option Expiration Date</u>
Maria Palasis, Ph.D.	11/16/2011	786,000	—	—	0.25	11/16/2021
	2/26/2013	840,000	—	—	0.63	6/26/2023
	1/1/2015	3,251,326	—	—	0.66	9/23/2025
	6/13/2017	1,083,775	—	1,083,775 ⁽²⁾	0.05	6/13/2027
	3/6/2019	1,102,098	4,775,763 ⁽¹⁾	—	0.08	3/6/2029
R. Don Elsey	7/29/2019	—	2,578,761 ⁽³⁾	—	0.13	9/24/2029
Laura Edgerly-Pflug	6/3/2019	—	500,000 ⁽³⁾	—	0.13	6/20/2029

- (1) Options vest and become exercisable in equal monthly installments over four years following the vesting commencement date, subject to Dr. Palasis' continued employment with us on each applicable vesting date.
- (2) Options vest and become exercisable at the end of any given three-month period occurring prior to six years from the vesting commencement date in which we recognize revenue from the commercial sale of an FDA-

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approved product each month and in amounts, with respect to the second and third months of such period that increase from the revenue recognized from such product sales in the immediately preceding month, subject to Dr. Palasis' continued employment with us on each applicable vesting date.

- (3) Options vest and become exercisable as to 25% of the underlying shares on the first anniversary of the vesting commencement date and in 36 equal monthly installments over the following three years, subject to the named executive officer's continued employment with us on each applicable vesting date.

Executive Compensation Arrangements

In connection with this offering, we intend to enter into employment agreements with each named executive officer that will supersede their current compensation arrangements and become effective on the effectiveness of the registration statement of which this prospectus is a part. The terms of those arrangements are not currently known.

Director Compensation

2019 Director Compensation Table

<u>Name</u>	<u>Fees Earned or Paid in Cash (\$)</u>	<u>Option Awards (\$)(1)</u>	<u>Total (\$)</u>
Robert Langer D.Sc.	\$25,000	—	\$25,000
George Whitesides Ph.D.	\$25,000	—	\$25,000
Michael Altman	—	—	—
C. Ann Merrifield	\$ 6,904	\$22,911	\$29,815
Edward Anderson	—	—	—
W. Bradford Smith	\$ 2,356	—	\$ 2,356
Konstantin Poukalov	—	—	—

- (1) Amounts reflect the full grant-date fair value of stock awards and stock options granted during 2019 computed in accordance with ASC Topic 718, rather than the amounts paid to or realized by the named individual. We provide information regarding the assumptions used to calculate the value of all stock awards and option awards made to our directors in Note 8 to the consolidated financial statements included in this prospectus.

The table below shows the aggregate numbers of option awards (exercisable and unexercisable) held as of December 31, 2019 by each non-employee director who was serving as of December 31, 2019. None of our non-employee directors held unvested stock awards as of December 31, 2019.

<u>Name</u>	<u>Options Outstanding at Fiscal Year End</u>
Robert Langer D.Sc.	3,692,637
George Whitesides Ph.D.	3,192,637
Michael Altman	—
C. Ann Merrifield	120,000
Edward Anderson	—
W. Bradford Smith	—
Konstantin Poukalov	—

We intend to approve and implement a compensation program for our non-employee directors that consists of annual retainer fees and long-term equity awards. The terms of this program are not currently known.

Incentive Compensation Plans

The following summarizes the material terms of 2020 Plan and the 2020 Employee Stock Purchase Plan, which will be the long-term incentive compensation plans in which our directors and named executive officers are eligible to participate following the consummation of this offering, and the 2016 Plan, under which we have previously made periodic grants of equity and equity-based awards to our directors and named executive officers.

2020 Incentive Award Plan

Effective the day prior to the first public trading date of our common stock, we intend to adopt and ask our stockholders to approve the 2020 Plan, under which we may grant cash and equity-based incentive awards to eligible service providers in order to attract, retain and motivate the persons who make important contributions to our company. The material terms of the 2020 Plan are summarized below.

Eligibility and Administration

Our employees, consultants and directors, and employees and consultants of our subsidiaries, will be eligible to receive awards under the 2020 Plan. The 2020 Plan will be administered by our board of directors, which may delegate its duties and responsibilities to one or more committees of our directors and/or officers (referred to collectively as the plan administrator below), subject to the limitations imposed under the 2020 Plan, Section 16 of the Exchange Act, stock exchange rules and other applicable laws. The plan administrator will have the authority to take all actions and make all determinations under the 2020 Plan, to interpret the 2020 Plan and award agreements and to adopt, amend and repeal rules for the administration of the 2020 Plan as it deems advisable. The plan administrator will also have the authority to grant awards, determine which eligible service providers receive awards and set the terms and conditions of all awards under the 2020 Plan, including any vesting and vesting acceleration provisions, subject to the conditions and limitations in the 2020 Plan.

Shares Available for Awards

An aggregate of _____ shares of our common stock will initially be available for issuance under the 2020 Plan. The number of shares initially available for issuance will be increased by an annual increase on January 1 of each calendar year beginning in 2021 and ending in and including 2030, equal to the lesser of (A) _____ % of the shares of common stock outstanding on the final day of the immediately preceding calendar year and (B) a smaller number of shares determined by our board of directors. No more than _____ shares of common stock may be issued under the 2020 Plan upon the exercise of incentive stock options. Shares issued under the 2020 Plan may be authorized but unissued shares, shares purchased on the open market or treasury shares.

If an award under the 2020 Plan or the 2016 Plan, expires, lapses or is terminated, exchanged for cash, surrendered, repurchased, canceled without having been fully exercised or forfeited, any unused shares subject to the award will, as applicable, become or again be available for new grants under the 2020 Plan. Awards granted under the 2020 Plan in substitution for any options or other stock or stock-based awards granted by an entity before the entity's merger or consolidation with us or our acquisition of the entity's property or stock will not reduce the shares available for grant under the 2020 Plan, but may count against the maximum number of shares that may be issued upon the exercise of incentive stock options, or ISOs.

Awards

The 2020 Plan provides for the grant of stock options, including ISOs, and nonqualified stock options, or NSOs, stock appreciation rights, or SARs, restricted stock, dividend equivalents, restricted stock units, or RSUs, and other stock or cash based awards. Certain awards under the 2020 Plan may constitute or provide for payment of "nonqualified deferred compensation" under Section 409A of the Code. All awards under the 2020 Plan will be set

forth in award agreements, which will detail the terms and conditions of awards, including any applicable vesting and payment terms and post-termination exercise limitations. A brief description of each award type follows.

- **Stock Options and SARs.** Stock options provide for the purchase of shares of our common stock in the future at an exercise price set on the grant date. ISOs, by contrast to NSOs, may provide tax deferral beyond exercise and favorable capital gains tax treatment to their holders if certain holding period and other requirements of the Code are satisfied. SARs entitle their holder, upon exercise, to receive from us an amount equal to the appreciation of the shares subject to the award between the grant date and the exercise date. The plan administrator will determine the number of shares covered by each option and SAR, the exercise price of each option and SAR and the conditions and limitations applicable to the exercise of each option and SAR. The exercise price of a stock option or SAR will not be less than 100% of the fair market value of the underlying share on the grant date (or 110% in the case of ISOs granted to certain significant stockholders), except with respect to certain substitute awards granted in connection with a corporate transaction. The term of a stock option or SAR may not be longer than ten years (or five years in the case of ISOs granted to certain significant stockholders).
- **Restricted Stock and RSUs.** Restricted stock is an award of nontransferable shares of our common stock that remain forfeitable unless and until specified conditions are met and which may be subject to a purchase price. RSUs are contractual promises to deliver shares of our common stock in the future, which may also remain forfeitable unless and until specified conditions are met and may be accompanied by the right to receive the equivalent value of dividends paid on shares of our common stock prior to the delivery of the underlying shares. The plan administrator may provide that the delivery of the shares underlying RSUs will be deferred on a mandatory basis or at the election of the participant. The terms and conditions applicable to restricted stock and RSUs will be determined by the plan administrator, subject to the conditions and limitations contained in the 2020 Plan.
- **Other Stock or Cash Based Awards.** Other stock or cash based awards are awards of cash, fully vested shares of our common stock and other awards valued wholly or partially by referring to, or otherwise based on, shares of our common stock or other property. Other stock or cash based awards may be granted to participants and may also be available as a payment form in the settlement of other awards, as standalone payments and as payment in lieu of compensation to which a participant is otherwise entitled. The plan administrator will determine the terms and conditions of other stock or cash based awards, which may include any purchase price, performance goal, transfer restrictions and vesting conditions.

Performance Criteria

The plan administrator may select performance criteria for an award to establish performance goals for a performance period. Performance criteria under the 2020 Plan may include, but are not limited to, the following: net earnings or losses (either before or after one or more of interest, taxes, depreciation, amortization, and non-cash equity-based compensation expense); gross or net sales or revenue or sales or revenue growth; net income (either before or after taxes) or adjusted net income; profits (including but not limited to gross profits, net profits, profit growth, net operation profit or economic profit), profit return ratios or operating margin; budget or operating earnings (either before or after taxes or before or after allocation of corporate overhead and bonus); cash flow (including operating cash flow and free cash flow or cash flow return on capital); return on assets; return on capital or invested capital; cost of capital; return on stockholders' equity; total stockholder return; return on sales; costs, reductions in costs and cost control measures; expenses; working capital; earnings or loss per share; adjusted earnings or loss per share; price per share or dividends per share (or appreciation in or maintenance of such price or dividends); regulatory achievements or compliance; implementation, completion or attainment of objectives relating to research, development, regulatory, commercial, or strategic milestones or

developments; market share; economic value or economic value added models; division, group or corporate financial goals; customer satisfaction/growth; customer service; employee satisfaction; recruitment and maintenance of personnel; human resources management; supervision of litigation and other legal matters; strategic partnerships and transactions; financial ratios (including those measuring liquidity, activity, profitability or leverage); debt levels or reductions; sales-related goals; financing and other capital raising transactions; cash on hand; acquisition activity; investment sourcing activity; and marketing initiatives, any of which may be measured in absolute terms or as compared to any incremental increase or decrease. Such performance goals also may be based solely by reference to the company's performance or the performance of a subsidiary, division, business segment or business unit of the company or a subsidiary, or based upon performance relative to performance of other companies or upon comparisons of any of the indicators of performance relative to performance of other companies. When determining performance goals, the plan administrator may provide for exclusion of the impact of an event or occurrence which the plan administrator determines should appropriately be excluded, including, without limitation, non-recurring charges or events, acquisitions or divestitures, changes in the corporate or capital structure, events unrelated to the business or outside of the control of management, foreign exchange considerations, and legal, regulatory, tax or accounting changes.

Certain Transactions

In connection with certain corporate transactions and events affecting our common stock, including a change in control, or change in any applicable laws or accounting principles, the plan administrator has broad discretion to take action under the 2020 Plan to prevent the dilution or enlargement of intended benefits, facilitate the transaction or event or give effect to the change in applicable laws or accounting principles. This includes canceling awards for cash or property, accelerating the vesting of awards, providing for the assumption or substitution of awards by a successor entity, adjusting the number and type of shares subject to outstanding awards and/or with respect to which awards may be granted under the 2020 Plan and replacing or terminating awards under the 2020 Plan. In addition, in the event of certain non-reciprocal transactions with our stockholders, the plan administrator will make equitable adjustments to awards outstanding under the 2020 Plan as it deems appropriate to reflect the transaction.

Provisions of the 2020 Plan Relating to Director Compensation.

The 2020 Plan provides that the plan administrator may establish compensation for non-employee directors from time to time subject to the 2020 Plan's limitations. Prior to commencing this offering, we intend to approve and implement a compensation program for our non-employee directors, which is described above under the heading "Director Compensation." Our board of directors or its authorized committee may modify the non-employee director compensation program from time to time in the exercise of its business judgment, taking into account such factors, circumstances and considerations as it shall deem relevant from time to time, provided that the sum of any cash compensation or other compensation and the grant date fair value of any equity awards granted under the 2020 Plan as compensation for services as a non-employee director during any fiscal year may not exceed \$ in the fiscal year of the non-employee director's initial service and \$ in any other fiscal year. The plan administrator may make exceptions to this limit for individual non-employee directors in extraordinary circumstances, as the plan administrator may determine in its discretion, subject to the limitations in the 2020 Plan.

Plan Amendment and Termination

Our board of directors may amend or terminate the 2020 Plan at any time; however, no amendment, other than an amendment that increases the number of shares available under the 2020 Plan, may materially and adversely affect an award outstanding under the 2020 Plan without the consent of the affected participant and stockholder approval will be obtained for any amendment to the extent necessary to comply with applicable laws. Further, the plan administrator may, without the approval of our stockholders, amend any outstanding stock option or SAR to reduce its price per share, other than in the context of corporate transactions or equity

restructurings, as described above. The 2020 Plan will remain in effect until the tenth anniversary of its effective date, unless earlier terminated by our board of directors. No awards may be granted under the 2020 Plan after its termination.

Foreign Participants, Claw-Back Provisions, Transferability and Participant Payments

The plan administrator may modify awards granted to participants who are foreign nationals or employed outside the United States or establish subplans or procedures to address differences in laws, rules, regulations or customs of such foreign jurisdictions. All awards will be subject to any company claw-back policy as set forth in such claw-back policy or the applicable award agreement. Except as the plan administrator may determine or provide in an award agreement, awards under the 2020 Plan are generally non-transferrable, except by will or the laws of descent and distribution, or, subject to the plan administrator's consent, pursuant to a domestic relations order, and are generally exercisable only by the participant. With regard to tax withholding obligations arising in connection with awards under the 2020 Plan and exercise price obligations arising in connection with the exercise of stock options under the 2020 Plan, the plan administrator may, in its discretion, accept cash, wire transfer or check, shares of our common stock that meet specified conditions, a promissory note, a "market sell order," such other consideration as the plan administrator deems suitable or any combination of the foregoing.

2020 Employee Stock Purchase Plan

Effective the day prior to the first public trading date of our common stock, we intend to adopt and ask our stockholders to approve the 2020 Employee Stock Purchase Plan, or the 2020 ESPP, the material terms of which are summarized below.

Shares Available for Awards; Administration

A total of _____ shares of our common stock will initially be reserved for issuance under the 2020 ESPP. In addition, the number of shares available for issuance under the 2020 ESPP will be annually increased on January 1 of each calendar year beginning in 2021 and ending in and including 2030, by an amount equal to the lesser of (A) _____ % of the shares outstanding on the final day of the immediately preceding calendar year and (B) such smaller number of shares as is determined by our board of directors, provided that no more than _____ shares of our common stock may be issued under the 2020 ESPP. Our board of directors or a committee of our board of directors will administer and will have authority to interpret the terms of the 2020 ESPP and determine eligibility of participants. We expect that the compensation committee will be the initial administrator of the 2020 ESPP.

Eligibility

All of our employees are eligible to participate in the 2020 ESPP. However, an employee may not be granted rights to purchase stock under our 2020 ESPP if the employee, immediately after the grant, would own (directly or through attribution) stock possessing 5% or more of the total combined voting power or value of all classes of our stock.

Grant of Rights

The 2020 ESPP is intended to qualify under Section 423 of the Code and stock will be offered under the 2020 ESPP during offering periods. The length of the offering periods under the 2020 ESPP will be determined by the plan administrator and may be up to twenty-seven months long. Employee payroll deductions will be used to purchase shares on each purchase date during an offering period. The purchase dates for each offering period will be the final trading day in the offering period. Offering periods under the 2020 ESPP will commence when determined by the plan administrator. The plan administrator may, in its discretion, modify the terms of future offering periods.

The 2020 ESPP permits participants to purchase common stock through payroll deductions of up to a specified percentage of their eligible compensation. The plan administrator will establish a maximum number of shares that may be purchased by a participant during any offering period. In addition, no employee will be permitted to accrue the right to purchase stock under the 2020 ESPP at a rate in excess of \$25,000 worth of shares during any calendar year during which such a purchase right is outstanding (based on the fair market value per share of our common stock as of the first day of the offering period).

On the first trading day of each offering period, each participant will automatically be granted an option to purchase shares of our common stock. The option will expire at the end of the applicable offering period, and will be exercised at that time to the extent of the payroll deductions accumulated during the offering period. The purchase price of the shares, in the absence of a contrary designation, will be 85% of the lower of the fair market value of our common stock on the first trading day of the offering period or on the purchase date. Participants may voluntarily end their participation in the 2020 ESPP at any time during a specified period prior to the end of the applicable offering period, and will be paid their accrued payroll deductions that have not yet been used to purchase shares of common stock. Participation ends automatically upon a participant's termination of employment.

A participant may not transfer rights granted under the 2020 ESPP other than by will or the laws of descent and distribution, and are generally exercisable only by the participant.

Certain Transactions

In the event of certain non-reciprocal transactions or events affecting our common stock, the plan administrator will make equitable adjustments to the 2020 ESPP and outstanding rights. In the event of certain unusual or non-recurring events or transactions, including a change in control, the plan administrator may provide for (1) either the replacement of outstanding rights with other rights or property or termination of outstanding rights in exchange for cash, (2) the assumption or substitution of outstanding rights by the successor or survivor corporation or parent or subsidiary thereof, if any, (3) the adjustment in the number and type of shares of stock subject to outstanding rights, (4) the use of participants' accumulated payroll deductions to purchase stock on a new purchase date prior to the next scheduled purchase date and termination of any rights under ongoing offering periods or (5) the termination of all outstanding rights.

Plan Amendment

The plan administrator may amend, suspend or terminate the 2020 ESPP at any time. However, stockholder approval will be obtained for any amendment that increases the aggregate number or changes the type of shares that may be sold pursuant to rights under the 2020 ESPP, changes the corporations or classes of corporations whose employees are eligible to participate in the 2020 ESPP or changes the 2020 ESPP in any manner that would cause the 2020 ESPP to no longer be an employee stock purchase plan within the meaning of Section 423(b) of the Code.

2016 Plan

Our board of directors adopted our 2016 Plan in February 2016, and our stockholders approved our 2016 Plan in June 2016. Following the effectiveness of the 2020 Plan, we will cease granting additional awards under our 2016 Plan. However, our 2016 Plan will continue to govern the terms and conditions of the outstanding stock option awards previously granted thereunder.

Share Reserve. As of December 31, 2019, stock options covering 19,759,224 shares with a weighted-average exercise price of \$0.08 per share and no shares of restricted stock were outstanding under our 2016 Plan, and 13,249,002 shares of our common stock remained available for the future grant of awards under our 2016 Plan. If an option granted under our 2016 Plan expires, lapses or is terminated, exchanged for cash, surrendered, repurchased, canceled without having been fully exercised or forfeited, in each case after effectiveness of the 2020 Plan, any unused shares subject to the option will become available for issuance under our 2020 Plan.

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Administration. Our board of directors or a committee delegated by our board of directors administers our 2016 Plan. Subject to the terms of our 2016 Plan, the administrator has the power to, among other things, determine who will be granted awards, to determine the terms and conditions of each award (including the number of shares, exercise price, if any, and any vesting conditions), to accelerate the time(s) when an award may vest or be exercised and to construe and interpret the terms of our 2016 Plan and awards granted thereunder.

Options and Restricted Stock. Options and restricted stock granted under our 2016 Plan may be granted subject to terms and conditions generally similar to those described above with respect to options and restricted stock that may be granted under our 2020 Plan.

Changes to Capital Structure. In the event of any dividend or other distribution, reorganization, merger, consolidation, combination, repurchase, recapitalization, liquidation, dissolution, or sale, transfer, exchange or other disposition of assets of the Company, or sale or exchange of our common stock or other securities of the Company, issuance of warrants or other rights to purchase our common stock or other securities of the Company, or other similar corporate transaction or event affecting our shares, the plan administrator may adjust the number and kind of shares that may be delivered under the 2016 Plan, the number, kind and price of shares covered by each outstanding award and/or the terms and conditions of any outstanding award (including any performance “targets”) in order to prevent to prevent dilution or enlargement of the benefits or potential benefits intended by the Company under the 2016 Plan.

Additionally, in the event of any of the transactions described above or any other unusual or nonrecurring transaction or event , affecting the Company or the financial statements or financial condition of the Company, or any change in any applicable laws or accounting principles, the plan administrator is authorized to take any one or more of the following actions whenever the plan administrator determines that such action is appropriate in order to (x) prevent dilution or enlargement of the benefits or potential benefits intended by the Company to be made available under the 2016 Plan or with respect to any award granted or issued under the 2016 Plan, (y) to facilitate such transaction or event or (z) give effect to such changes in applicable laws or accounting principles:

- To provide for the cancellation of awards in exchange for either an amount of cash or other property with a value equal to the amount that could have been obtained upon the exercise or settlement of the vested portion of such award;
- To provide that awards shall vest and be fully exercisable;
- To make adjustments in the number and type of shares subject to outstanding awards, and/or in the terms and conditions of (including, without limitation, the grant or exercise price), and the criteria included in, outstanding awards;
- To provide that awards be assumed by the successor or survivor corporation, or a parent or subsidiary thereof, or shall be substituted for by awards covering the stock of the successor or survivor corporation, or a parent or subsidiary thereof;
- To replace awards with other rights or property selected by the plan administrator; and/or
- To provide that awards will terminate and cannot vest, be exercised or become payable after the applicable event.

Plan Amendment or Termination. Our board of directors may amend, alter, suspend or terminate our 2016 Plan at any time, subject to stockholder approval to the extent required by applicable law. No amendment to our 2016 Plan may materially and adversely affect any outstanding award outstanding without the consent of the affected award holder. As discussed above, we will terminate our 2016 Plan prior to the closing of this offering and no new awards will be granted thereunder following such termination.

2005 Plan

Our board of directors adopted our 2005 Equity Incentive Plan which we refer to as the 2005 Plan, and our stockholders approved our 2005 Plan in November 2005. No additional awards under our 2005 Plan can be made. However, our 2005 Plan continues to govern the terms and conditions of the outstanding awards previously granted thereunder, which include options.

Share Reserve. As of December 31, 2019, stock options covering 7,568,326 shares with a weighted-average exercise price of \$0.48 per share were outstanding under our 2005 Plan.

Administration. Our board of directors or a committee delegated by our board of directors administers our 2005 Plan. Subject to the terms of our 2005 Plan, the administrator has the power to, among other things, determine who will be granted awards, to determine the terms and conditions of each awards, to accelerate the time(s) when an award may vest or be exercised and to construe and interpret the terms of our 2005 Plan and awards granted thereunder.

Options. Options granted under our 2005 Plan are subject to terms and conditions generally similar to those described above with respect to options that may be granted under our 2020 Plan.

Changes to Capital Structure. In the event of stock dividend, extraordinary cash dividend, recapitalization, reorganization, merger, consolidation, split-up, spin-off, combination, exchange of shares or other transaction affects the common stock such that an adjustment is required in order to preserve the benefits intended to be provided by the 2005 Plan, the plan administrator shall adjust the number, kind and price of shares covered by each outstanding award.

Change in Control. In order to preserve a holder's rights under an award in the event of a change in control (as defined by the plan administrator), the plan administrator in its discretion may take one or more of the following actions: (i) provide for the acceleration of any time period relating to the exercise or payment of the award, (ii) provide for payment to the holder of cash or other property equal to the amount that would have been received upon the exercise or payment of the award had the award been exercised or paid upon the change in control, (iii) adjust the terms of the award in a manner determined by the plan administrator to reflect the change in control, (iv) cause the award to be assumed, or new rights substituted therefor, by another entity, or (v) make such other provision as the plan administrator may consider equitable to award holders and in the best interests of the Company.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following includes a summary of transactions since January 1, 2017 to which we have been a party in which the amount involved exceeded or will exceed \$120,000, and in which any of our directors, executive officers or, to our knowledge, beneficial owners of more than 5% of our capital stock or any member of the immediate family of any of the foregoing persons had or will have a direct or indirect material interest, other than equity and other compensation, termination, change in control and other arrangements, which are described under “Executive and Director Compensation.” We also describe below certain other transactions with our directors, executive officers and stockholders.

Promissory Notes

On March 14, 2018, we issued \$0.5 million in aggregate principal amount of convertible promissory notes to various investors pursuant to a convertible note purchase agreement. Certain of our officers and/or directors, including Carmichael Roberts, Terrance McGuire, Dennis Dougherty and Guido Neels participated in the convertible notes financing either personally or through affiliated trusts or funds. Certain holders of 5% or more of our common stock, on an as-converted basis, including entities affiliated with Polaris Venture Partners, entities affiliated with North Bridge Venture Partners and Intersouth Partners VII, L.P., participated in the convertible notes financing.

Preferred Stock Financings

Series B Preferred Stock Financing. On June 5, 2018, we issued and sold to investors 41,685,292 shares of our Series B preferred stock at a price per share of \$0.30, for aggregate consideration of approximately \$12.5 million, consisting of approximately \$12.0 million in cash proceeds plus the conversion of certain convertible notes in an aggregate amount of approximately \$0.5 million. On July 30, 2018, we issued and sold to investors an additional 16,666,667 shares of our Series B preferred stock for aggregate consideration of approximately \$5.0 million. On September 14, 2018, we issued and sold to investors an additional 11,666,666 shares of our Series B preferred stock for aggregate consideration of approximately \$3.5 million. On October 12, 2018, we issued and sold to investors an additional 28,333,328 shares of our Series B preferred stock for aggregate consideration of approximately \$8.5 million. Certain of our officers and/or directors, including Michael Altman, Carmichael Roberts, Terrance McGuire, Dennis Dougherty and Guido Neels participated in the Series B preferred stock financing either personally or through affiliated trusts or funds. Certain holders of 5% or more of our common stock, on an as-converted basis, including entities affiliated with Polaris Venture Partners, entities affiliated with North Bridge Venture Partners, Intersouth Partners VII, L.P., Perceptive Life Sciences Master Fund, Ltd., RA Capital Healthcare Fund, L.P., entities affiliated with ArrowMark Partners and Soleus Private Equity Fund I, L.P., participated in the Series B preferred stock financing.

Series C Preferred Stock Financing. At various closings between January 10, 2020 and January 31, 2020, we issued and sold to investors an aggregate of 78,306,611 shares of our Series C preferred stock at a price per share of \$0.38811, for aggregate consideration of approximately \$30.4 million. We also issued to such investors warrants to purchase up to an aggregate of 23,491,979 shares of common stock, at an exercise price per share equal to the fair market value of our common stock following January 10, 2020 (as determined by our board of directors, in good faith, based on the most recent independent third party valuation of our company available following January 10, 2020 performed pursuant to Section 409A of the Internal Revenue Code, and taking into account any changes to our business between the date of such third party valuation and January 10, 2020). In accordance with such terms, on February 6, 2020, our board of directors determined such fair market value of our common stock to be \$0.25 per share. Certain holders of 5% or more of our common stock, on an as-converted basis, including entities affiliated with Polaris Venture Partners, entities affiliated with North Bridge Venture Partners, Intersouth Partners VII, L.P., entities affiliated with Perceptive Advisors, LLC, RA Capital Healthcare Fund, L.P., entities affiliated with ArrowMark Partners and Soleus Private Equity Fund I, L.P., participated in the Series C preferred stock financing, including the issuance of the warrants to purchase common stock.

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The following table sets forth the aggregate number of shares of our capital stock acquired by beneficial owners of more than 5% of our common stock, on an as-converted basis, in the financing transactions described above. Each share of our Series B preferred stock and Series C preferred stock identified in the following table will convert into one share of common stock immediately prior to the closing of this offering.

<u>Participants</u>	<u>Series B Preferred Stock</u>	<u>Series C Preferred Stock</u>	<u>Warrants to Purchase Common Stock</u>
5% or Greater Stockholders⁽¹⁾			
Entities affiliated with Polaris Venture Partners ⁽²⁾	6,651,630	2,061,271	618,381
Intersouth Partners VII, L.P.	3,300,414	1,030,635	309,190
Entities affiliated with North Bridge Venture Partners ⁽³⁾	6,651,629	5,153,178	1,545,953
Entities affiliated with Perceptive Advisors, LLC ⁽⁴⁾	26,666,666	55,267,836	16,580,350
RA Capital Healthcare Fund, L.P.	26,666,666	1,288,294	386,488
Entities Affiliated with ArrowMark Partners ⁽⁵⁾	16,666,667	3,864,883	1,159,464
Soleus Private Equity Fund I, L.P.	11,666,666	3,607,224	1,082,167

- (1) Additional details regarding these stockholders and their equity holdings are provided in this prospectus under the caption "Principal Stockholders."
- (2) Represents securities acquired by (i) Polaris Venture Partners Entrepreneurs' Fund V, L.P., (ii) Polaris Venture Partners V, L.P., (iii) Polaris Venture Partners Founders' Fund V, L.P. and (iv) Polaris Venture Partners Special Founders' Fund V, L.P.
- (3) Represents securities acquired by (i) North Bridge Venture Partners V-A, L.P., (ii) North Bridge Venture Partners V-B, L.P. and (iii) North Bridge Venture Partners VI, L.P.
- (4) Represents securities acquired by (i) Perceptive Life Sciences Master Fund, Ltd. and (ii) Perceptive LS (A), LLC.
- (5) Represents securities acquired by (i) ArrowMark Fundamental Opportunity Fund, L.P. and (ii) Meridian Small Cap Growth Fund.

Some of our directors are associated with our principal stockholders as indicated in the table below:

<u>Director</u>	<u>Principal Stockholder</u>
Michael Altman	Entities affiliated with Perceptive Advisors, LLC
Edward Anderson	Entities affiliated with North Bridge Venture Partners
Robert S. Langer D.Sc.	Entities affiliated with Polaris Venture Partners
Konstantin Poukalov	Entities affiliated with Perceptive Advisors, LLC

Agreements with Arsenal

In 2011, we entered into a Collaboration Agreement, a Technology License Agreement, a Trademark Coexistence Agreement and a Transition Services Agreement with Arsenal Medical, Inc., or Arsenal, a company in which certain of our principal stockholders are stockholders. During the year ended December 31, 2017 and 2018, we invoiced Arsenal for an aggregate of approximately \$2.1 million and \$1.2 million, respectively, for various costs and other obligations under these agreements. In October 2018, we entered an Acknowledgment and Release Agreement with Arsenal with respect to the expiration of the Collaboration Agreement and certain other intellectual property matters. In November 2019, we entered into an amendment to the Acknowledgment and Release Agreement, which clarifies our and Arsenal's rights to each of our and Arsenal's respective patents and patent applications, including patents and patent applications existing as of the effective date of the Collaboration Agreement, the Technology License Agreement, the Trademark Coexistence Agreement and the

Transition Services Agreement. The amendment to the Acknowledgment and Release Agreement also provides for a mutual release of all claims arising under such patents and patent applications. The Technology License Agreement is a non-exclusive in-license agreement covering certain intellectual property regarding in situ forming foam and nanofiber, which is unrelated to our current and future expected product candidates. The Technology License Agreement provides for no future payments by us and remains in effect. In addition, the Trademark Coexistence Agreement relates to certain trademarks around our previous corporate name, which we no longer use. Finally, the Transition Services Agreement expired in June 2019.

Investor Rights Agreement

We entered into an Eighth Amended and Restated Investor Rights Agreement in January 2020 with the holders of our preferred stock, including entities with which certain of our directors are related. The agreement provides for certain rights relating to the registration of such holders' common stock, including shares issuable upon conversion of preferred stock, and a right of first refusal to purchase future securities sold by us. See "Description of Capital Stock—Registration Rights" for additional information.

Voting Agreement

We entered into a Ninth Amended and Restated Stockholders' Voting Agreement by and among us and certain of our stockholders, pursuant to which the following directors were elected to serve as members on our board of directors and, as of the date of this prospectus, continue to so serve: Maria Palasis, Ph.D., Michael Altman, Edward Anderson, Robert S. Langer and Konstantin Poukalov. Ms. Palasis was selected to serve on our board of directors in her capacity as our chief executive officer. Messrs. Altman, Anderson Langer and Poukalov were selected to serve on our board of directors as representatives of holders of our preferred stock. Messrs. Altman and Poukalov were designated by entities affiliated with Perceptive Advisors, LLC. Messrs. Anderson and Langer were designated by entities affiliated with North Bridge Venture Partners and entities affiliated with Polaris Venture Partners, respectively.

The voting agreement will terminate upon the closing of this offering, and members previously elected to our board of directors pursuant to this agreement will continue to serve as directors until they resign, are removed or their successors are duly elected by the holders of our common stock. The composition of our board of directors after this offering is described in more detail under "Management—Board Composition and Election of Directors."

Employment Agreements

We have entered into employment agreements with our named executive officers. For more information regarding the agreements with our named executive officers, see "Executive and Director Compensation—Executive Compensation Arrangements."

Indemnification Agreements

We intend to enter into indemnification agreements with each of our directors and executive officers. These agreements, among other things, require us or will require us to indemnify each director (and in certain cases their related venture capital funds) and executive officer to the fullest extent permitted by Delaware law, including indemnification of expenses such as attorneys' fees, judgments, fines and settlement amounts incurred by the director or executive officer in any action or proceeding, including any action or proceeding by or in right of us, arising out of the person's services as a director or executive officer.

Stock Option Grants to Executive Officers and Directors

We have granted stock options to our executive officers and certain of our directors as more fully described in the section entitled "Executive and Director Compensation."

Policies and Procedures for Related Person Transactions

Our board of directors has adopted a written related person transaction policy, to be effective upon the closing of this offering, setting forth the policies and procedures for the review and approval or ratification of related person transactions. This policy will cover, with certain exceptions set forth in Item 404 of Regulation S-K under the Securities Act, any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, in which we were or are to be a participant, where the amount involved exceeds \$120,000 in any fiscal year and a related person had, has or will have a direct or indirect material interest, including without limitation, purchases of goods or services by or from the related person or entities in which the related person has a material interest, indebtedness, guarantees of indebtedness and employment by us of a related person. In reviewing and approving any such transactions, our audit committee is tasked to consider all relevant facts and circumstances, including, but not limited to, whether the transaction is on terms comparable to those that could be obtained in an arm's length transaction and the extent of the related person's interest in the transaction. All of the transactions described in this section occurred prior to the adoption of this policy.

PRINCIPAL STOCKHOLDERS

The following table sets forth information with respect to the beneficial ownership of our common stock, as of _____, 2020 by:

- each person or group of affiliated persons known by us to beneficially own more than 5% of our common stock;
- each of our named executive officers;
- each of our directors; and
- all of our executive officers and directors as a group.

The number of shares beneficially owned by each stockholder is determined under rules issued by the Securities and Exchange Commission. Under these rules, beneficial ownership includes any shares as to which the individual or entity has sole or shared voting power or investment power. Applicable percentage ownership is based on _____ shares of common stock outstanding as of _____, 2020, assuming the conversion of all outstanding shares of preferred stock into common stock. In computing the number of shares beneficially owned by an individual or entity and the percentage ownership of that person, shares of common stock subject to options, warrants or other rights held by such person that are currently exercisable or will become exercisable within 60 days of _____, 2020 are considered outstanding, although these shares are not considered outstanding for purposes of computing the percentage ownership of any other person. Unless noted otherwise, the address of all listed stockholders is 480 Arsenal Way, Watertown, MA 02472. Each of the stockholders listed has sole voting and investment power with respect to the shares beneficially owned by the stockholder unless noted otherwise, subject to community property laws where applicable.

<u>Name of Beneficial Owner</u>	<u>Shares Beneficially Owned Prior to Offering</u>		<u>Shares Beneficially Owned After Offering</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
5% or Greater Stockholders				
Entities Affiliated with Polaris Venture Partners ⁽¹⁾		%		%
Intersouth Partners VII, L.P. ⁽²⁾				
Entities Affiliated with North Bridge Venture Partners ⁽³⁾				
Entities Affiliated with Perceptive Advisors, LLC ⁽⁴⁾				
RA Capital Healthcare Fund, L.P. ⁽⁵⁾				
Entities Affiliated with ArrowMark Partners ⁽⁶⁾				
Soleus Private Equity Fund I, L.P. ⁽⁷⁾				
Named Executive Officers and Directors				
Maria Palasis, Ph.D. ⁽⁸⁾				
R. Don Elsey ⁽⁹⁾				
Laura Edgerly-Pflug ⁽¹⁰⁾				
Edward Anderson ⁽³⁾				
Michael Altman ⁽⁴⁾				
Robert S. Langer D.Sc. ⁽¹¹⁾				
C. Ann Merrifield ⁽¹²⁾				
George Whitesides, Ph.D. ⁽¹³⁾				
W. Bradford Smith ⁽¹⁴⁾				
Konstantin Poukalov ⁽¹⁵⁾				
All executive officers and directors as a group (12 persons)				

* Less than 1%.

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- (1) Consists of (i) shares of common stock issuable upon conversion of shares of convertible preferred stock held by Polaris Venture Partners IV, L.P. (“PVP IV”); (ii) shares of common stock issuable upon conversion of shares of convertible preferred stock held by Polaris Venture Partners Entrepreneurs’ Fund IV, L.P. (“PVPEF IV” and, together with PVP IV, the “Polaris IV Funds”); (iii) shares of common stock issuable upon conversion of shares of convertible preferred stock held by Polaris Venture Partners V, L.P. (“PVP V”); (iv) shares of common stock issuable upon conversion of shares of convertible preferred stock held by Polaris Venture Partners Entrepreneurs’ Fund V, L.P. (“PVPEF V”); (v) shares of common stock issuable upon conversion of shares of convertible preferred stock held by Polaris Venture Partners Founders’ Fund V, L.P. (“PVPFF V”); and (vi) shares of common stock issuable upon conversion of shares of convertible preferred stock held by Polaris Venture Partners Special Founders’ Fund V, L.P. (“PVPSFF V,” and together with PVP V, PVPEF V and PVPFF V, the “Polaris V Funds” and the Polaris V Funds, together with the Polaris IV Funds, the “Polaris Funds”). Polaris Venture Management Co., IV, L.L.C. (“PVM IV”) is the sole general partner of each of the Polaris IV Funds and may be deemed to have sole voting and dispositive power with respect to the shares held by each of the Polaris IV Funds. Polaris Venture Management Co. V, L.L.C. (“PVM V”) is the sole general partner of each of the Polaris V Funds and may be deemed to have sole voting and dispositive power with respect to the shares held by each of the Polaris V Funds. Jonathan A. Flint and Terrance G. McGuire are the managing members of each of PVM V and PVM IV. Each of Messrs. Flint and McGuire, as managing members of each of PVM V and PVM IV, may be deemed to have shared voting and dispositive power with respect to the shares held by each of the Polaris Funds. Each of PVM IV, PVM V and Messrs. Flint and McGuire expressly disclaim beneficial ownership of the shares held by the each of the Polaris Funds, except to the extent of their respective pecuniary interests therein, if any. The mailing address of the individuals and entities listed above is One Marina Park Drive, 10th Floor, Boston, MA 02210.
- (2) Consists of shares of common stock issuable upon conversion of shares of convertible preferred stock held by Intersouth Partners VII, L.P. (“ISP VII”), which shares are indirectly held by Intersouth Associates VII, LLC (“ISA VII”), as general partner of ISP VII, and each of the individual managing members of ISA VII. The individual managing members of ISA VI and ISA VII are Mitch Mumma and Dennis Dougherty. Member Managers may share voting and dispositive power over the shares directly held by such entities. The mailing address of the individuals and entities listed above is 4711 Hope Valley Road, Suite 4F-632, Durham NC 27707.
- (3) Consists of (i) shares of common stock issuable upon conversion of shares of convertible preferred stock held by North Bridge Venture Partners V-A, L.P. (“NBVP V-A”), (ii) shares of common stock issuable upon conversion of shares of convertible preferred stock held by North Bridge Venture Partners V-B, L.P. (“NBVP V-B”) and (iii) shares of common stock issuable upon conversion of shares of convertible preferred stock held by North Bridge Venture Partners VI, L.P. (“NBVP VI”). North Bridge Venture Management V, L.P. (“NBVM V”), is the sole General Partner of NBVP V-A and NBVP V-B. NBVM GP, LLC, the General Partner of NBVM V, has ultimate voting and dispositive power over the shares held of record by NBVP VA and NBVP V-B. Shared voting and dispositive power of such shares are vested in Edward T. Anderson and Richard A. D’Amore. Mr. Anderson, a member of our board of directors and a manager of NBVM GP, LLC, disclaims beneficial ownership over such shares, except to the extent of his pecuniary interest therein. North Bridge Venture Management VI, L.P. (“NBVM VI”), is the sole General Partner of NBVP VI. NBVM GP, LLC, the General Partner of NBVM VI, has ultimate voting and dispositive power over the shares held of record by NBVP VI. Shared voting and dispositive power of such shares are vested in Edward T. Anderson and Richard A. D’Amore. Mr. Anderson, a member of our board of directors and a manager of NBVM GP, LLC, disclaims beneficial ownership over such shares, except to the extent of his pecuniary interest therein. The address of all entities affiliated with North Bridge Venture Partners is 60 William Street, Suite 350, Wellesley, MA 02481.
- (4) Consists of (i) shares of common stock issuable upon conversion of shares of convertible preferred stock held by Perceptive Life Sciences Master Fund, Ltd. (“Perceptive Life”) and (ii)

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shares of common stock issuable upon conversion of shares of convertible preferred stock held by Perceptive LS (A), LLC (“Perceptive LS”). Perceptive Advisors, LLC serves as the investment advisor to Perceptive Life. Perceptive LS GP, LLC is the manager of Perceptive LS. Joseph Edelman is the managing member of Perceptive Advisors, LLC and the sole member of Perceptive LS GP, LLC. Michael Altman and Konstantin Poukalov, two of our directors, are Managing Directors at Perceptive Advisors, LLC. The address of Perceptive Life and Perceptive LS is c/o Perceptive Advisors, LLC, 51 Astor Place, 10th Floor, New York, New York 10003.

- (5) Consists of _____ shares of common stock issuable upon conversion of shares of convertible preferred stock held by RA Capital Healthcare Fund, L.P. (“RA Capital”). RA Capital Management, L.P., is the investment advisor (“Adviser”) of RA Capital and RA Capital Management GP, LLC (“Adviser GP”) is the general partner of the Adviser. Dr. Kolchinsky and Rajeev Shah are the controlling persons of the Adviser GP. The Adviser, Dr. Kolchinsky, and Mr. Shah may be deemed to beneficially own the shares held by RA Capital. The address of RA Capital is c/o RA Capital Management, L.P., 200 Berkeley Street, 18th Floor, Boston, Massachusetts 02116.
- (6) Consists of (i) _____ shares of common stock issuable upon conversion of shares of convertible preferred stock held by Meridian Small Cap Growth Fund (“Meridian”) and (ii) _____ shares of common stock issuable upon conversion of shares of convertible preferred stock held by ArrowMark Fundamental Opportunity Fund, L.P. (“ArrowMark” and, together with Meridian, the “ArrowMark Funds”). ArrowMark Partners GP, LLC (“ArrowMark GP”) is the general partner of ArrowMark and David Corkins is the managing member of ArrowMark GP. ArrowMark Colorado Holdings LLC (ArrowMark Colorado) is investment advisor to ArrowMark Funds. Mr. Corkins is a managing member of ArrowMark Colorado and Tony Yao is a portfolio manager of ArrowMark Colorado. Mr. Corkins and Mr. Yao may be considered the beneficial owners of the shares held by the ArrowMark Funds and each disclaim beneficial ownership of such shares, except to the extent of any pecuniary interest therein. The address of the ArrowMark Funds is 100 Fillmore Street, Suite 325, Denver, Colorado 80206.
- (7) Consists of _____ shares held by Soleus Private Equity Fund I, L.P. (“Soleus PE”). Soleus Private Equity GP I, LLC (“Soleus GP”) is the general partner of Soleus PE. Soleus GP holds voting and dispositive power over the shares held by Soleus PE. The address of Soleus PE is 104 Field Point Road, Second Floor, Greenwich CT 06830.
- (8) Includes _____ shares which are exercisable within 60 days of _____, 2020.
- (9) Includes _____ shares which are exercisable within 60 days of _____, 2020.
- (10) Includes _____ shares which are exercisable within 60 days of _____, 2020.
- (11) Includes _____ shares which are exercisable within 60 days of _____, 2020.
- (12) Includes _____ shares which are exercisable within 60 days of _____, 2020.
- (13) Includes _____ shares which are exercisable within 60 days of _____, 2020.
- (14) Includes _____ shares which are exercisable within 60 days of _____, 2020.
- (15) Includes _____ shares which are exercisable within 60 days of _____, 2020.

DESCRIPTION OF CAPITAL STOCK

General

The following description summarizes some of the terms of our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering, of the Seventh Amended and Restated Investor Rights Agreement, or investor rights agreement, and of the General Corporation Law of the State of Delaware. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description, you should refer to our amended and restated certificate of incorporation, amended and restated bylaws and investor rights agreement, copies of which have been or will be filed as exhibits to the registration statement of which this prospectus is a part, as well as the relevant provisions of the General Corporation Law of the State of Delaware. The description of our common stock and preferred stock reflects changes to our capital structure that will occur immediately prior the closing of this offering.

Following the closing of this offering, our authorized capital stock will consist of _____ shares of common stock, par value \$0.001 per share, and _____ shares of preferred stock, par value \$0.001 per share.

As of _____, 2020, there were _____ shares of our common stock outstanding and _____ shares of our common stock issuable upon the automatic conversion of all outstanding shares of our preferred stock in connection with this offering, held of record by _____ stockholders.

Common Stock

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. An election of directors by our stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Subject to the supermajority votes for some matters, other matters shall be decided by the affirmative vote of our stockholders having a majority in voting power of the votes cast by the stockholders present or represented and voting on such matter. Our amended and restated certificate of incorporation and amended and restated bylaws also provide that our directors may be removed only for cause and only by the affirmative vote of the holders of at least two-thirds in voting power of the outstanding shares of capital stock entitled to vote thereon. In addition, the affirmative vote of the holders of at least two-thirds in voting power of the outstanding shares of capital stock entitled to vote thereon is required to amend or repeal, or to adopt any provision inconsistent with, several of the provisions of our amended and restated certificate of incorporation. See below under “—Anti-Takeover Effects of Delaware Law and Our Certificate of Incorporation and Bylaws—Amendment of Charter Provisions.” Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of any series of preferred stock that we may designate and issue in the future.

In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately our net assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock. Holders of common stock have no preemptive, subscription, redemption or conversion rights. Our outstanding shares of common stock are, and the shares offered by us in this offering will be, when issued and paid for, validly issued, fully paid and nonassessable. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred Stock

Under the terms of our amended and restated certificate of incorporation that will become effective upon the closing of this offering, our board of directors is authorized to direct us to issue shares of preferred stock in

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one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock. Upon the closing of this offering, there will be no shares of preferred stock outstanding, and we have no present plans to issue any shares of preferred stock.

Options

As of _____, 2020, options to purchase _____ shares of common stock were outstanding under our 2005 Plan (of which _____ shares were vested and exercisable as of such date) and options to purchase _____ shares of common stock were outstanding under our 2016 Plan (of which _____ shares were vested and exercisable as of such date).

Warrants

As of _____, 2020, warrants to purchase an aggregate total of 23,491,979 shares of our common stock were outstanding. Pursuant to the terms thereof, these warrants were to have an exercise price per share equal to the fair market value of our common stock following January 10, 2020 (as determined by our board of directors, in good faith, based on the most recent independent third party valuation of our company available following January 10, 2020 performed pursuant to Section 409A of the Internal Revenue Code, and taking into account any changes to our business between the date of such third party valuation and January 10, 2020). In accordance with such terms, on February 6, 2020, our board of directors determined such fair market value of our common stock to be \$0.25 per share.

These warrants are exercisable immediately and expire on the earlier to occur of January 10, 2030, immediately prior to the closing of an initial public offering of shares of our common stock and the close of certain other liquidation transactions. Unless earlier exercised, these warrants will be automatically exercised, on a cashless basis, immediately prior to, and contingent upon, the closing of this offering, so long as the initial public offering price of our common stock exceeds the exercise price of the warrants. In the event the initial public offering price of our common stock would be less than the exercise price of the warrants, then the warrants will expire immediately prior to the closing of this offering. Based on an assumed initial public offering price of \$ _____ per share, the midpoint of the price range set forth on the cover of this prospectus, the warrants would be exercised, on a cashless basis, for _____ shares of common stock immediately prior to the closing of this offering. A \$1.00 increase or 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, in case of an increase, increase the number of shares of common stock issuable by _____ shares and, in case of a decrease, decrease the number of shares of common stock issuable by _____ shares, upon the automatic exercise, on a cashless basis, of the warrants.

Registration Rights

Holders of _____ shares of our common stock are entitled to certain rights with respect to the registration of such shares for public resale under the Securities Act, pursuant to an amended and restated investor rights agreement by and among us and certain of our stockholders, until the rights otherwise terminate pursuant to the terms of the investor rights agreement. The registration of shares of common stock as a result of the following rights being exercised would enable holders to trade these shares without restriction under the Securities Act when the applicable registration statement is declared effective.

Form S-1 Registration Rights

If at any time after the earlier of (i) January 10, 2025 or (ii) the date that is six months after the closing date of this offering, the holders of at least 30% of the registrable securities then outstanding request in writing that we effect a registration with respect to all or part of such registrable securities then outstanding having an anticipated aggregate offering price that would exceed \$5,000,000, we may be required to register their shares. We are obligated to effect at most two registrations in response to these demand registration rights. If the holders requesting registration intend to distribute their shares by means of an underwriting, the managing underwriter of such offering will have the right to limit the numbers of shares to be underwritten for reasons related to the marketing of the shares.

Piggyback Registration Rights

If at any time after this offering, we propose to register any shares of our common stock under the Securities Act, subject to certain exceptions, the holders of registrable securities then outstanding will be entitled to notice of the registration and to include their shares of registrable securities in the registration. If our proposed registration involves an underwriting, the managing underwriter of such offering will have the right to limit the number of shares to be underwritten for reasons related to the marketing of the shares.

Form S-3 Registration Rights

If, at any time after we become entitled under the Securities Act to register our shares on a registration statement on Form S-3, the holders of the registrable securities then outstanding request in writing that we effect a registration with respect to all or part of such registrable securities having an anticipated aggregate offering price to the public in the offering of at least \$2,000,000, we will be required to effect such registration; provided, however, that we will not be required to effect such a registration if, within any twelve month period, we have already effected two registrations on Form S-3 for the holders of registrable securities.

Expenses and Indemnification

Ordinarily, other than underwriting discounts and commissions, we will be required to pay all expenses incurred by us related to any registration effected pursuant to the exercise of these registration rights. These expenses may include all registration and filing fees, printing expenses, fees and disbursements of our counsel, reasonable fees and disbursements of a counsel for the selling securityholders and blue sky fees and expenses. Additionally, we have agreed to indemnify selling stockholders for damages, and any legal or other expenses reasonably incurred, arising from or based upon any untrue statement of a material fact contained in any registration statement, an omission or alleged omission to state a material fact in any registration statement or necessary to make the statements therein not misleading, or any violation or alleged violation by the indemnifying party of securities laws, subject to certain exceptions.

Termination of Registration Rights

The registration rights terminate upon the earlier of the date that is five years after the closing of this offering, the date on which no stockholder holds any registrable securities, the closing of a company sale, as defined in the investor rights agreement, or at such time as SEC Rule 144 or another similar exemption under the Securities Act is available for the sale of all of a stockholder's shares without limitation during a three-month period without registration.

Anti-Takeover Effects of Delaware Law and Our Certificate of Incorporation and Bylaws

Some provisions of Delaware law, our restated certificate of incorporation and our restated bylaws could make the following transactions more difficult: an acquisition of us by means of a tender offer; an acquisition of

us by means of a proxy contest or otherwise; or the removal of our incumbent officers and directors. It is possible that these provisions could make it more difficult to accomplish or could deter transactions that stockholders may otherwise consider to be in their best interest or in our best interests, including transactions which provide for payment of a premium over the market price for our shares.

These provisions, summarized below, are intended to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that the benefits of the increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging these proposals because negotiation of these proposals could result in an improvement of their terms.

Undesignated Preferred Stock

The ability of our board of directors, without action by the stockholders, to issue up to _____ shares of undesignated preferred stock with voting or other rights or preferences as designated by our board of directors could impede the success of any attempt to change control of us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our company.

Stockholder Meetings

Our restated bylaws provide that a special meeting of stockholders may be called only by our chairman of the board, chief executive officer or president (in the absence of a chief executive officer), or by a resolution adopted by a majority of our board of directors.

Requirements for Advance Notification of Stockholder Nominations and Proposals

Our restated bylaws establish advance notice procedures with respect to stockholder proposals to be brought before a stockholder meeting and the nomination of candidates for election as directors, other than nominations made by or at the direction of the board of directors or a committee of the board of directors.

Elimination of Stockholder Action by Written Consent

Our restated certificate of incorporation eliminates the right of stockholders to act by written consent without a meeting.

Staggered Board

Our board of directors is divided into three classes. The directors in each class will serve for a three-year term, one class being elected each year by our stockholders. For more information on the classified board, see “Management—Board Composition and Election of Directors.” This system of electing and removing directors may tend to discourage a third-party from making a tender offer or otherwise attempting to obtain control of us, because it generally makes it more difficult for stockholders to replace a majority of the directors.

Removal of Directors

Our restated certificate of incorporation provides that no member of our board of directors may be removed from office by our stockholders except for cause and, in addition to any other vote required by law, upon the approval of the holders of at least two-thirds in voting power of the outstanding shares of stock entitled to vote in the election of directors.

Stockholders Not Entitled to Cumulative Voting

Our restated certificate of incorporation does not permit stockholders to cumulate their votes in the election of directors. Accordingly, the holders of a majority of the outstanding shares of our common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they choose, other than any directors that holders of our preferred stock may be entitled to elect.

Delaware Anti-Takeover Statute

We are subject to Section 203 of the General Corporation Law of the State of Delaware, which prohibits persons deemed to be “interested stockholders” from engaging in a “business combination” with a publicly held Delaware corporation for three years following the date these persons become interested stockholders unless the business combination is, or the transaction in which the person became an interested stockholder was, approved in a prescribed manner or another prescribed exception applies. Generally, an “interested stockholder” is a person who, together with affiliates and associates, owns, or within three years prior to the determination of interested stockholder status did own, 15% or more of a corporation’s voting stock. Generally, a “business combination” includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. The existence of this provision may have an anti-takeover effect with respect to transactions not approved in advance by the board of directors.

Choice of Forum

Our restated certificate of incorporation provides that, unless we consent in writing to the selection of an alternative form, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for: (1) any derivative action or proceeding brought on our behalf; (2) any action asserting a claim of breach of a fiduciary duty or other wrongdoing by any of our directors, officers, employees or agents to us or our stockholders; (3) any action asserting a claim against us arising pursuant to any provision of the General Corporation Law of the State of Delaware or our certificate of incorporation or bylaws; (4) any action to interpret, apply, enforce or determine the validity of our certificate of incorporation or bylaws; or (5) any action asserting a claim governed by the internal affairs doctrine. Under our amended and restated certificate of incorporation, this exclusive forum provision will not apply to claims which are vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery of the State of Delaware, or for which the Court of Chancery of the State of Delaware does not have subject matter jurisdiction. For instance, the provision would not apply to actions arising under federal securities laws, including suits brought to enforce any liability or duty created by the Securities Act, Exchange Act, or the rules and regulations thereunder. Our restated certificate of incorporation also provides that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock will be deemed to have notice of and to have consented to this choice of forum provision. It is possible that a court of law could rule that the choice of forum provision contained in our restated certificate of incorporation is inapplicable or unenforceable if it is challenged in a proceeding or otherwise.

Amendment of Charter Provisions

The amendment of any of the above provisions, except for the provision making it possible for our board of directors to issue preferred stock and the provision prohibiting cumulative voting, would require approval by holders of at least two-thirds in voting power of the outstanding shares of stock entitled to vote thereon.

The provisions of Delaware law, our restated certificate of incorporation and our restated bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in the composition of our board and management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock will be .

Stock Exchange Listing

We have applied to have our common stock listed on The Nasdaq Global Market under the symbol "LYRA."

SHARES ELIGIBLE FOR FUTURE SALE

Immediately prior to this offering, there was no public market for our common stock. Future sales of substantial amounts of common stock in the public market, or the perception that such sales may occur, could adversely affect the market price of our common stock.

Upon the closing of this offering, we will have outstanding an aggregate of _____ shares of common stock, assuming the issuance of _____ shares of common stock offered by us in this offering, the automatic conversion of all outstanding shares of our preferred stock into _____ shares of our common stock, the automatic cashless exercise of outstanding warrants to purchase _____ shares of common stock, which, based on an assumed initial public offering price of \$ _____ per share, the midpoint of the price range set forth on the cover of this prospectus, would result in the issuance of _____ shares of our common stock upon the closing of this offering and no exercise of options after _____, 2020. Of these shares, all shares sold in this offering will be freely tradable without restriction or further registration under the Securities Act, except for any shares purchased by our “affiliates,” as that term is defined in Rule 144 under the Securities Act, whose sales would be subject to the Rule 144 resale restrictions described below, other than the holding period requirement.

The remaining _____ shares of common stock will be “restricted securities,” as that term is defined in Rule 144 under the Securities Act. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rules 144 or 701 under the Securities Act, which are summarized below. We expect that substantially all of these shares will be subject to the 180-day lock-up period under the lock-up agreements described below. Upon expiration of the lock-up period, we estimate that approximately _____ shares will be available for sale in the public market, subject in some cases to applicable volume limitations under Rule 144.

In addition, of the _____ shares of our common stock that were subject to stock options outstanding as of _____, 2020, options to purchase _____ shares of common stock were vested as of _____, 2020 and, upon exercise, these shares will be eligible for sale subject to the lock-up agreements described below and Rules 144 and 701 under the Securities Act.

Lock-Up Agreements

We and each of our directors and executive officers and holders of substantially all of our outstanding capital stock, have agreed that, without the prior written consent of BofA Securities, Inc. and Jefferies LLC, we and they will not, subject to certain exceptions, during the period ending 180 days after the date of this prospectus, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for common stock; or enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of our common stock, whether any transaction described above is to be settled by delivery of our common stock or such other securities, in cash or otherwise.

Upon the expiration of the applicable lock-up periods, substantially all of the shares subject to such lock-up restrictions will become eligible for sale, subject to the limitations discussed above. For a further description of these lock-up agreements, please see “Underwriting.”

Rule 144

Affiliate Resales of Restricted Securities

In general, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, a person who is an affiliate of ours, or who was an affiliate at any time during the 90 days

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before a sale, who has beneficially owned shares of our common stock for at least six months would be entitled to sell in “broker’s transactions” or certain “riskless principal transactions” or to market makers, a number of shares within any three-month period that does not exceed the greater of:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately _____ shares immediately after this offering; or
- the average weekly trading volume in 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 such sale.

Affiliate resales under Rule 144 are also subject to the availability of current public information about us. In addition, if the number of shares being sold under Rule 144 by an affiliate during any three-month period exceeds 5,000 shares or has an aggregate sale price in excess of \$50,000, the seller must file a notice on Form 144 with the Securities and Exchange Commission and Nasdaq concurrently with either the placing of a sale order with the broker or the execution directly with a market maker.

Non-Affiliate Resales of Restricted Securities

In general, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, a person who is not an affiliate of ours at the time of sale, and has not been an affiliate at any time during the three months preceding a sale, and who has beneficially owned shares of our common stock for at least six months but less than a year, is entitled to sell such shares subject only to the availability of current public information about us. If such person has held our shares for at least one year, such person can resell under Rule 144(b)(1) without regard to any Rule 144 restrictions, including the 90-day public company requirement and the current public information requirement.

Non-affiliate resales are not subject to the manner of sale, volume limitation or notice filing provisions of Rule 144.

Rule 701

In general, under Rule 701, any of an issuer’s employees, directors, officers, consultants or advisors who purchases shares from the issuer in connection with a compensatory stock or option plan or other written agreement before the effective date of a registration statement under the Securities Act is entitled to sell such shares 90 days after such effective date in reliance on Rule 144. An affiliate of the issuer can resell shares in reliance on Rule 144 without having to comply with the holding period requirement, and non-affiliates of the issuer can resell shares in reliance on Rule 144 without having to comply with the current public information and holding period requirements.

The Securities and Exchange Commission has indicated that Rule 701 will apply to typical stock options granted by an issuer before it becomes subject to the reporting requirements of the Exchange Act, along with the shares acquired upon exercise of such options, including exercises after an issuer becomes subject to the reporting requirements of the Exchange Act.

Equity Plans

We intend to file one or more registration statements on Form S-8 under the Securities Act to register all shares of common stock subject to outstanding stock options and common stock issued or issuable under our stock plans. We expect to file the registration statement covering shares offered pursuant to our stock plans shortly after the date of this prospectus, permitting the resale of such shares by non-affiliates in the public market without restriction under the Securities Act and the sale by affiliates in the public market, subject to compliance with the resale provisions of Rule 144.

Registration Rights

Upon the closing of this offering, the holders of _____ shares of common stock, which includes all of the shares of common stock issuable upon the automatic conversion of our preferred stock upon the closing of this offering, or their transferees will be entitled to various rights with respect to the registration of these 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, except for shares purchased by affiliates. See “Description of Capital Stock—Registration Rights” for additional information. Shares covered by a registration statement will be eligible for sale in the public market upon the expiration or release from the terms of the lock-up agreement described above.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following discussion is a summary of the material U.S. federal income tax consequences to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or non-U.S. tax laws are not discussed. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended, or the Code, Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service, or the IRS, in each case in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a Non-U.S. Holder of our common stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to Non-U.S. Holders that hold our common stock as a “capital asset” within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non-U.S. Holder’s particular circumstances, including the impact of the Medicare contribution tax on net investment income. In addition, it does not address consequences relevant to Non-U.S. Holders subject to special rules, including, without limitation:

- U.S. expatriates and certain former citizens or long-term residents of the United States;
- persons subject to the alternative minimum tax;
- persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies, and other financial institutions;
- brokers, dealers or traders in securities;
- “controlled foreign corporations,” “passive foreign investment companies,” and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons for whom our common stock constitutes “qualified small business stock” within the meaning of Section 1202 of the Code;
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation;
- tax-qualified retirement plans; and
- “qualified foreign pension funds” as defined in Section 897(1)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds.

If an entity or arrangement treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Definition of a Non-U.S. Holder

For purposes of this discussion, a “Non-U.S. Holder” is any beneficial owner of our common stock that is neither a “U.S. person” nor an entity treated as a partnership for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (1) is subject to the primary supervision of a U.S. court and the control of one or more “United States persons” (within the meaning of Section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Distributions

As described in the section entitled “Dividend Policy,” we do not anticipate declaring or paying dividends to holders of our common stock in the foreseeable future. However, if we do make distributions of cash or property on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder’s adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under “—Sale or Other Taxable Disposition.” Because we may not know the extent to which a distribution is a dividend for U.S. federal income tax purposes at the time it is made, for purposes of the withholding rules discussed below we or the applicable withholding agent may treat the entire distribution as a dividend.

Subject to the discussion below on effectively connected income, dividends paid to a Non-U.S. Holder of our common stock will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate). A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States.

Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Sale or Other Taxable Disposition

A Non-U.S. Holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);
- the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes a U.S. real property interest, or USRPI, by reason of our status as a U.S. real property holding corporation, or USRPHC, for U.S. federal income tax purposes.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular graduated rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

Gain described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty), which may be offset by U.S. source capital losses of the Non-U.S. Holder (even though the individual is not considered a resident of the United States), provided the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends, however, on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we currently are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a Non-U.S. Holder of our common stock will not be subject to U.S. federal income tax if our common stock is "regularly traded," as defined by applicable Treasury Regulations, on an established securities market, and such Non-U.S. Holder owned, actually and constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the Non-U.S. Holder's holding period. Non-U.S. Holders are encouraged to consult their tax advisors regarding the possible consequences to them if we are, or were to become, a USRPHC.

Non-U.S. Holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Payments of dividends on our common stock will not be subject to backup withholding, provided the applicable withholding agent does not have actual knowledge or reason to know the holder is a United States person and the holder either certifies its non-U.S. status, such as by furnishing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI, or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in connection with any dividends on our common stock paid to the Non-U.S. Holder, regardless of whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our common stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting, if the applicable withholding agent receives the certification described above and does not have actual knowledge or reason to know that such holder is a United States person, or the holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act, or "FATCA") on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on, or (subject to the proposed Treasury Regulations discussed below) gross proceeds from the sale or other disposition of, our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends on our common stock. While withholding under FATCA would have applied also to payments of gross proceeds from the sale or other disposition of stock on or after January 1, 2019, recently proposed Treasury Regulations eliminate FATCA withholding on payments of gross proceeds entirely. Taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued.

Because we may not know the extent to which a distribution is a dividend for U.S. federal income tax purposes at the time it is made, for purposes of these withholding rules we or the applicable withholding agent may treat the entire distribution as a dividend. Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

UNDERWRITING

BofA Securities, Inc., Jefferies LLC and William Blair & Company, L.L.C. are acting as representatives of each of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of shares of common stock set forth opposite its name below.

<u>Underwriter</u>	<u>Number of Shares</u>
BofA Securities, Inc.	
Jefferies LLC	
William Blair & Company, L.L.C.	
BTIG, LLC	
Total	_____

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of these shares 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 against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters are offering the shares, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares, and other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officer's certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commissions and Discounts

The representatives have advised us that the underwriters propose initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus and to dealers at that price less a concession not in excess of \$ _____ per share. After the initial offering, the public offering price, concession or any other term of the offering may be changed.

The following table shows the public offering price, underwriting discount and proceeds before expenses to us. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares.

	<u>Per Share</u>	<u>Without Option</u>	<u>With Option</u>
Public offering price	\$	\$	\$
Underwriting discount	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

The expenses of the offering, not including the underwriting discount, are estimated at \$ _____ and are payable by us. We have also agreed to reimburse the underwriters for their expenses relating to clearance of this offering with the Financial Industry Regulatory Authority in an amount up to \$ _____.

Option to Purchase Additional Shares

We have granted an option to the underwriters, exercisable for 30 days after the date of this prospectus, to purchase up to additional shares at the public offering price, less the underwriting discount. If the underwriters exercise this option, each will be obligated, subject to conditions contained in the underwriting agreement, to purchase a number of additional shares proportionate to that underwriter's initial amount reflected in the above table.

No Sales of Similar Securities

We, our executive officers and directors and our other existing security holders have agreed not to sell or transfer any common stock or securities convertible into, exchangeable for, exercisable for, or repayable with common stock, for 180 days after the date of this prospectus without first obtaining the written consent of BofA Securities, Inc. and Jefferies LLC. Specifically, we and these other persons have agreed, with certain limited exceptions, not to directly or indirectly:

- offer, pledge, sell or contract to sell any common stock,
- sell any option or contract to purchase any common stock,
- purchase any option or contract to sell any common stock,
- grant any option, right or warrant for the sale of any common stock,
- lend or otherwise dispose of or transfer any common stock,
- request or demand that we file or make a confidential submission of a registration statement related to the common stock,
- enter into any swap or other agreement that transfers, in whole or in part, the economic consequence of ownership of any common stock whether any such swap or transaction is to be settled by delivery of shares or other securities, in cash or otherwise, or
- publicly disclose the intention to do any of the foregoing.

This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for or repayable with common stock. It also applies to common stock owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition. BofA Securities, Inc. and Jefferies LLC, in their sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time with or without notice.

Nasdaq Global Market Listing

We expect the shares to be approved for listing on the Nasdaq Global Market, subject to notice of issuance, under the symbol "LYRA."

Before this offering, there has been no public market for our common stock. The initial public offering price will be determined through negotiations between us and the representatives. In addition to prevailing market conditions, the factors to be considered in determining the initial public offering price are

- the valuation multiples of publicly traded companies that the representatives believe to be comparable to us,

- our financial information,
- the history of, and the prospects for, our company and the industry in which we compete,
- an assessment of our management, its past and present operations, and the prospects for, and timing of, our future revenues,
- the present state of our development, and
- the above factors in relation to market values and various valuation measures of other companies engaged in activities similar to ours.

An active trading market for the shares may not develop. It is also possible that after the offering the shares will not trade in the public market at or above the initial public offering price.

The underwriters do not expect to sell more than 5% of the shares in the aggregate to accounts over which they exercise discretionary authority.

Price Stabilization, Short Positions and Penalty Bids

Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our common stock. However, the representatives may engage in transactions that stabilize the price of the common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with the offering, the underwriters may purchase and sell our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. "Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares 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 granted to them. "Naked" short sales are sales in excess of such option. 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 our common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of shares of common stock made by the underwriters in the open market prior to the completion of the offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Similar to other purchase transactions, the underwriters' 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. The underwriters may conduct these transactions on the Nasdaq Global Market, in the over-the-counter market or otherwise.

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. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Distribution

In connection with the offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

Some of the underwriters and their affiliates have engaged in, and may in the future engage in, investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. They have received, or may in the future receive, customary fees and commissions for these transactions.

In addition, in the ordinary course of their business activities, the underwriters and 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. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

European Economic Area and the United Kingdom

In relation to each Member State of the European Economic Area and the United Kingdom (each a “Relevant State”), no Shares have been offered or will be offered pursuant to the initial offering to the public in that Relevant State prior to the publication of a prospectus in relation to the Shares which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation), except that offers of Shares may be made to the public in that Relevant State at any time under the following exemptions under the Prospectus Regulation:

- a. to any legal entity which is a qualified investor as defined under the Prospectus Regulation;
- b. to fewer than 150 natural or legal persons (other than qualified investors as defined under the Prospectus Regulation), subject to obtaining the prior consent of the representative for any such offer; or
- c. in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of Shares shall require the Issuer or any Manager to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

Each person in a Relevant State who initially acquires any Shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with the Company and the Managers that it is a qualified investor within the meaning of the Prospectus Regulation.

In the case of any Shares being offered to a financial intermediary as that term is used in Article 5(1) of the Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the Shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer to the public other than their offer or resale in a Relevant State to qualified investors, in circumstances in which the prior consent of the underwriters has been obtained to each such proposed offer or resale.

The Company, the underwriters and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

For the purposes of this provision, the expression an “offer to the public” in relation to any Shares in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any Shares to be offered so as to enable an investor to decide to purchase or subscribe for any Shares, and the expression “Prospectus Regulation” means Regulation (EU) 2017/1129.

References to the Prospectus Regulation includes, in relation to the UK, the Prospectus Regulation as it forms part of UK domestic law by virtue of the European Union (Withdrawal) Act 2018.

The above selling restriction is in addition to any other selling restrictions set out below.

Notice to Prospective Investors in the United Kingdom

This document is for distribution only to persons who (i) have professional experience in matters relating to investments and who qualify as investment professionals within the meaning of Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended, the “Financial Promotion Order”), (ii) are persons falling within Article 49(2)(a) to (d) (“high net worth companies, unincorporated associations etc.”) of the Financial Promotion Order, (iii) are outside the United Kingdom, or (iv) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, as amended (“FSMA”)) in connection with the issue or sale of any securities may otherwise lawfully be communicated or caused to be communicated (all such persons together being referred to as “relevant persons”). This document is directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is available only to relevant persons and will be engaged in only with relevant persons.

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority, or FINMA, and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority, or DFSA. This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission, or ASIC, in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001, or the Corporations Act, and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons, or the Exempt Investors, who are “sophisticated investors” (within the meaning of section 708(8) of the Corporations Act), “professional investors” (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Notice to Prospective Investors in Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to “professional investors” as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a “prospectus” as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Japan

The shares have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph, “Japanese Person” shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Notice to Prospective Investors in Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, the shares were not offered or sold or caused to be made the subject of an invitation for subscription or purchase and will not be offered or sold or caused to be made the subject of an invitation for subscription or purchase, and this prospectus or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares, has not been circulated or distributed, nor will it be circulated or distributed, whether directly or indirectly, to any person in Singapore other than (i) to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore, or, as modified or amended from time to time, the SFA, pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, 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 shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(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 pursuant to an offer made under Section 275 of the SFA except:

- (a) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- (b) where no consideration is or will be given for the transfer;
- (c) where the transfer is by operation of law; or
- (d) as specified in Section 276(7) of the SFA.

Notice to Prospective Investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

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Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 *Underwriting Conflicts*, or NI 33-105, the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Latham & Watkins LLP. Certain legal matters will be passed upon for the underwriters by Shearman & Sterling LLP.

EXPERTS

The consolidated financial statements as of December 31, 2019 and 2018 and for the years then ended included in this Prospectus have been so included in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, appearing elsewhere herein and in the Registration Statement, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the Securities and Exchange Commission a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. For further information about us and the common stock offered hereby, we refer you to the registration statement and the exhibits and schedules filed thereto. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement. Upon completion of this offering, we will be required to file periodic reports, proxy statements, and other information with the Securities and Exchange Commission pursuant to the Securities Exchange Act of 1934. The Securities and Exchange Commission maintains an Internet website that contains such reports, proxy statements and other information about registrants, like us, that file electronically with the Securities and Exchange Commission. The address of that site is www.sec.gov.

We also maintain a website at www.lyratherapeutics.com. Information contained in, or accessible through, our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is only as an inactive textual reference.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
Lyra Therapeutics, Inc.
Watertown, MA

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Lyra Therapeutics, Inc. (the “Company”) and subsidiary as of December 31, 2019 and 2018, the related consolidated statements of operations and comprehensive loss, redeemable convertible preferred stock and stockholders’ (deficit) equity, and cash flows for the years then ended, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audit included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ BDO USA, LLP

We have served as the Company’s auditor since 2013.
Boston, Massachusetts
February 14, 2020

LYRA THERAPEUTICS, INC.

CONSOLIDATED BALANCE SHEETS

(In Thousands, Except Share and Per Share Data)

	December 31,		Pro Forma
	2019	2018	December 31, 2019
Assets			
Current assets:			
Cash and cash equivalents	\$ 9,808	\$ 23,888	\$ 9,808
Grants receivable	—	167	—
Prepaid expenses and other current assets	311	872	311
Total current assets	10,119	24,927	10,119
Property and equipment, net	237	103	237
Operating lease right-of-use asset	3,182	—	3,182
Restricted cash	329	329	329
Deferred offering costs	1,096	—	1,096
Total assets	<u>\$ 14,963</u>	<u>\$ 25,359</u>	<u>\$ 14,963</u>
Liabilities, Redeemable Convertible Preferred Stock and Stockholders' (Deficit) Equity			
Current liabilities:			
Accounts payable	\$ 1,069	\$ 631	\$ 1,069
Accrued expenses and other current liabilities	3,240	1,329	3,240
Operating lease liability	899	—	899
Total current liabilities	5,208	1,960	5,208
Deferred rent	—	120	—
Operating lease liability, net of current portion	2,427	—	2,427
Total liabilities	7,635	2,080	7,635
Commitments and contingencies (Note 11)			
Series A-1 redeemable convertible preferred stock, \$0.001 par value; 34,017,033 shares authorized, issued and outstanding at December 31, 2019 and 2018 (aggregate liquidation preference of \$14,157 at December 31, 2019); no shares authorized, issued or outstanding, pro forma (unaudited)	39,742	39,742	—
Series A-2 redeemable convertible preferred stock, \$0.001 par value; 26,680,202 shares authorized, issued and outstanding at December 31, 2019 and 2018 (aggregate liquidation preference of \$9,063 at December 31, 2019); no shares authorized, issued or outstanding, pro forma (unaudited)	18,393	18,393	—
Series A-3 redeemable convertible preferred stock, \$0.001 par value; 30,070,487 shares authorized, issued and outstanding at December 31, 2019 and 2018 (aggregate liquidation preference of \$18,779 at December 31, 2019); no shares authorized, issued or outstanding, pro forma (unaudited)	38,114	38,114	—
Series A-4 redeemable convertible preferred stock, \$0.001 par value; 19,999,999 shares authorized, issued and outstanding at December 31, 2019 and 2018 (aggregate liquidation preference of \$6,000 at December 31, 2019); no shares authorized, issued or outstanding, pro forma (unaudited)	6,000	6,000	—
Series B redeemable convertible preferred stock, \$0.001 par value; 100,018,619 shares authorized at December 31, 2019 and 2018; 98,351,953 shares issued and outstanding at December 31, 2019 and 2018 (aggregate liquidation preference of \$29,506 at December 31, 2019); no shares authorized, issued or outstanding, pro forma (unaudited)	28,417	28,104	—
Total redeemable convertible preferred stock	130,666	130,353	—
Stockholders' (deficit) equity:			
Common stock, \$0.001 par value; 275,000,000 shares authorized at December 31, 2019 and 2018; 7,962,008 and 5,868,605 shares issued and outstanding at December 31, 2019 and 2018, respectively; 217,081,682 shares issued and outstanding, pro forma at December 31, 2019 (unaudited)	8	6	217
Additional paid-in capital	4,411	4,371	134,868
Accumulated deficit	(127,757)	(111,451)	(127,757)
Total stockholders' (deficit) equity	(123,338)	(107,074)	7,328
Total liabilities, redeemable convertible preferred stock and stockholders' (deficit) equity	<u>\$ 14,963</u>	<u>\$ 25,359</u>	<u>\$ 14,963</u>

See accompanying notes to consolidated financial statements.

LYRA THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(In Thousands, Except Share and Per Share Data)

	Year Ended December 31,	
	2019	2018
Grant revenues	\$ —	\$ 1,244
Operating expenses:		
Research and development	12,032	4,975
General and administrative	4,487	3,528
Total operating expenses	<u>16,519</u>	<u>8,503</u>
Loss from operations	(16,519)	(7,259)
Other income:		
Interest income (expense), net	213	36
Other income, net	—	10
Change in fair value of tranche liability	—	1,184
Total other income, net	<u>213</u>	<u>1,230</u>
Net loss	<u>\$ (16,306)</u>	<u>\$ (6,029)</u>
Comprehensive loss	<u>\$ (16,306)</u>	<u>\$ (6,029)</u>
Net loss per share attributable to common stockholders—basic and diluted	<u>\$ (2.37)</u>	<u>\$ (1.07)</u>
Weighted-average common shares outstanding—basic and diluted	<u>6,998,502</u>	<u>5,728,033</u>
Pro forma net loss per share attributable to common stockholders—basic and diluted (unaudited)	<u>\$ (0.08)</u>	
Pro forma weighted-average common shares outstanding—basic and diluted (unaudited)	<u>216,118,176</u>	

See accompanying notes to consolidated financial statements.

LYRA THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' (DEFICIT) EQUITY

(In Thousands, Except Share Amounts)

	Series A-1 Redeemable Convertible Preferred Stock		Series A-2 Redeemable Convertible Preferred Stock		Series A-3 Redeemable Convertible Preferred Stock		Series A-4 Redeemable Convertible Preferred Stock		Series B Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' (Deficit) Equity
	Shares	Value	Shares	Value	Shares	Value	Shares	Value	Shares	Value	Shares	Amount			
Balance at December 31, 2017	34,017,033	\$ 39,742	26,680,202	\$ 18,393	30,070,487	\$ 38,114	19,999,999	\$ 6,000	—	\$ —	5,715,234	\$ 6	\$ 4,034	\$ (105,422)	\$ (10)
Issuance of Series B redeemable convertible preferred stock, net of issuance costs of \$299	—	—	—	—	—	—	—	—	96,666,656	26,618	—	—	—	—	—
Issuance of Series B redeemable convertible preferred stock in exchange for convertible debt	—	—	—	—	—	—	—	—	1,685,297	506	—	—	—	—	—
Accretion of convertible preferred stock to redemption value	—	—	—	—	—	—	—	—	—	81	—	—	(81)	—	—
Settlement of tranche liability	—	—	—	—	—	—	—	—	—	899	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	406	—	—
Exercise of common stock options	—	—	—	—	—	—	—	—	—	—	153,371	—	12	—	—
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	(6,029)	(6,029)
Balance at December 31, 2018	34,017,033	39,742	26,680,202	18,393	30,070,487	38,114	19,999,999	6,000	98,351,953	28,104	5,868,605	6	4,371	(111,451)	(10)
Accretion of convertible preferred stock to redemption value	—	—	—	—	—	—	—	—	—	313	—	—	(313)	—	—
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	244	—	—
Exercise of common stock options	—	—	—	—	—	—	—	—	—	—	2,093,403	2	109	—	—
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	(16,306)	(16,306)
Balance at December 31, 2019	34,017,033	39,742	26,680,202	18,393	30,070,487	38,114	19,999,999	6,000	98,351,953	28,417	7,962,008	8	4,411	(127,757)	(12)
Conversion of preferred stock into common stock (unaudited)	(34,017,033)	(39,742)	(26,680,202)	(18,393)	(30,070,487)	(38,114)	(19,999,999)	(6,000)	(98,351,953)	(28,417)	209,119,674	209	130,457	—	13
Balance at December 31, 2019 pro forma (unaudited)	—	\$ —	—	\$ —	—	\$ —	—	\$ —	—	\$ —	217,081,682	\$ 217	\$ 134,868	\$ (127,757)	\$ —

See accompanying notes to consolidated financial statements.

LYRA THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands)

	Year Ended December 31,	
	2019	2018
Cash flows from operating activities:		
Net loss	\$ (16,306)	\$ (6,029)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation	244	406
Depreciation expense	27	82
Reserve for uncollectible accounts	167	—
Change in fair value of tranche liability	—	(1,184)
Non-cash interest expense	—	6
Changes in assets and liabilities:		
Grants receivable	—	164
Prepaid expenses and other current assets	561	(291)
Operating lease right-of-use asset	864	—
Accounts payable	(205)	134
Accrued expenses and other current liabilities	1,734	(7)
Operating lease liability	(840)	—
Deferred rent	—	79
Net cash used in operating activities	<u>(13,754)</u>	<u>(6,640)</u>
Cash flows from investing activities:		
Purchases of property and equipment	(211)	(37)
Net cash used in investing activities	<u>(211)</u>	<u>(37)</u>
Cash flows from financing activities:		
Proceeds from the sale of Series B redeemable convertible preferred stock	—	29,000
Payment of offering costs related to sale of Series B redeemable convertible preferred stock	—	(299)
Proceeds from exercise of common stock options	111	12
Proceeds from convertible notes payable	—	500
Payments for deferred offering costs	(226)	—
Net cash (used in) provided by financing activities	<u>(115)</u>	<u>29,213</u>
Net (decrease) increase in cash and cash equivalents	(14,080)	22,536
Cash and cash equivalents and restricted cash, beginning of period	24,217	1,681
Cash and cash equivalents and restricted cash, end of period	<u>\$ 10,137</u>	<u>\$ 24,217</u>
Supplemental disclosure of non-cash financing and investing activities:		
Property and equipment purchases included in accounts payable	\$ 2	\$ 52
Conversion of convertible notes payable	\$ —	\$ 500
Allocation of redeemable convertible preferred stock to tranche liability	\$ —	\$ 2,083
Settlement of tranche liability	\$ —	\$ (899)
Accretion of redeemable convertible preferred stock to redemption value	\$ 313	\$ 81
Right-of-use asset obtained in exchange of operating lease obligation	\$ 4,046	\$ —
Deferred offering costs included in accounts payable and accrued expense	\$ 870	\$ —

See accompanying notes to financial statements.

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and Basis of Presentation

Lyra Therapeutics, Inc. (the “Company”) is a clinical-stage therapeutics company focused on the development and commercialization of novel integrated drug and delivery solutions for the localized treatment of patients with ear, nose and throat (“ENT”) diseases. The Company’s proprietary technology platform, XTreo, is designed to precisely and consistently deliver medicines directly to the affected tissue for sustained periods with a single administration. The Company’s initial product candidates, LYR-210 and LYR-220, are bioresorbable polymeric matrices designed to be administered in a brief, non-invasive, in-office procedure and intended to deliver up to six months of continuous drug therapy to the sinonasal passages for the treatment of chronic rhinosinusitis (“CRS”). The Company was incorporated as a Delaware corporation on November 21, 2005 and is located in Watertown, Massachusetts. On July 16, 2018, the Company formerly changed its name from 480 Biomedical, Inc. to Lyra Therapeutics, Inc.

The Company is subject to risks common to companies in the specialty pharmaceuticals industry, including but not limited to, risks of failure of preclinical studies and clinical trials, the need to obtain marketing approval for any drug product candidate that it may identify and develop, the need to successfully commercialize and gain market acceptance of its product candidates, dependence on key personnel, protection of proprietary technology, compliance with government regulations, development by competitors of technological innovations, reliance on third party manufacturers, ability to transition from pilot-scale manufacturing to large-scale production of products and the need to obtain adequate additional financing to fund the development of its product candidates.

Since inception, the Company has funded its operations with proceeds from sales of redeemable convertible preferred stock and funding from government contracts. The Company has incurred recurring net losses since inception of approximately \$16.3 million and \$6.0 million for the years ended December 31, 2019 and 2018, respectively. In addition, the Company has an accumulated deficit of approximately \$127.8 million at December 31, 2019. The Company expects to continue to generate operating losses for the foreseeable future. At December 31, 2019, the Company had approximately \$9.8 million of cash and cash equivalents. In January 2020, the Company issued 78,306,611 shares of Series C redeemable convertible preferred stock for \$0.38811 per share, in exchange for gross cash proceeds of approximately \$30.4 million.

The Company believes that its cash and cash equivalents as of December 31, 2019 along with the proceeds from its sale of Series C redeemable convertible preferred stock in January 2020 will be sufficient to fund the Company’s operating plan for a period of at least one year from the issuance date of the consolidated financial statements. The future viability of the Company beyond that point is dependent on its ability to raise additional capital to finance its future operations. The Company will seek additional funding through an initial public offering of its common stock or private financings, debt financing, collaboration agreements or government grants. The inability to obtain funding, including an initial public offering, as and when needed, would have a negative impact on the Company’s financial condition and ability to pursue its business strategies. If the Company is unable to obtain funding, the Company could be forced to delay, reduce or eliminate some or all of its research and development programs, product portfolio expansion or commercialization efforts, which could adversely affect its business prospects, or the Company may be unable to continue operations. Although management intends to pursue plans to obtain additional funding to finance its operations, there is no assurance that the Company will be successful in obtaining sufficient funding on terms acceptable to the Company to fund continuing operations, if at all. If the Company is unable to complete a sufficient public offering in a timely manner, it would need to pursue other financing alternatives, such as private financing of debt or equity or collaboration agreements.

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP"). Any reference in these notes to applicable guidance is meant to refer to the authoritative United States generally accepted accounting principles as found in the Accounting Standard Codification ("ASC") and Accounting Standards Updates ("ASU") of the Financial Accounting Standards Board ("FASB").

Unaudited Pro Forma Financial Information

The accompanying unaudited pro forma balance sheet as of December 31, 2019 has been prepared to give effect to the automatic conversion of all outstanding shares of redeemable convertible preferred stock into 209,119,674 shares of common stock as if the Company's proposed initial public offering had occurred on December 31, 2019.

In the accompanying statements of operations and comprehensive loss, the unaudited pro forma net loss attributable to common stockholders used in the calculation of unaudited basic and diluted pro forma net loss per share attributable to common stockholders does not include the effects of the accretion of issuance costs on redeemable convertible preferred stock because it assumes that the conversion of convertible preferred stock into common stock occurred on the later of the beginning of the reporting period or the issuance date of the redeemable convertible preferred stock.

The unaudited pro forma basic and diluted weighted-average common shares outstanding used in the calculation of unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended December 31, 2019 give effect to the automatic conversion of all outstanding shares of redeemable convertible preferred stock into shares of common stock as if the conversion had occurred on the later of January 1, 2019 or the issuance date of the redeemable convertible preferred stock for the year ended December 31, 2019.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements include the accounts of Lyra Therapeutics, Inc. and its wholly owned subsidiary Lyra Therapeutics Security Corporation, which was incorporated in December 2018. All intercompany transactions and balances have been eliminated.

The accompanying consolidated financial statements reflect the application of certain significant accounting policies as described in this note and elsewhere in the accompanying consolidated financial statements and notes.

Use of Estimates

The preparation of the Company's consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, expenses and related disclosure of contingent assets and liabilities at the date of the consolidated financial statements and

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

reported amounts of expenses during the reporting period. On an ongoing basis, the Company's management evaluates its estimates, which include but are not limited to management's judgments of accrued expenses, fair value of common stock, valuation of share-based awards and deferred income taxes. Due to the uncertainty inherent in such estimates, actual results may differ from these estimates.

The Company utilizes significant estimates and assumptions in determining the fair value of its common stock. The Company has utilized various valuation methodologies to estimate the fair value of its common stock. Each valuation methodology includes estimates and assumptions that require the Company's judgment. These estimates and assumptions include a number of objective and subjective factors, including external market conditions, the prices at which the Company sold shares of preferred stock, the superior rights and preferences of securities senior to the Company's common stock at the time of, and the likelihood of, achieving a liquidity event, such as an initial public offering or sale. Significant changes to the key assumptions used in the valuations could result in different fair values of common stock at each valuation date.

Segment Information

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision-maker in deciding how to allocate resources and assess performance. The Company and the Company's chief operating decision-maker, the Company's chief executive officer, views the Company's operations and manages its business as a single operating segment, which is the business of developing targeted medicines to address ENT diseases.

Comprehensive Income (Loss)

Comprehensive income (loss) is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. As the Company did not have any element of other comprehensive income (loss), its comprehensive loss is equal to its net loss for all periods presented.

Cash and Cash Equivalents

The Company considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents. Cash and cash equivalents include cash held in banks and amounts held in money market funds. Cash equivalents are stated at cost, which approximates market value.

Cash and cash equivalents consist of cash held in banks at December 31, 2019 and 2018.

Restricted Cash

The Company had restricted cash of approximately \$0.3 million as of December 31, 2019 and 2018, which was held in certificates of deposit at the Company's financial institution to secure the Company's letter of credit for its facility lease.

Concentrations of Credit Risk and Off-Balance Sheet Risk

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash, cash equivalents and grants receivable. The Company maintains all its cash and cash equivalents at a single accredited financial institution, in amounts that exceed federally insured limits. The grants receivable as of December 31, 2018 are from various government agencies as discussed below.

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

The Company has no significant off-balance sheet risk such as foreign exchange contracts, option contracts, or other foreign exchange hedging arrangements.

Grants Receivable

As of December 31, 2018, the Company had grants receivable of \$0.2 million from the National Institute of Health's ("NIH") National Heart, Lung and Blood Institute ("NHLBI"). During the year ended December 31, 2019, the Company fully reserved the grant receivable as the Company determined it was unlikely to collect it and as a result, at December 31, 2019, it had grants receivable of \$0.

Significant Suppliers

The Company is dependent on third-party manufacturers to supply products for research and development activities in its programs. In particular, the Company relies and expects to continue to rely on a small number of manufacturers to supply it with its requirements for the drug product and associated applicator related to these programs. These programs could be adversely affected by a significant interruption in the supply of the materials required to manufacture the drug product and associated applicator.

Fair Value of Financial Instruments

Fair value is defined as the price that would be received upon sale of an asset or paid to transfer a liability between market participants at a measurement date. ASC Topic 820, *Fair Value Measurements* ("ASC 820"), establishes a three-level valuation hierarchy for instruments measured at fair value that prioritizes the inputs used to measure fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the observable inputs be used when available. Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the inputs that market participants would use in pricing the asset or liability and are developed based on the best information available in the circumstances. The fair value hierarchy applies only to the valuation inputs used in determining the reported or disclosed fair value of the financial instruments and is not a measure of the investment credit quality. The three levels of the fair value hierarchy established by ASC 820 in order of priority are as follows:

- Level 1 - Quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date.
- Level 2 - Inputs other than quoted prices included within Level 1 that are either directly or indirectly observable, such as quoted market prices, interest rates and yield curves.
- Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

To the extent that the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

An entity may elect to measure many financial instruments and certain other items at fair value at specified election dates. Subsequent unrealized gains and losses on items for which the fair value option has been

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

ected will be reported in net loss. The Company did not elect to measure any financial instruments or other items at fair value.

Derivative Liabilities

In connection with certain debt and equity financings, the Company may issue financial instruments in which a derivative instrument is “embedded.” Upon issuing the financial instrument, the Company assesses whether the economic characteristics of the embedded derivative are clearly and closely related to the economic characteristics of the remaining component of the financial instrument (i.e., the host contract) and whether a separate, non-embedded instrument with the same terms as the embedded instrument would meet the definition of a derivative instrument. When it is determined that (1) the embedded derivative possesses economic characteristics that are not clearly and closely related to the economic characteristics of the host contract, and (2) a separate, stand-alone instrument with the same terms would qualify as a derivative instrument, the embedded derivative is separated from the host contract and carried at fair value until the derivative is settled. Changes in the fair value of the derivative liabilities are recognized as other income (expense) in the consolidated statement of operations and comprehensive loss.

Classification and Accretion of Redeemable Convertible Preferred Shares

The Company has classified the redeemable convertible preferred stock outside of stockholders’ (deficit) equity in the accompanying consolidated balance sheets in accordance with authoritative guidance for the classification and measurement of redeemable securities as the redeemable convertible preferred stock is redeemable at a determinable price on a fixed date or upon the occurrence of a deemed liquidation event. The carrying values of the redeemable convertible preferred shares are accreted to their redemption values from the date of issuance through the earliest date of redemption.

Property and Equipment

Property and equipment are stated at cost, less accumulated depreciation. Depreciation expense is recognized using the straight-line method over the estimated useful life of each asset as follows:

	<u>Estimated Useful Life</u>
Laboratory equipment	5 years
Computer software and equipment	3 years
Office furniture and fixtures	7 years
Leasehold improvements	Shorter of useful life or remaining term of related lease

Costs for capital assets not yet placed into service are capitalized as construction in progress and are depreciated in accordance with the above guidelines once placed into service. Upon retirement or sale, the cost of the assets disposed of and the related accumulated depreciation are eliminated from the balance sheet and related gains or losses are reflected in the consolidated statement of operations and comprehensive loss. Repairs and maintenance that do not improve or extend the lives of the respective assets are expensed as incurred, while costs of major additions and betterments are capitalized.

Impairment of Long-Lived Assets

Long-lived assets consist of property and equipment. The Company continually evaluates long-lived assets for potential impairment when events or changes in circumstances indicate the carrying value of the assets may not be recoverable. Recoverability is measured by comparing the book values of the assets to the expected

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

future net undiscounted cash flows that the assets are expected to generate. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the book values of the assets exceed their fair value. The Company did not record any impairment losses on long-lived assets during the years ended December 31, 2019 and 2018.

Leases

ASU No. 2016-02, Leases (Topic 842) (“ASU No. 2016-02”), became effective January 1, 2019. As of the effective date of ASU No. 2016-02, the Company determines at the inception of an arrangement whether the arrangement contains a lease. If a lease is identified in an arrangement, the Company recognizes a right-of-use asset and liability on its balance sheet and determines whether the lease should be classified as a finance or operating lease. The Company does not recognize assets or liabilities for leases with lease terms of less than 12 months.

A lease qualifies as a finance lease if any of the following criteria are met at the inception of the lease: (i) there is a transfer of ownership of the leased asset to the Company by the end of the lease term, (ii) the Company holds an option to purchase the leased asset that it is reasonably certain to exercise, (iii) the lease term is for a major part of the remaining economic life of the leased asset, (iv) the present value of the sum of lease payments equals or exceeds substantially all of the fair value of the leased asset, (v) the nature of the leased asset is specialized to the point that it is expected to provide the lessor no alternative use at the end of the lease term. All other leases are recorded as operating leases.

Finance and operating lease assets and liabilities are recognized at the lease commencement date based on the present value of the lease payments over the lease term using the discount rate implicit in the lease. If the rate implicit in the lease is not readily determinable, the Company utilizes its incremental borrowing rate at the lease commencement date. Operating lease assets are further adjusted for prepaid or accrued lease payments. Operating lease payments are expensed using the straight-line method as an operating expense over the lease term. Finance lease assets are amortized to depreciation expense using the straight-line method over the shorter of the useful life of the related asset or the lease term. Finance lease payments are bifurcated into (i) a portion that is recorded as imputed interest expense and (ii) a portion that reduces the finance liability associated with the lease.

The Company separates lease and non-lease components when determining which lease payments to include in the calculation of its lease assets and liabilities. Variable lease payments are expensed as incurred. If a lease includes an option to extend or terminate the lease, the Company reflects the option in the lease term if it is reasonably certain it will exercise the option.

Operating leases are recorded in “Operating lease right-of use asset,” “Operating lease liability” and “Operating lease liability, net of current portion” in the Company’s consolidated balance sheets. The Company did not have any finance leases recorded in its consolidated balance sheet as of December 31, 2019.

Research and Development Costs

Research and development costs are expensed as incurred. Research and development expenses include salaries and benefits, materials and supplies, preclinical and clinical trial expenses, manufacturing expenses, stock-based compensation expense, depreciation of equipment, contract services and other outside expenses. Costs of certain development activities, such as clinical trials, are recognized based on an evaluation of the progress to completion of specific tasks. Payments for these activities are based on the terms of the individual arrangements, which may differ from the pattern of costs incurred, and are reflected in the consolidated financial

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

statements as prepaid or accrued research and development 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 delivered or the services are performed.

The Company has entered into various research and development contracts with companies both inside and outside of the United States. These agreements are generally cancelable, and related payments are recorded as research and development expenses as incurred. The Company records accruals for estimated ongoing research costs. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the studies or trials, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates. The Company's historical accrual estimates have not been materially different from the actual costs.

Patent Costs

The Company expenses patent application and related legal costs as incurred and classifies such costs as general and administrative expenses in the accompanying consolidated statements of operations and comprehensive loss.

Accounting for Stock-Based Compensation

The Company accounts for its stock-based compensation in accordance with ASC Topic 718, *Compensation—Stock Compensation* ("ASC 718"). ASC 718 requires all stock-based payments to employees and directors to be recognized as expense in the consolidated statements of operations and comprehensive loss based on their grant date fair values. The Company estimates the fair value of options granted using the Black-Scholes option pricing model for stock option grants to both employees and non-employees. The Company believes the fair value of the stock options granted to non-employees is more reliably determinable than the fair value of the services provided.

The Black-Scholes option pricing model requires inputs based on certain subjective assumptions, including (a) the expected stock price volatility, (b) the expected term of the award, (c) the risk-free interest rate and (d) expected dividends. Due to the lack of a public market for the Company's common stock and a lack of company-specific historical and implied volatility data, the Company has based its computation of expected volatility on the historical volatility of a representative group of public companies with similar characteristics to the Company, including stage of product development and life science industry focus. The historical volatility is calculated based on a period of time commensurate with the expected term assumption. The Company uses the simplified method as prescribed by the SEC Staff Accounting Bulletin No. 107, *Share-Based Payment*, to calculate the expected term for options granted to employees as it does not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term. The expected term is applied to the stock option grant group as a whole, as the Company does not expect substantially different exercise or post-vesting termination behavior among its employee population. For options granted to non-employees, the Company utilizes the contractual term of the share-based payment as the basis for the expected term assumption. The risk-free interest rate is based on a treasury instrument whose term is consistent with the expected term of the stock options. The expected dividend yield is assumed to be zero as the Company has never paid cash dividends and has no current plans to pay any cash dividends on its common stock.

The Company has elected as a policy to recognize forfeitures as they occur as described in ASU No. 2016-09, *Compensation—Stock Compensation* ("ASU No. 2016-09").

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

The Company expenses the fair value of its stock-based compensation awards to employees on a straight-line basis over the requisite service period, which is generally the vesting period. The Company records the expense for stock-based compensation awards subject to performance-based milestone vesting when management determines that achievement of the milestone is probable. Management evaluates when the achievement of a performance-based milestone is probable based on the expected satisfaction of the performance conditions as of the reporting date.

The Company adopted ASU No. 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting* (“ASU No. 2018-07”) on January 1, 2019 which permits the valuation of stock-based awards granted to non-employees to be measured at fair value at the grant date rather than on an accelerated attribution basis over the vesting period and recognizes non-employee stock-based compensation expense over the related service period of the non-employee award. Prior to January 1, 2019, the Company accounted for stock-based payments to non-employees in accordance with ASC Topic 505, *Equity-Based Payments to Non-Employees* (“ASC 505”). ASC 505 requires that the expense related to stock-based payments to non-employees be recognized in the consolidated statement of operations and comprehensive loss based on the awards’ vesting date fair values. Under ASC 505, stock-based compensation awards to non-employees were adjusted through stock-based compensation expense at each reporting period end to reflect the current fair value of such awards and were expensed on a straight-line basis.

Income Taxes

The Company accounts for income taxes using the liability method in accordance with ASC Topic 740, *Income Taxes* (“ASC 740”). The difference between the financial statement and tax basis of the assets and liabilities is determined annually. Deferred income tax assets and liabilities are computed using the tax laws and rates that are expected to apply for periods in which such differences reverse. Valuation allowances are established, if necessary, to reduce the deferred tax asset to the amount that will more likely than not be realized.

The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs.

Contingencies

In accordance with ASC Topic 450, *Contingencies*, the Company records accruals for contingencies and legal proceedings expected to be incurred in connection with a loss contingency when it is probable that a liability has been incurred and the amount can be reasonably estimated.

If a loss contingency is not probable but is reasonably possible, or is probable but cannot be estimated, the nature of the contingent liability, together with an estimate of the range of possible loss if determinable and material, would be disclosed.

Guarantees

The Company has identified the guarantees described below as disclosable, in accordance with ASC Topic 460, *Guarantees*.

As permitted under Delaware law, the Company indemnifies its officers and directors for certain events or occurrences while the officer or director is, or was, serving at the Company’s request in such capacity. The

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

maximum potential amount of future payments the Company could be required to make is unlimited; however, the Company has directors' and officers' insurance coverage that should limit its exposure and enable it to recover a portion of any future amounts paid.

The Company is a party to a number of agreements entered into in the ordinary course of business that contain typical provisions that obligate the Company to indemnify the other parties to such agreements upon the occurrence of certain events. Such indemnification obligations are usually in effect from the date of execution of the applicable agreement for a period equal to the applicable statute of limitations. The aggregate maximum potential future liability of the Company under such indemnification provisions is uncertain.

The Company leases office space under a noncancelable operating lease. The Company has standard indemnification arrangements under the lease that requires it to indemnify the landlord against all costs, expenses, fines, suits, claims, demands, liabilities, and actions directly resulting from any breach, violation, or nonperformance of any covenant or condition of the lease.

As of December 31, 2019 and 2018, the Company had not experienced any losses related to these indemnification obligations, and no material claims with respect thereto were outstanding. The Company does not expect significant claims related to these indemnification obligations and, consequently, concluded that the fair value of these obligations is negligible, and no related reserves have been established.

Deferred Offering Costs

The Company capitalizes certain legal, professional, accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs until such financings are consummated. After consummation of the equity financing, these costs are recorded in stockholders' (deficit) equity as a reduction of additional paid-in capital generated as a result of the offering. Should the planned equity financing be abandoned, the deferred offering costs will be expensed immediately as a charge to operating expenses in the consolidated statement of operations and comprehensive loss.

Government Contracts and Revenue Recognition

The Company generated revenue from government contracts that reimbursed the Company for certain allowable costs for funded projects. For contracts with government agencies, when the Company has concluded that it is the principal in conducting the research and development activities and where the funding arrangement is considered central to the Company's ongoing operations, the Company classifies the recognized funding received as revenue.

In July 2016, the Company was awarded a grant from the NIH titled "Novel Bioabsorbable, Flexible Polymeric Stent for Pulmonary Artery Stenosis". The amount awarded of approximately \$1.0 million related to the period August 2016 through July 2019.

In September 2016, the Company received a fixed-fee award of approximately \$0.4 million from NIH for the development leading to the commercialization of bioresorbable stents ("BRS") for the treatment of coarctation of the aorta in neonates. In November 2017, the Company was awarded an amendment to the contract increasing the amount by approximately \$3.0 million.

Grants are invoiced and revenue is recognized as expenses are incurred as that is the depiction of the timing of the transfer of services. Reimbursements are based on actual costs agreed upon in the proposal (salary, fringe benefits, overhead, and direct costs such as materials and subcontractors).

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

The Company recognized revenue under these best-efforts, cost-reimbursable and cost-plus fixed-fee awards, as the Company performed services as long as an award agreement had been executed and the fees for these services were fixed or determinable, legally billable and reasonably assured of collection. Recognized amounts reflected the Company's partial performance under the awards and equal direct and indirect costs incurred plus fixed fees, where applicable. The Company did not recognize revenue under these arrangements for amounts related to contract periods where funding was not yet committed, as amounts above committed funding thresholds would not be considered fixed or determinable or reasonably assured of collection. Revenues and expenses under these arrangements are presented gross in the consolidated statements of operations and comprehensive loss, as the Company had determined it was the primary obligor under these arrangements relative to the research and development activities it performed as the lead technical expert.

Total revenue for the years ended December 31, 2019 and 2018 under the grants was \$0 and \$1.2 million, respectively. Of the amounts recognized during the years ended December 31, 2018, approximately \$1.1 million was received as of year-end. The remaining balance of approximately \$0.2 million as of December 31, 2018 was recorded as grants receivable. During the year ended December 31, 2019, the Company fully reserved the grant receivable as the Company determined it was unlikely to collect it.

Net Loss per Share

The Company has reported losses since inception and has computed basic net loss per share attributable to common stockholders by dividing net loss attributable to common stockholders by the weighted-average number of common shares outstanding for the period, without consideration for potentially dilutive securities. The Company has computed diluted net loss per common share after giving consideration to all potentially dilutive common shares, including options to purchase common stock and redeemable convertible preferred stock, outstanding during the period determined using the treasury-stock and if-converted methods, except where the effect of including such securities would be antidilutive. Because the Company has reported net losses since inception, these potential common shares have been anti-dilutive and basic and diluted loss per share have been the same.

Basic and diluted net loss per share attributable to common stockholders was calculated as follows (in thousands, except share and per share data):

	<u>Year Ended December 31,</u>	
	<u>2019</u>	<u>2018</u>
Numerator:		
Net loss	\$ (16,306)	\$ (6,029)
Accretion of redeemable convertible preferred stock	(313)	(81)
Net loss attributable to common stockholders	<u>\$ (16,619)</u>	<u>\$ (6,110)</u>
Denominator:		
Weighted-average common shares—basic and diluted	6,998,502	5,728,033
Net loss per share attributable to common stockholders—basic and diluted	<u>\$ (2.37)</u>	<u>\$ (1.07)</u>

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

The following table sets forth the potentially dilutive securities that have been excluded from the calculation of diluted net loss per share because to include them would be anti-dilutive (in common stock equivalent shares):

	Year Ended December 31,	
	2019	2018
Series A-1 redeemable convertible preferred stock	34,017,033	34,017,033
Series A-2 redeemable convertible preferred stock	26,680,202	26,680,202
Series A-3 redeemable convertible preferred stock	30,070,487	30,070,487
Series A-4 redeemable convertible preferred stock	19,999,999	19,999,999
Series B redeemable convertible preferred stock	98,351,953	98,351,953
Stock options	27,327,550	19,092,685
Total	<u>236,447,224</u>	<u>228,212,359</u>

Unaudited Pro Forma Net Loss per Share

Unaudited pro forma net loss per share attributable to common stockholders is computed using the weighted-average number of common shares outstanding after giving effect to the conversion of all the redeemable convertible preferred stock into shares of common stock 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 Company's unaudited pro forma net loss per share attributable to common stockholders (in thousands, except share and per share data):

	Year Ended December 31, 2019
Numerator:	
Net loss	\$ (16,306)
Accretion of redeemable convertible preferred stock	(313)
Pro forma net loss attributable to common stockholders	<u>\$ (16,619)</u>
Denominator:	
Weighted-average common shares—basic and diluted	6,998,502
Adjustment for assumed conversion of redeemable convertible preferred stock	209,119,674
Pro forma weighted-average common shares—basic and diluted	<u>216,118,176</u>
Pro forma net loss per share attributable to common stockholders—basic and diluted	<u>\$ (0.08)</u>

Recently Adopted Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies and adopted by the Company as of the specified effective date.

In February 2016, the FASB issued ASU No. 2016-02. The standard requires that all lessees recognize the assets and liabilities that arise from leases on the balance sheet and disclose qualitative and quantitative information about its leasing arrangements. In July 2018, the FASB issued ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements* ("ASU No. 2018-11"), which offers a transition option to entities adopting ASC Topic 842. Under ASU No. 2018-11 entities can elect to apply ASC 842 using a modified-retrospective adoption approach resulting in a cumulative effect adjustment to accumulated deficit at the beginning of the year in which

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

the new lease standard is adopted, rather than adjustments to the earliest comparative period presented in their financial statements. Pursuant to the guidance under ASU No. 2016-02, the Company elected the optional package of practical expedients, which allow the Company to not reassess: (i) whether expired or existing contracts contain leases; (ii) lease classification for any expired or existing leases; and (iii) initial direct costs for any existing leases. The standard also allows entities to make certain policy elections, some of which the Company also plans to elect, including: (i) a policy to not record short-term leases on the balance sheet and (ii) a policy to not separate lease and non-lease components for certain classes of underlying assets. The Company adopted ASC No. 842 as of January 1, 2019 using the modified-retrospective method and recorded a right-of-use asset of approximately \$4.0 million and corresponding liability of approximately \$4.2 million related to its real estate lease with a term of more than 12 months which is not treated as financing lease under ASC 842, accordingly. These adjustments had no impact on the Company's consolidated statement of operations and comprehensive loss and no material impact on the Company's accumulated deficit.

In July 2017, the FASB issued ASU 2017-11, *Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480) and Derivatives and Hedging (Topic 815): I. Accounting for Certain Financial Instruments with Down Round Features; II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception* ("ASU No. 2017-11"). Part I of ASU No. 2017-11 addresses the complexity of accounting for certain financial instruments with down round features. Down round features are features of certain equity-linked instruments (or embedded features) that result in the strike price being reduced on the basis of the pricing of future equity offerings. Current accounting guidance creates cost and complexity for entities that issue financial instruments (such as warrants and convertible instruments) with down round features that require fair value measurement of the entire instrument or conversion option. Part II of ASU No. 2017-11 addresses the difficulty of navigating Topic 480, *Distinguishing Liabilities from Equity*, because of the existence of extensive pending content in the FASB Accounting Standards Codification. This pending content is the result of the indefinite deferral of accounting requirements about mandatorily redeemable financial instruments of certain nonpublic entities and certain mandatorily redeemable noncontrolling interests. The amendments in Part II of ASU No. 2017-11 do not have an accounting effect. ASU No. 2017-11 is effective for fiscal years, and interim periods within those years, beginning after December 15, 2018. The Company adopted ASU No. 2017-11 as of January 1, 2019. The adoption of ASU No. 2017-11 did not have a material impact on the Company's consolidated financial position, results of operations or cash flows.

In June 2018, the FASB issued ASU No. 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting* ("ASU No. 2018-07"). The new standard largely aligns the accounting for share-based payment awards issued to employees and non-employees by expanding the scope of ASC 718 to apply to non-employee share-based transactions, as long as the transaction is not effectively a form of financing. The Company adopted ASU No. 2018-07 as of January 1, 2019. The adoption of ASU No. 2018-07 did not have a material impact on the Company's consolidated financial position, results of operations or cash flows.

In August 2018, the SEC adopted the final rule under SEC Release No. 33-10532, *Disclosure Update and Simplification*, amending certain disclosure requirements that were redundant, duplicative, overlapping, outdated or superseded. In addition, the amendments expanded the disclosure requirements on the analysis of stockholders' equity for interim financial statements. Under the amendments, an analysis of changes in each caption of stockholders' equity presented in the balance sheet must be provided in a note or separate statement. The analysis should present a reconciliation of the beginning balance to the ending balance of each period for which a statement of comprehensive income (loss) is required to be filed. This final rule was effective on November 5, 2018. The adoption of SEC Release No. 33-10532 did not have a material impact on the Company's its financial position, results of operations or cash flows.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

Recently Issued Accounting Pronouncements

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement* (“ASU No. 2018-13”), which modifies the disclosure requirements on fair value measurements. The new guidance will become effective for the Company on January 1, 2020. Early adoption is permitted. The Company currently is evaluating the impact the adoption of ASU 2018-13 will have on its consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-15, *Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* (“ASU No. 2018-15”), which clarifies the accounting for implementation costs in cloud computing arrangements. The new guidance will become effective for the Company on January 1, 2020. Early adoption is permitted. The Company is currently evaluating the impact the adoption of ASU 2018-15 will have on its consolidated financial statements.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* (“ASU No. 2019-12”), makes a number of changes meant to add or clarify guidance on accounting for income taxes. The new guidance will become effective for the Company on January 1, 2022. Early adoption is permitted. The Company currently is evaluating the impact the adoption of ASU 2019-12 will have on its consolidated financial statements.

3. Fair Value Measurements

The Company did not have financial assets and liabilities measured at fair value at December 31, 2019 and 2018.

There have been no changes to the valuation methods used during the years ended December 31, 2019 and 2018. There were no transfers within the fair value hierarchy during the years ended December 31, 2019 and 2018.

The carrying values of the Company’s grants receivable, accounts payable and accrued expenses approximate their fair values due to the short-term nature of these liabilities.

Tranche Rights

The Company’s sales of Series B redeemable convertible preferred stock (“Series B Preferred Stock”) (see Note 6) provided investors with the right to participate in a subsequent offering of Series B Preferred Stock in the event specified development milestone was achieved. The Company classified the tranche rights as a derivative liability on its consolidated balance sheet because it met the definition of a freestanding financial instrument that could have required the Company to transfer assets upon exercise. The Company remeasured the derivative liability associated with the tranche right to fair value at each reporting date, and recognized changes in the fair value of the derivative liability as a component of other income (expense) in the consolidated statements of operations and comprehensive loss.

The fair value of the derivative liability was determined using the Black-Scholes option pricing model, which considered as inputs (a) the expected stock price volatility of the underlying common stock, (b) the expected term of the tranche right, (c) the risk-free interest rate and (d) expected dividends.

LYRA THERAPEUTICS, INC.
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The fair value of the tranche right related to the Company's Series B Preferred Stock upon issuance in June 2018 was approximately \$2.1 million. Upon the issuance of Series B Preferred Stock in October 2018, the tranche right was cancelled, and the fair value of the derivative liability was \$0, with the change in fair value recorded in other income (expense) in the consolidated statements of operations and comprehensive loss.

The following table provides a roll forward of the fair value of the Company's tranche right, for which fair value was determined by Level 3 inputs (in thousands):

	Tranche Right
Balance at December 31, 2017	\$ —
Fair value at issuance	2,083
Change in fair value	(1,184)
Settlement	(899)
Balance at December 31, 2018	<u>\$ —</u>

4. Property and Equipment

Property and equipment consist of the following at December 31, 2019 and 2018 (in thousands):

	December 31,	
	2019	2018
Property and equipment:		
Laboratory equipment	\$ 1,715	\$ 1,715
Computer software and equipment	595	572
Office furniture and fixtures	301	301
Leasehold improvements	317	317
Construction in progress	138	—
	<u>\$ 3,066</u>	<u>\$ 2,905</u>
Accumulated depreciation	(2,829)	(2,802)
Property and equipment, net	<u>\$ 237</u>	<u>\$ 103</u>

The Company recognized approximately \$0.0 million and \$0.1 million of depreciation expense for the years ended December 31, 2019 and 2018, respectively.

5. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consist of the following (in thousands):

	December 31,	
	2019	2018
Payroll and employee related expenses	\$ 885	\$ 484
Third-party research and development expenses	1,344	180
Professional and consulting fees	901	609
Other	110	56
Total accrued expenses and other current liabilities	<u>\$3,240</u>	<u>\$ 1,329</u>

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6. Redeemable Convertible Preferred Stock

On June 5, 2018, the Company filed an amended and restated certificate of incorporation which authorizes its Board of Directors to issue up to 210,786,340 shares of preferred stock, par value \$0.001 per share.

On August 25, 2011, the Company filed an amended and restated certificate of incorporation to recapitalize its outstanding shares of previously outstanding Series A, Series B and Series C preferred stock into 34,017,033 shares of a new Series A-1 redeemable convertible preferred stock ("Series A-1 Preferred Stock"). As the substance of the transaction was a consolidation of the existing stockholders' holdings into a single class of shares without conferring any substantive additional rights or obligations between the stockholders and the Company, the transaction was recorded at the then existing book value of the previously outstanding Series A, B and C preferred stock.

During 2011, the Company issued 26,680,202 shares of Series A-2 redeemable convertible preferred stock ("Series A-2 Preferred Stock") for \$0.6894 per share, in exchange for cash proceeds of approximately \$13.0 million and the conversion of approximately \$5.4 million of convertible promissory notes and accrued interest.

During 2013, the Company issued 16,736,530 shares of Series A-3 redeemable convertible preferred stock ("Series A-3 Preferred Stock") for \$1.2675 per share, in exchange for cash proceeds of approximately \$15.0 million and the conversion of approximately \$6.2 million of convertible promissory notes and accrued interest.

During 2015, the Company issued 9,205,805 shares of Series A-3 Preferred Stock for \$1.2675 per share, in exchange for cash proceeds of approximately \$3.3 million and the conversion of approximately \$8.4 million of certain convertible promissory notes and accrued interest.

During 2016, the Company issued 4,128,152 shares of Series A-3 Preferred Stock for \$1.2675 per share and 19,999,999 shares of Series A-4 redeemable convertible preferred stock ("Series A-4 Preferred Stock") for \$0.30 per share, in exchange for total cash proceeds of approximately \$11.2 million.

During 2018, the Company issued 98,351,953 shares of Series B Preferred Stock for \$0.30 per share, in exchange for total cash proceeds of approximately \$29.0 million and the conversion of approximately \$0.5 million of convertible promissory notes originally issued in March and April 2018 and accrued interest.

The rights, preferences, and privileges of the Series A-1, A-2, A-3, A-4 and Series B Preferred Stock (collectively, the "Preferred Stock") are the following:

Dividends

The holders of Preferred Stock are entitled to receive dividends in any fiscal year, when, as, and if declared by the Board of Directors provided that such dividend payable on the Series B Preferred Stock shall not be lesser than the amount of any dividend to be paid on any other class or series of capital stock. The Company shall not declare or pay any cash dividends on shares of common stock until each of the holders of the Preferred Stock then outstanding shall have first received, or there shall have been declared and set aside for payment, a cash dividend on each outstanding share of Preferred Stock. No cash dividends have been declared since the Company's inception.

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Voting

The holders of Preferred Stock are entitled to vote on all matters with the common stockholders as if they were one class of stock. The holders of Preferred Stock are entitled to the number of votes equal to the number of shares of common stock into which such holders' share of the Preferred Stock is then convertible.

Conversion

Each share of Preferred Stock is convertible, at the option of the holder, at any time, into one share of common stock, adjusted for certain dilutive events and per the conversion rates as defined below under "Liquidation." In addition, all shares of Preferred Stock will automatically convert into shares of common stock upon the earlier of (i) the closing of a firm commitment underwritten public offering in which the per share price to the public is not less than \$2.06 per share, and which results in at least \$35.0 million of gross proceeds to the Company or (ii) upon the written notice from the holders of at least 75% of the then-outstanding shares of Preferred Stock, voting together as a separate class on an as-converted basis at the then effective conversion rate. The Preferred Stock will convert at 1:1 ratio into shares of common stock.

Liquidation

In the event of any voluntary or involuntary liquidation, dissolution, or winding-up of the Company, including a change of control, as defined in its amended and restated certificate of incorporation, the holders of the Preferred Stock will be entitled to be paid a preference payment, prior to any payment to holders of common stock or any other capital stock ranking junior on liquidation to the Preferred Stock. In the case of Series A-1 Preferred Stock, this preference payment is equal to the greater of (a) \$0.4162 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (b) the amount per share which the holders of Series A-1 Preferred Stock would be entitled to if the shares of Series A-1 Preferred Stock had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company. In the case of Series A-2 Preferred Stock, this preference payment is equal to the greater of (a) \$0.3397 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (b) the amount per share which the holders of Series A-2 Preferred Stock would be entitled to if the shares of Series A-2 Preferred Stock had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company. In the case of Series A-3 Preferred Stock, this preference payment is equal to the greater of (a) \$0.6245 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (b) the amount per share which the holders of Series A-3 Preferred Stock would be entitled to if the shares of Series A-3 Preferred Stock had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company. In the case of Series A-4 Preferred Stock, this preference payment is equal to the greater of (a) \$0.30 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (b) the amount per share which the holders of Series A-4 Preferred Stock would be entitled to if the shares of Series A-4 Preferred Stock had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company. In the case of Series B Preferred Stock, this preference payment is equal to the greater of (a) \$0.30 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (b) the amount per share which the holders of Series B Preferred Stock would be entitled to if the shares of Series B Preferred Stock had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company.

After the payment of all required preferential amounts to the holders of Preferred Stock, upon the dissolution, liquidation, or winding-up of the Company, any remaining assets and funds of the Company

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available for distribution shall be distributed among the holders of the then outstanding common stock, pro rata, according to the number of shares of common stock held by such holders.

Redemption

Series A-1, A-2 A-3, A-4 and B Preferred Stock are required to be redeemed by the Company at a price of \$0.4162, \$0.3397, \$0.6245, \$0.30 and \$0.30 per share, respectively, subject to certain adjustments, as defined in its amended and restated certificate of incorporation, plus all declared but unpaid dividends in three annual installments commencing 60 days after receipt by the Company, at any time on or after June 5, 2023 (the fifth anniversary of the Series B Preferred Stock original issue date), of written notice requesting redemption of all shares of Preferred Stock from the holders of at least 75% of the then outstanding shares of Preferred Stock (which must include at least 50% of the then outstanding shares of Series B Preferred Stock).

7. Common Stock

The holders of common stock are entitled to one vote for each share held. Common stockholders are not entitled to receive dividends, unless declared by the Board of Directors.

The Company has reserved for future issuances the following shares of common stock as of December 31, 2019:

	<u>As of</u> <u>December 31, 2019</u>
Series A-1 Preferred Stock	34,017,033
Series A-2 Preferred Stock	26,680,202
Series A-3 Preferred Stock	30,070,487
Series A-4 Preferred Stock	19,999,999
Series B Preferred Stock	98,351,953
Stock options	40,576,552
Total	<u>249,696,226</u>

8. Stock-Based Compensation Expense

The Company adopted the 2016 Equity Incentive Plan ("2016 Plan") in February 2016. Upon adoption of the 2016 Plan, no further grants were made under the 2005 Equity Incentive Plan ("2005 Plan", together with the 2016 Plan, the "Plans"). The 2016 Plan initially provided for the grant of awards for 4,500,000 shares of common stock. In June 2017, the Company amended the 2016 Plan to provide for the grant of awards for a total of 14,200,000 shares of common stock. In June 2018, the Company amended the 2016 Plan to provide for the grant of awards for a total of 35,200,000 shares of common stock.

All of the Company's employees, officers, directors, consultants and advisors are eligible to be granted options, restricted stock, restricted stock units, and other share-based awards under the terms of the 2016 Plan. As of December 31, 2019, 13,249,002 shares of common stock were available for future grant under the 2016 Plan.

All stock option grants are non-statutory stock options except option grants to employees and officers intended to qualify as incentive stock options under the Internal Revenue Code of 1986, as amended. Stock options may not be granted at less than the fair market value of the Company's common stock on the date of grant. Vesting periods of awards are determined by the Board of Directors. Vesting periods of awards granted to

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date range from vesting upon grant to vesting over a four-year period. Vesting conditions are generally based on service provisions, whereby the awards vest over time. Additionally, the Company has granted certain awards which vest upon the achievement of certain financing and revenue milestones. Stock options granted under the Plans expire no more than 10 years from the date of grant.

Stock-based compensation expense included in the Company's statements of operations and comprehensive loss is as follows (in thousands):

	Years Ended December 31,	
	2019	2018
Research and development	\$ 26	\$ 21
General and administrative	218	385
Total	\$ 244	\$ 406

In the year ended December 31, 2018, the Company recorded approximately \$36,000 of stock-based compensation for the award related to the achievement of a financial-based milestone. The Company did not record any stock-based compensation associated with milestone-based awards in the year ended December 31, 2019.

The fair value of each stock option granted to employees, directors and non-employees was estimated on the date of grant using the Black-Scholes option-pricing model, with the following weighted-average assumptions:

	Years Ended December 31,	
	2019	2018
Risk-free interest rate	2.2%	3.1%
Expected dividend yield	— %	— %
Expected term (in years)	6.1	6.1
Expected volatility	76.8%	80.7%

A summary of the stock option activity under the Plans for the year ended December 31, 2019 is as follows:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding December 31, 2018	19,092,685	\$ 0.23	6.2	\$ 279
Granted	10,711,122	0.10		
Exercised	(2,093,403)	0.05		
Cancelled	(382,854)	0.29		
Outstanding at December 31, 2019	27,327,550	\$ 0.19	7.3	\$ 3,363
Exercisable at December 31, 2019	14,123,988	\$ 0.29	5.7	\$ 1,254
Vested and expected to vest at December 31, 2019	27,327,550	\$ 0.19	7.3	\$ 3,363

The weighted-average fair value of options granted to employees and directors during the years ended December 31, 2019 and 2018 was \$0.10 and \$0.06, respectively.

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The aggregate intrinsic value of stock options is calculated as the difference between the exercise price of the stock options and the fair value of the Company's common stock for those stock options that had exercise prices lower than the fair value of the Company's common stock. The total intrinsic value of options exercised during the years ended December 31, 2019 and 2018 was approximately \$0.1 million and \$0, respectively. The Company satisfies stock option exercises with newly issued shares of its common stock.

As of December 31, 2019, total unrecognized stock-based compensation expense relating to unvested stock options was approximately \$1.0 million. This amount is expected to be recognized over a weighted-average period of 3.3 years. Additionally, as of December 31, 2019, there was approximately \$36,000 of unrecognized stock-based compensation related to a stock option award related to the achievement of a revenue-based milestone. As the Company believes the achievement of the revenue-based milestone is currently not probable, it has not recorded any stock-based compensation related to this award. The Company will continue to assess the probability of achieving the revenue-based milestone at each reporting period.

9. Related Parties

The Company has consulting agreements with two of its founders who are also directors of the Company. Total consulting expense related to these consulting agreements was approximately \$50,000 in each of the years ended December 31, 2019 and 2018.

The Company entered into a Contribution Agreement, Transition Services Agreement (as amended), Collaboration Agreement, Technology License Agreement and Trademark Coexistence Agreement with Arsenal Medical, Inc. ("Arsenal"), a company which shares certain common owners with the Company. During the years ended December 31, 2019 and 2018, the Company invoiced Arsenal for an aggregate of approximately \$0.3 million and \$1.0 million, respectively, primarily for its employee costs and its share of rent and other overhead costs. Additionally, during the year ended December 31, 2018, the Company invoiced Arsenal approximately \$0.2 million for certain costs incurred in connection with Arsenal's grants with the government. The Company has reflected these billed amounts as offsets against operating expenses in the accompanying consolidated statements of operations and comprehensive loss. Of these charges, approximately \$0.7 million remained unpaid as of December 31, 2018 and are included in prepaid expenses and other current assets in the accompanying consolidated balance sheet. All amounts receivable from Arsenal were collected as of December 31, 2019.

10. Income Taxes

The Company records a provision or benefit for income taxes on pre-tax income or loss based on its estimated effective tax rate for the year. During the years ended December 31, 2019 and 2018, the Company recorded net losses of approximately \$16.3 million and \$6.0 million, respectively, and, since it maintains a full valuation allowance on its deferred tax assets, the Company did not record an income tax benefit for the years ended December 31, 2019 and 2018.

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A reconciliation of income tax expense computed at the statutory federal income tax rate to income taxes reflected in the consolidated financial statements is as follows:

	Year Ended December 31,	
	2019	2018
Income tax computed at federal statutory tax rate	21.0%	21.0%
Permanent differences	(0.2)%	2.8%
State taxes, net of federal benefit	6.2%	7.1%
Research and development and other tax credits	3.8%	3.2%
Change in deferred tax asset valuation allowance	(30.7)%	(33.3)%
Other	(0.1)%	(0.8)%
	<u>— %</u>	<u>— %</u>

Net deferred tax assets as of December 31, 2019 and 2018 consisted of the following (in thousands):

	December 31,	
	2019	2018
Deferred tax assets:		
Net operating loss carryforwards	\$ 30,006	\$ 25,653
Research and development credits	4,652	4,036
Stock-based compensation	173	186
Operating lease liability	909	—
Other	280	269
Total gross deferred tax assets	<u>36,020</u>	<u>30,144</u>
Less: Valuation allowance	(35,150)	(30,144)
Total deferred tax assets	870	—
Deferred tax liabilities:		
Operating lease right-of-use asset	(870)	—
Total deferred tax liabilities	<u>(870)</u>	<u>—</u>
Net deferred taxes	<u>\$ —</u>	<u>\$ —</u>

As of December 31, 2019, the Company had U.S. federal net operating loss carryforwards of approximately \$91.4 million which may be able to offset future income tax liabilities and expire at various dates through 2037 and approximately \$22.9 million of federal net operating loss carryforwards that may be carried forward indefinitely. As of December 31, 2019, the Company also had state net operating loss carryforwards of approximately \$95.6 million which may be available to offset future income tax liabilities and expire at various dates through 2039.

As of December 31, 2019 and 2018, the Company had federal research and development tax credit carryforwards of approximately \$3.2 million and \$2.7 million, respectively, available to reduce future tax liabilities which expire at various dates through 2039. As of December 31, 2019 and 2018, the Company had state research and development tax credit carryforwards of approximately \$1.8 million and \$1.7 million, respectively, available to reduce future tax liabilities which expire at various dates through 2034. The Company has generated research credits but has not conducted a study to document the qualified activity. This study may result in an adjustment to the Company's research and development credit carryforwards; however, until a study is completed and any adjustment is known, no amounts are being presented as an uncertain tax position. A full valuation allowance has been provided against the Company's research and development credits and, if an

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adjustment is required, this adjustment would be offset by an adjustment to the deferred tax asset established for the research and development credit carryforwards and the valuation allowance.

Under the provisions of the Internal Revenue Code, the net operating loss and tax credit carryforwards are subject to review and possible adjustment by the Internal Revenue Service and state tax authorities. Net operating loss and tax credit carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership interest of significant shareholders over a three-year period in excess of 50%, as defined under Sections 382 and 383 of the Internal Revenue Code, respectively, as well as similar state provisions. This could limit the amount of tax attributes that can be utilized annually to offset future taxable income or tax liabilities. The amount of the annual limitation is determined based on the value of the Company immediately prior to the ownership change. Subsequent ownership changes may further affect the limitation in future years. The Company has not conducted a study to assess whether a change of control has occurred or whether there have been multiple changes of control since inception due to the significant complexity and cost associated with such a study. If the Company has experienced a change of control, as defined by Section 382, at any time since inception, utilization of the net operating loss carryforwards or research and development tax credit carryforwards would be subject to an annual limitation under Section 382, which is determined by first multiplying the value of the Company's stock at the time of the ownership change by the applicable long-term tax-exempt rate, and then could be subject to additional adjustments, as required. Any limitation may result in expiration of a portion of the net operating loss carryforwards or research and development tax credit carryforwards before utilization. Further, until a study is completed by the Company and any limitation is known, no amounts are being presented as an uncertain tax position.

ASC 740 requires a valuation allowance to reduce the deferred tax assets reported if, based on the weight of the evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized. After consideration of all the evidence, both positive and negative, the Company has recorded a valuation allowance against its deferred tax assets at December 31, 2019 and 2018 because the Company's management has determined that it is more likely than not that the Company will not recognize the benefits of its federal and state deferred tax assets primarily due to its history of cumulative net losses incurred since inception and its lack of commercialization of any products or generation of any revenue from product sales since inception and, as a result, a valuation allowance of approximately \$35.2 million and \$30.1 million, respectively, has been established at December 31, 2019 and 2018. Management reevaluates the positive and negative evidence at each reporting period. The valuation allowance increased by approximately \$5.1 million and \$2.0 million, respectively, during the years ended December 31, 2019 and 2018 due primarily to the generation of net operating losses.

The Company has recorded adjustments to deferred tax assets for unrecognized tax benefits as of December 31, 2019 and 2018. The Company's policy is to record interest and penalties related to uncertain tax positions as part of its income tax provision. As of December 31, 2019 and 2018, the Company had no accrued interest or penalties related to uncertain tax positions and no such amounts have been recognized in the Company's statement of operations and comprehensive loss. In many cases, the Company's uncertain tax positions are related to years that remain subject to examination by relevant tax authorities. The statute of limitations for federal and state tax authorities is closed for years prior to December 31, 2016. However, since the Company is in a loss carryforward position, the Company is generally subject to examination by the U.S. federal, state and local income tax authorities for all tax years in which a loss carryforward is available.

11. Leases

In August 2007, the Company entered into an operating lease, as amended, for approximately 22,343 square feet of office and laboratory space in Watertown, Massachusetts. In November 2017, the Company amended its lease ("2017 Amendment") and extended the lease term through April 2023. Initial base rent under

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the 2017 Amendment was approximately \$1.0 million per year. The 2017 Amendment includes annual rent escalations over the term of the operating lease. The Company maintains a letter of credit of approximately \$0.3 million securing its obligations under the operating lease which is secured by approximately \$0.3 million of certificate of deposits, which are included as restricted cash in the consolidated balance sheets. At December 31, 2018 rent escalations are included in deferred rent in the consolidated balance sheets. Rent expense is recognized on a straight-line basis over the terms of occupancy.

The components of lease cost recorded in the Company's consolidated financial statements were as follows (in thousands):

	Year Ended December 31, 2019
Lease Cost:	
Operating lease cost	\$ 1,053
Variable lease cost	727
Sublease income	(368)
Total lease cost, net	\$ 1,412

Variable lease payments include the Company's allocated share of costs incurred and expenditures made by the landlord in the operation and management of the building. The Company's sublease income during the year ended December 31, 2019 related to subleases for a portion of the Company's office and lab space.

The weighted-average remaining lease term and discount rate related to the Company's operating lease were as follows:

	As of December 31, 2019
Weighted-average remaining lease term (in years)	3.3
Weighted-average discount rate	5.5%

Maturity of the Company's operating lease liability in accordance with ASC 842 as of December 31, 2019 are as follows (in thousands):

Year ending December 31,	
2020	\$1,059
2021	1,091
2022	1,124
2023	379
Total maturities	3,653
Less: Amount representing interest	(327)
Present value of operating lease liability	3,326
Less: Current portion of operating lease liability	(899)
Total operating lease liability, net of current portion	\$2,427

Rent expense for the year ended December 31, 2018 was approximately \$0.5 million. Rent expense was net of sublease income of approximately \$0.5 million for the year ended December 31, 2018.

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

12. Retirement Plan

The Company has a defined-contribution plan under Section 401(k) of the Internal Revenue Code (“401(k) Plan”). The 401(k) Plan covers all employees who meet defined minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis. As currently established, the Company is not required to make and to date has not made any contributions to the 401(k) Plan. The Company did not make any matching contributions during the years ended December 31, 2019 and 2018.

13. Subsequent Event

On January 10, 2020, the Company filed an amended and restated certificate of incorporation which authorizes its Board of Directors to issue up to 299,300,288 shares of preferred stock, par value \$0.001 per share, and up to 400,000,000 shares of common stock, par value \$0.001 per share.

In January 2020, the Company issued 78,306,611 shares of Series C redeemable convertible preferred stock (“Series C Preferred Stock”) for \$0.38811 per share, in exchange for gross cash proceeds of approximately \$30.4 million. In conjunction with the issuance of the Series C Preferred Stock, the Company issued warrants to purchase 23,491,979 shares of common stock at an exercise price \$ per share.

The rights, preferences, and privileges of the Preferred Stock and Series C Preferred Stock (collectively, the “2020 Preferred Stock”) are the following:

Dividends

The holders of 2020 Preferred Stock are entitled to receive dividends in any fiscal year, when, as, and if declared by the Board of Directors provided that such dividend payable on the Series C Preferred Stock and Series B Preferred Stock shall not be lesser than the amount of any dividend to be paid on any other class or series of capital stock. The Company shall not declare or pay any cash dividends on shares of common stock until each of the holders of the 2020 Preferred Stock then outstanding shall have first received, or there shall have been declared and set aside for payment, a cash dividend on each outstanding share of 2020 Preferred Stock. No cash dividends have been declared since the Company’s inception.

Voting

The holders of 2020 Preferred Stock are entitled to vote on all matters with the common stockholders as if they were one class of stock. The holders of 2020 Preferred Stock are entitled to the number of votes equal to the number of shares of common stock into which such holders’ share of the 2020 Preferred Stock is then convertible.

Conversion

Each share of 2020 Preferred Stock is convertible, at the option of the holder, at any time, into one share of common stock, adjusted for certain dilutive events and per the conversion rates as defined below under “Liquidation.” In addition, all shares of 2020 Preferred Stock will automatically convert into shares of common stock upon the earlier of (i) the closing of a firm underwritten public offering which results in at least \$40.0 million of net proceeds to the Company or (ii) upon the written notice from the holders of a majority of the then-outstanding shares of 2020 Preferred Stock, voting together as a separate class on an as-converted basis at the then effective conversion rate. The 2020 Preferred Stock will convert at 1:1 ratio into shares of common stock.

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

Liquidation

In the event of any voluntary or involuntary liquidation, dissolution, or winding-up of the Company, including a change of control, as defined in its amended and restated certificate of incorporation, the holders of the 2020 Preferred Stock will be entitled to be paid a preference payment, prior to any payment to holders of common stock or any other capital stock ranking junior on liquidation to the 2020 Preferred Stock. In the case of Series A-1 Preferred Stock, (a) for the previously outstanding Series A preferred stock this preference payment is equal to the greater of (i) \$0.4058 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (ii) the amount per share which the holders of the previously outstanding Series A preferred stock would be entitled to if the shares of the previously outstanding Series A had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company; (b) for the previously outstanding Series B preferred stock this preference payment is equal to the greater of (i) \$0.4503 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (ii) the amount per share which the holders of the previously outstanding Series B preferred stock would be entitled to if the shares of the previously outstanding Series B had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company; and (c) for the previously outstanding Series C preferred stock this preference payment is equal to the greater of (i) \$0.4002 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (ii) the amount per share which the holders of the previously outstanding Series C preferred stock would be entitled to if the shares of the previously outstanding Series C had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company. In the case of Series A-2 Preferred Stock, this preference payment is equal to the greater of (a) \$0.3397 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (b) the amount per share which the holders of Series A-2 Preferred Stock would be entitled to if the shares of Series A-2 Preferred Stock had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company. In the case of Series A-3 Preferred Stock, this preference payment is equal to the greater of (a) \$0.6245 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (b) the amount per share which the holders of Series A-3 Preferred Stock would be entitled to if the shares of Series A-3 Preferred Stock had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company. In the case of Series A-4 Preferred Stock, this preference payment is equal to the greater of (a) \$0.30 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (b) the amount per share which the holders of Series A-4 Preferred Stock would be entitled to if the shares of Series A-4 Preferred Stock had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company. In the case of Series B Preferred Stock, this preference payment is equal to the greater of (a) \$0.30 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (b) the amount per share which the holders of Series B Preferred Stock would be entitled to if the shares of Series B Preferred Stock had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company. In the case of Series C Preferred Stock, this preference payment is equal to the greater of (a) \$0.38811 per share, subject to certain adjustments, as defined, plus any dividends declared but unpaid on such shares, or (b) the amount per share which the holders of Series C Preferred Stock would be entitled to if the shares of Series C Preferred Stock had been converted into shares of common stock immediately prior to such voluntary or involuntary liquidation, dissolution, or winding-up of the Company.

After the payment of all required preferential amounts to the holders of 2020 Preferred Stock, upon the dissolution, liquidation, or winding-up of the Company, any remaining assets and funds of the Company

LYRA THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

available for distribution shall be distributed among the holders of the then outstanding common stock, pro rata, according to the number of shares of common stock held by such holders.

Redemption

Series A-1, A-2 A-3, A-4, B and C Preferred Stock are required to be redeemed by the Company at a price of \$0.4162, \$0.3397, \$0.6245, \$0.30, \$0.30 and \$0.38811 per share, respectively, subject to certain adjustments, as defined in its amended and restated certificate of incorporation, plus all declared but unpaid dividends in three annual installments commencing 60 days after receipt by the Company, at any time on or after January 10, 2025 (the fifth anniversary of the Series C Preferred Stock original issue date), of written notice requesting redemption of all shares of 2020 Preferred Stock from the holders of a majority of the then outstanding shares of 2020 Preferred Stock (which must include at least 50% of the then outstanding shares of Series B Preferred Stock and 50% of the then outstanding shares of Series C Preferred Stock).

Through and including _____, 2020, (the 25th day after the date of this prospectus), all dealers effecting transactions in the Common Stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

Shares



Common Stock

PROSPECTUS

BofA Securities

Jefferies

William Blair

BTIG

, 2020

PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****Item 13. Other Expenses of Issuance and Distribution.**

The following table indicates the expenses to be incurred in connection with the offering described in this registration statement, other than underwriting discounts and commissions, all of which will be paid by us. All amounts are estimated except the Securities and Exchange Commission registration fee, the Financial Industry Regulatory Authority, Inc., or FINRA, filing fee and the Nasdaq listing fee.

	<u>Amount</u>
Securities and Exchange Commission registration fee	\$ *
FINRA filing fee	*
Initial listing fee	*
Accountants' fees and expenses	*
Legal fees and expenses	*
Blue Sky fees and expenses	*
Transfer Agent's fees and expenses	*
Printing and engraving expenses	*
Miscellaneous	*
Total expenses	<u>\$ *</u>

* To be filed by amendment.

Item 14. Indemnification of Directors and Officers.

Section 102 of the General Corporation Law of the State of Delaware permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our restated certificate of incorporation provides that no director of the Registrant shall be personally liable to it or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the General Corporation Law of the State of Delaware provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, ending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Our restated certificate of incorporation provides that we will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. Our restated certificate of incorporation provides that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favour by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys' fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnitee under certain circumstances.

We have entered into indemnification agreements with each of our directors and officers. These indemnification agreements may require us, among other things, to indemnify our directors and officers for some expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of his or her service as one of our directors or officers, or any of our subsidiaries or any other company or enterprise to which the person provides services at our request.

We maintain a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

In any underwriting agreement we enter into in connection with the sale of common stock being registered hereby, the underwriters will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us within the meaning of the Securities Act of 1933, as amended, or the Securities Act, against certain liabilities.

Item 15. Recent Sales of Unregistered Securities.

Set forth below is information regarding shares of capital stock issued by the registrant within the past two years. Also included is the consideration received by us for such shares and information relating to the section of the Securities Act, or rule of the Securities and Exchange Commission, under which exemption from registration was claimed.

(a) Issuance of Capital Stock.

Since January 1, 2017, the registrant issued (i) an aggregate of 98,351,953 shares of Series B preferred stock for an aggregate consideration of approximately \$29.5 million to accredited investors, and (ii) an aggregate of 78,306,611 shares of our Series C preferred stock for an aggregate consideration of approximately \$30.4 million to accredited investors, in each case, pursuant to Section 4(a)(2) of the Securities Act and Rule 506 as a transaction not involving a public offering.

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(b) Equity Grants.

Since January 1, 2017, the registrant granted stock options to purchase an aggregate of _____ shares of its common stock, at a weighted average exercise price per share of \$ _____, to employees, non-employees and directors in connection with services provided to the registrant by such parties.

The issuances of such stock options, the shares of common stock issuable upon the exercise of such options and such restricted shares of common stock were issued pursuant to written compensatory plans or arrangements with the registrant's employees, directors and consultants, in reliance on the exemption provided by Rule 701 promulgated under the Securities Act, or pursuant to Section 4(a)(2) under the Securities Act, relative to transactions by an issuer not involving any public offering, to the extent an exemption from such registration was required.

(c) Warrants

Since January 1, 2017, the registrant issued warrants to purchase up to an aggregate of 23,491,979 shares of common stock to accredited investors pursuant to Section 4(a)(2) of the Securities Act as a transaction not involving a public offering.

(d) Issuance of Notes

On March 14, 2018, the registrant issued up to \$500,000 in aggregate principal amount of convertible promissory notes to accredited investors pursuant to Section 4(a)(2) of the Securities Act as a transaction not involving a public offering. On June 5, 2018, upon the closing of the Series B preferred stock financing, these convertible promissory notes, as well as accrued interest thereon, converted into 1,685,297 shares of Series B preferred stock.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

<u>Exhibit Number</u>	<u>Description of Exhibit</u>
1.1*	Underwriting Agreement
3.1	Certificate of Incorporation of the Registrant, as amended (currently in effect)
3.2	Bylaws of the Registrant (currently in effect)
3.3*	Form of Restated Certificate of Incorporation of the Registrant (to be effective upon the closing of this offering)
3.4*	Form of Restated Bylaws of the Registrant (to be effective upon the closing of this offering)
4.1*	Eighth Amended and Restated Investor Rights Agreement, dated as of January 10, 2020
4.2*	Form of Stock Certificate evidencing the shares of common stock
4.3*	Form of Warrants to Purchase Common Stock, dated various dates, issued by the Registrant to various investors, together with a schedule of warrants and warrant holders
5.1*	Opinion of Latham & Watkins LLP
10.1#**	2005 Equity Incentive Plan, as amended, and form of agreements thereunder
10.2#**	2016 Equity Incentive Plan, as amended, and form of agreements thereunder
10.3#*	2020 Incentive Award Plan and form of agreements thereunder
10.4#*	Non-Employee Director Compensation Program
10.5#*	2020 Employee Stock Purchase Plan
10.6#*	Form of Indemnification Agreement for directors and officers of the Registrant
10.7**	Lease Agreement between the Registrant and ARE-480 Arsenal St, LLC, dated August 14, 2007, as amended
10.8#*	Employment Agreement between the Registrant and Maria Palasis, Ph.D.
10.9#*	Offer Letter between the Registrant and R. Don Elsey
10.10#*	Offer Letter between the Registrant and Laura Ederly-Pflug
21.1**	Subsidiaries of the Registrant
23.1*	Consent of BDO USA, LLP
23.2*	Consent of Latham & Watkins LLP (included in Exhibit 5.1)
24.1	Power of Attorney (included on signature page)

* To be filed by amendment.

** Previously Filed

Indicates management contract or compensatory plan.

(b) Financial Statement Schedules. Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 17. Undertakings.

The undersigned registrant hereby undertakes to provide to the underwriter, at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriter 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 hereby undertakes that:

- (1) For purposes of determining any liability under the Securities Act of 1933, 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 of 1933, 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, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Watertown, Commonwealth of Massachusetts, on this day of , 2020.

LYRA THERAPEUTICS, INC.

By: _____
Maria Palasis, Ph.D.
President and Chief Executive Officer

SIGNATURES AND POWER OF ATTORNEY

We, the undersigned officers and directors of Lyra Therapeutics, Inc., hereby severally constitute and appoint Maria Palasis, Ph.D. and R. Don Elsey, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him or her and in his or her name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement (or any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities held on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
_____ Maria Palasis, Ph.D.	President, Chief Executive Officer and Director (principal executive officer)	, 2020
_____ R. Don Elsey	Chief Financial Officer (principal financial officer and principal accounting officer)	, 2020
_____ Michael Altman	Director	, 2020
_____ Edward Anderson	Director	, 2020
_____ Robert S. Langer, D.Sc.	Director	, 2020
_____ C. Ann Merrifield	Director	, 2020

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<u>Signature</u>		<u>Title</u>	<u>Date</u>
_____ Konstantin Poukalov	Director		, 2020
_____ W. Bradford Smith	Director		, 2020
_____ George Whitesides, Ph.D.	Director		, 2020

State of Delaware
Secretary of State
Division of Corporations
Delivered 12:28 PM 01/10/2020
FILED 12:28 PM 01/10/2020
SR 20200201657 - File Number 4064768

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION

OF

LYRA THERAPEUTICS, INC.

Lyra Therapeutics, Inc., a corporation organized and existing under the General Corporation Law of the State of Delaware (the "General Corporation Law"), does hereby certify as follows:

1. The name of the corporation is Lyra Therapeutics, Inc. The original Certificate of Incorporation of this corporation was filed with the Secretary of State of the State of Delaware on November 21, 2005 under the corporate name WMR Biomedical, Inc.

2. This Amended and Restated Certificate of Incorporation, which amends, restates and integrates the provisions of this corporation's Certificate of Incorporation (this "Amended and Restated Certificate of Incorporation"), was duly adopted in accordance with the provisions of Sections 141, 242 and 245 of the General Corporation Law and by the written consent of its stockholders in accordance Section 228 of the General Corporation Law.

3. This corporation's Certificate of Incorporation is hereby amended and restated in its entirety to provide as herein set forth in full.

FIRST: The name of the corporation is Lyra Therapeutics, Inc. (the "Corporation").

SECOND: The address of the Corporation's registered office in the State of Delaware is 1209 Orange Street, in the City of Wilmington, County of New Castle, State of Delaware, Zip Code 19801. The name of its registered agent at such address is: The Corporation Trust Company.

THIRD: The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law.

FOURTH: Effective immediately and automatically upon the filing with the Secretary of State of the State of Delaware of this Amended and Restated Certificate of Incorporation (the "Effective Time"), (i) each share of Series A-1 Preferred Stock (as defined below) that was previously reclassified from Pre-Recapitalization Series A Preferred Stock (as defined below) outstanding or issued and held in treasury immediately prior to the Effective Time shall be reclassified into one share of Series A-1/A Preferred Stock (as defined below), (ii) each share of Series A-1 Preferred Stock that was previously reclassified from Pre-Recapitalization Series B Preferred Stock (as defined below) outstanding or issued and held in treasury immediately prior to the Effective Time shall be reclassified into one share of Series A-1/B Preferred Stock (as defined below), and (iii) each share of Series A-1 Preferred Stock that was previously reclassified from Pre-Recapitalization Series C Preferred Stock (as defined below) outstanding or issued and held in treasury immediately prior to the Effective Time shall be reclassified into one share of Series A-1/C Preferred Stock (as defined below).

The total number of shares of all classes of stock which the Corporation shall have authority to issue is Six Hundred Ninety-Nine Million Three Hundred Thousand Two Hundred Eighty-Eight (699,300,288), of which (a) Four Hundred Million (400,000,000) shares shall be Common Stock, \$0.001 par value per share ("Common Stock"), and (b) Two Hundred Ninety-Nine Million Three Hundred Thousand Two Hundred Eighty-Eight (299,300,288) shares shall be Preferred Stock, \$0.001 par value per share ("Preferred Stock"), Seven Million Five Hundred Fifty-Four Thousand Six Hundred Fifty-Four (7,554,654) of which shall be designated Series A-1/A Convertible Preferred Stock ("Series A-1/A Preferred Stock"), Ten Million Five Thousand Six Hundred Seventy-Seven (10,005,677) of which shall be designated Series A-1/B Convertible Preferred Stock ("Series A-1/B Preferred Stock"), Sixteen Million Four Hundred Fifty-Six Thousand Seven Hundred Two (16,456,702) of which shall be designated Series A-1/C Convertible Preferred Stock ("Series A-1/C Preferred Stock" and, together with the Series A-1/A Preferred Stock and the Series A-1/B Preferred Stock, the "Series A-1 Preferred Stock"), Twenty-Six Million Six Hundred Eighty Thousand Two Hundred Two (26,680,202) of which shall be designated Series A-2 Convertible Preferred Stock ("Series A-2 Preferred Stock"), Thirty Million Seventy Thousand Four Hundred Eighty-Seven (30,070,487) of which shall be designated Series A-3 Convertible Preferred Stock ("Series A-3 Preferred Stock"), Nineteen Million Nine Hundred Ninety-Nine Thousand Nine Hundred Ninety-Nine (19,999,999) of which shall be designated Series A-4 Convertible Preferred Stock ("Series A-4 Preferred Stock"), Ninety-Eight Million Three Hundred Fifty-One Thousand Nine Hundred Fifty-Three (98,351,953) of which shall be designated Series B Convertible Preferred Stock ("Series B Preferred Stock"), and Ninety Million One Hundred Eighty Thousand Six Hundred Fourteen (90,180,614) of which shall be designated Series C Convertible Preferred Stock ("Series C Preferred Stock").

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof, in respect of each class of capital stock of the Corporation.

A) COMMON STOCK

1. General. The voting, dividend and liquidation rights of the holders of Common Stock are subject to and qualified by the rights of the holders of Preferred Stock of any series as may be designated by the Board of Directors of the Corporation (the "Board of Directors") upon any issuance of Preferred Stock of any series.

2. Voting. The holders of Common Stock are entitled to one vote for each share held at all meetings of stockholders (and written actions in lieu of meetings). There shall be no cumulative voting.

The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the capital stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b) of the General Corporation Law.

3. Dividends. Dividends may be declared and paid on Common Stock from funds lawfully available therefor as and when determined by the Board of Directors and subject to any preferential dividend rights of any then outstanding Preferred Stock.

4. Liquidation. Upon the dissolution or liquidation of the Corporation, whether voluntary or involuntary, holders of Common Stock will be entitled to receive all assets of the Corporation available for distribution to its stockholders, subject to any preferential rights of any then outstanding Preferred Stock.

B) PREFERRED STOCK.

The Preferred Stock has the following rights, preferences, powers, privileges and restrictions, qualifications and limitations.

1. Dividends.

(a) The holders of shares of Preferred Stock shall be entitled to receive dividends in any fiscal year, when, as and if declared by the Board of Directors, out of any assets at the time legally available therefor, provided that such dividend payable on the Series C Preferred Stock and Series B Preferred Stock shall not be lesser than the amount of any dividend to be paid on any other class or series of capital stock of the Corporation. Any dividends may, at the option of the holder of Preferred Stock, be paid to such holder in such number of shares of Common Stock determined in accordance with the then effective Conversion Price (as defined below), as applicable.

(b) The Corporation shall not declare or pay any dividends on shares of any other class or series of capital stock of the Corporation (other than dividends on shares of Common Stock payable in shares of Common Stock) unless each of the holders of the Series C Preferred Stock and Series B Preferred Stock then outstanding shall have first received, or there shall have been declared and set aside for payment, a cash dividend on each outstanding share of Series C Preferred Stock and Series B Preferred Stock in an amount at least equal to the product of (i) the per share amount, if any, of the dividends to be declared, paid or set aside for the Common Stock, multiplied by (ii) the number of shares of Common Stock into which such share of Series C Preferred Stock or Series B Preferred Stock, as applicable, is then convertible.

(c) Thereafter, the Corporation shall not declare or pay any cash dividends on shares of Common Stock unless each of the holders of the Series A-4 Preferred Stock and Junior Preferred Stock (as defined below) then outstanding shall have first received, or there shall have been declared and set aside for payment, a cash dividend on each outstanding share of Series A-4 Preferred Stock and Junior Preferred Stock in an amount equal to the product of (i) the per share amount, if any, of the dividends to be declared, paid or set aside for the Common Stock, multiplied by (ii) the number of shares of Common Stock into which such share of Series A-4 Preferred Stock and Junior Preferred Stock is then convertible.

2. Liquidation, Dissolution or Winding Up; Certain Mergers, Consolidations and Asset Sales.

(a) Liquidation Amount.

(i) Reference is hereby made to the Corporation's amended and restated certificate of incorporation as it was amended and restated on August 25, 2011, whereby effective immediately and automatically upon the filing by the Corporation with the Secretary of State of the State of Delaware of such amended and restated certificate of incorporation (the "Recapitalization Effective Time"), (A) each share of the Corporation's Series A Convertible Preferred Stock, \$0.001 par value per share ("Pre-Recapitalization Series A Preferred Stock"), outstanding or issued and held in treasury immediately prior to the Recapitalization Effective Time was reclassified into one share of the Corporation's Series A-1 Preferred Stock, (B) each share of the Corporation's Series B Convertible Preferred Stock, \$0.001 par value per share ("Pre-Recapitalization Series B Preferred Stock"), outstanding or issued and held in treasury immediately prior to the Recapitalization Effective Time was reclassified into such number of shares of Series A-1 Preferred Stock equal to the quotient of \$1.43 divided by \$1.32, and (C) each share of the Corporation's Series C Convertible Preferred Stock, \$0.001 par value per share ("Pre-Recapitalization Series C Preferred Stock"), outstanding or issued and held in treasury immediately prior to the Recapitalization Effective Time was reclassified into one share of Series A-1 Preferred Stock.

(ii) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, the holders of shares of the Series C Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, before any payment shall be made to the holders of Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock (together with the Series A-1 Preferred Stock and the Series A-2 Preferred Stock, the "Junior Preferred Stock"), Series A-4 Preferred Stock, Series B Preferred Stock, the Common Stock or any other class or series of stock ranking on liquidation junior to the Series C Preferred Stock by reason of their ownership thereof, an amount equal to the greater of (A) the Series C Per Share Liquidation Amount (as defined below) plus any dividends declared but unpaid thereon, and (B) such amount per share as would have been payable had each such share of Series C Preferred Stock (but no other shares of Preferred Stock) converted into Common Stock pursuant to Section 4 immediately prior to such liquidation, dissolution or winding up. If upon any such liquidation, dissolution or winding up of the Corporation the remaining assets of the Corporation available for distribution to its stockholders shall be insufficient to pay each of the holders of the Series C Preferred Stock the full amount to which such holder shall be entitled, the holders of the Series C Preferred Stock shall share ratably in any distribution of the remaining assets and funds of the Corporation in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

(iii) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, following any payments made to the holders of Series C Preferred Stock pursuant to the preceding paragraph, the holders of shares of the Series B Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, before any payment shall be made to the holders of Junior Preferred Stock, Series A-4 Preferred Stock, the Common Stock or any other class or series of stock ranking on liquidation junior to the Series B Preferred Stock by reason of their

ownership thereof, an amount equal to the greater of (A) the Series B Per Share Liquidation Amount (as defined below) plus any dividends declared but unpaid thereon, and (B) such amount per share as would have been payable had each such share of Series B Preferred Stock (but no other shares of Preferred Stock) converted into Common Stock pursuant to Section 4 immediately prior to such liquidation, dissolution or winding up. If upon any such liquidation, dissolution or winding up of the Corporation the remaining assets of the Corporation available for distribution to its stockholders shall, following payment to the holders of the Series C Preferred Stock under Section 2(a)(ii) above, be insufficient to pay each of the holders of the Series B Preferred Stock the full amount to which such holder shall be entitled, the holders of the Series B Preferred Stock and any class or series of stock ranking on liquidation on a parity with the Series B Preferred Stock shall share ratably in any distribution of the remaining assets and funds of the Corporation in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

(iv) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, following any payments made to the holders of Series C Preferred Stock and Series B Preferred Stock pursuant to the immediately preceding paragraphs, the holders of shares of the Series A-4 Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, before any payment shall be made to the holders of Junior Preferred Stock, the Common Stock or any other class or series of stock ranking on liquidation junior to the Series A-4 Preferred Stock by reason of their ownership thereof, an amount equal to the greater of (A) the Series A-4 Per Share Liquidation Amount (as defined below) plus any dividends declared but unpaid thereon, and (B) such amount per share as would have been payable had each such share of Series A-4 Preferred Stock converted into Common Stock pursuant to Section 4 immediately prior to such liquidation, dissolution or winding up, subject to the Liquidation Cap (as defined below). If upon any such liquidation, dissolution or winding up of the Corporation the remaining assets of the Corporation available for distribution to its stockholders shall, following payment to the holders of the Series C Preferred Stock and Series B Preferred Stock under Sections 2(a)(ii) and (iii) above, be insufficient to pay each of the holders of the Series A-4 Preferred Stock the full amount to which such holder shall be entitled, the holders of the Series A-4 Preferred Stock and any class or series of stock ranking on liquidation on a parity with the Series A-4 Preferred Stock shall share ratably in any distribution of the remaining assets and funds of the Corporation in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

(v) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, following any payments made to the holders of Series C Preferred Stock, Series B Preferred Stock and Series A-4 Preferred Stock pursuant to the preceding paragraphs, the holders of shares of the Junior Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, before any payment shall be made to the holders of the Common Stock or any other class or series of stock ranking on liquidation junior to the Junior Preferred Stock by reason of their ownership thereof, an amount equal to (A) in the case of the Series A-1 Preferred Stock, the greater of (I) the applicable Series A-1 Per Share Liquidation Amount (as defined below) plus any dividends declared but unpaid thereon, or (II) such amount per share as would have

been payable had each such share of Series A-1 Preferred Stock converted into Common Stock pursuant to Section 4 immediately prior to such liquidation, dissolution or winding up, (B) in the case of the Series A-2 Preferred Stock, the greater of (I) the Series A-2 Per Share Liquidation Amount (as defined below) plus any dividends declared but unpaid thereon, or (II) such amount per share as would have been payable had each such share of Series A-2 Preferred Stock converted into Common Stock pursuant to Section 4 immediately prior to such liquidation, dissolution or winding up, and (C) in the case of the Series A-3 Preferred Stock, the greater of (I) the Series A-3 Per Share Liquidation Amount (as defined below) plus any dividends declared but unpaid thereon, or (II) such amount per share as would have been payable had each such share of Series A-3 Preferred Stock converted into Common Stock pursuant to Section 4 immediately prior to such liquidation, dissolution or winding up. In calculating whether a particular series of Junior Preferred Stock would receive upon conversion more than its stated liquidation amount, the conversion of each other series of Junior Preferred Stock is to be assumed if and only if such other series of Junior Preferred Stock would receive upon such conversion more than its stated liquidation amount. The combined aggregate Series A-4 Per Share Liquidation Amount and Junior Preferred Liquidation Amount payable pursuant to Section 2(a)(iv) and Section 2(a)(v) shall not exceed forty eight million dollars (\$48,000,000) (the "Liquidation Cap"). The aggregate Series A-1 Per Share Liquidation Amount payable pursuant to clause (A) of this Section 2(a)(v) shall in no event exceed \$29,806,552. If upon any such liquidation, dissolution or winding up of the Corporation the remaining assets of the Corporation available for distribution to its stockholders shall be insufficient to pay each of the holders of the Junior Preferred Stock the full amount to which such holder shall be entitled, the holders of the Junior Preferred Stock and any class or series of stock ranking on liquidation on a parity with the Junior Preferred Stock shall share ratably in any distribution of the remaining assets and funds of the Corporation in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

(vi) For purposes of this Article FOURTH, the following definitions shall apply:

(A) "Junior Preferred Liquidation Amount" means, collectively, the Series A-1 Per Share Liquidation Amount, Series A-2 Per Share Liquidation Amount, and Series A-3 Per Share Liquidation Amount;

(B) "Series A-1 Per Share Liquidation Amount" means, at a time of determination:

(1) for each share of Series A-1/A Preferred Stock, \$0.4058 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-1/A Preferred Stock);

(2) for each share of Series A-1/B Preferred Stock, \$0.4503 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-1/B Preferred Stock); and

(3) for each share of Series A-1/C Preferred Stock, \$0.4002 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-1/C Preferred Stock);

(C) “Series A-2 Per Share Liquidation Amount” means \$0.3397 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-2 Preferred Stock);

(D) “Series A-3 Per Share Liquidation Amount” means \$0.6245 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-3 Preferred Stock);

(E) “Series A-4 Per Share Liquidation Amount” means \$0.30 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-4 Preferred Stock);

(F) “Series B Per Share Liquidation Amount” means \$0.30 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series B Preferred Stock); and

(G) “Series C Per Share Liquidation Amount” means \$0.38811 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series C Preferred Stock).

(vii) Any sale, assignment, transfer or other disposition, whether voluntarily or by operation of law (collectively, “Transfer”), of any shares of Preferred Stock shall be void and shall transfer no right, title, or interest in or to such shares to the purported transferee (the “Transferee”) unless prior to such Transfer the purported transferor (the “Transferor”) of such shares delivers to the Secretary of the Corporation written notice of such Transfer (the “Transfer Notice”). The Transfer Notice shall specify: (i) the name and address of the Transferee and (ii) the number of shares of Preferred Stock subject to the Transfer.

(b) After the payment of all preferential amounts required to be paid to the holders of Series C Preferred Stock, Series B Preferred Stock, Series A-4 Preferred Stock, Junior Preferred Stock and any other class or series of stock of the Corporation ranking on liquidation on a parity with the Series C Preferred Stock, Series B Preferred Stock, Series A-4 Preferred Stock, or Junior Preferred Stock, upon the dissolution, liquidation or winding up of the Corporation, any remaining assets and funds of the Corporation available for distribution to stockholders shall be distributed among the holders of the then outstanding Common Stock, pro rata according to the number of shares of Common Stock held by such holders.

(c) A merger or consolidation in which the Corporation is a constituent party (except any such merger or consolidation involving the Corporation in which the holders of capital stock of the Corporation immediately prior to such merger or consolidation continue to hold immediately following such merger or consolidation a majority by voting power of the capital stock of (1) the surviving or resulting corporation or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such resulting or surviving corporation, in each case in substantially the same proportions as such stockholders held the outstanding stock of the Corporation immediately prior thereto), or the sale, conveyance, lease, or other transfer (including by an irrevocable, exclusive, worldwide license having a duration of not less than the then-remaining life of the patents included in such license) of all or substantially all of the assets of the Corporation (except where such sale, conveyance, lease or other transfer is to a wholly owned subsidiary of the Corporation) shall be deemed to be a liquidation, dissolution or winding up of the Corporation for purposes of this Section 2 unless (A) the holders of a majority of the then outstanding shares of Preferred Stock voting together as a separate class on an as-converted basis, and (B) the holders of a majority of the then outstanding shares of Series C Preferred Stock voting together as a separate class on an as-converted basis, elect otherwise by giving written notice thereof to the Corporation before the effective date of such event. The Corporation shall promptly provide to the holders of shares of Preferred Stock such information concerning the terms of such merger, consolidation, sale, conveyance, lease or other transfer (including by an irrevocable, exclusive, worldwide license having a duration of not less than the then-remaining life of the patents included in such license) and the value of the assets of the Corporation in order to assist the holders of shares of Preferred Stock in determining whether to make such an election. The amount deemed distributed to the holders of Preferred Stock or Common Stock in connection with a transaction referred to in this Section 2(c) shall be the cash or the value of the property, rights or other securities distributed to such holders by the acquiring person, firm or other entity, or in the case of a sale, conveyance, lease or other transfer (including by an irrevocable, exclusive, worldwide license having a duration of not less than the then-remaining life of the patents included in such license) of assets, shall be the cash or the value of the property, rights or other securities distributed to such holder of capital stock of the Corporation in a dividend relating to such transaction. The value or property, rights or other securities shall be determined by and in the good faith discretion of the Board of Directors. Payment of preferential amounts required to be paid to the holders of Preferred Stock shall constitute a redemption of such Preferred Stock, and after such payment such shares of Preferred Stock shall cease to be outstanding for any purpose.

3. Voting.

(a) Each holder of outstanding shares of Preferred Stock shall be entitled to the number of votes equal to the number of whole shares of Common Stock into which the shares of Preferred Stock held by such holder are then convertible (as adjusted from time to time pursuant to Section 4 hereof), at each meeting of stockholders of the Corporation (and written actions of stockholders in lieu of meetings) with respect to any and all matters presented to the stockholders of the Corporation for their action or consideration. Except as provided by law, or as otherwise set forth in this Amended and Restated Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class on any actions to be taken by the stockholders of the Corporation.

(b) In addition to any other vote required by law or this Amended and Restated Certificate of Incorporation, without the written consent or affirmative vote of the holders of a majority of the shares of Series A-1 Preferred Stock then outstanding, the Corporation shall not, either directly or by amendment, merger, consolidation or otherwise, amend or repeal the rights, preferences or privileges of the Series A-1 Preferred Stock set forth in this Amended and Restated Certificate of Incorporation, in a manner that adversely affects the holders of the Series A-1 Preferred Stock.

(c) In addition to any other vote required by law or this Amended and Restated Certificate of Incorporation, without the written consent or affirmative vote of the holders of at least sixty-five percent (65%) of the shares of Series A-2 Preferred Stock then outstanding, the Corporation shall not, either directly or by amendment, merger, consolidation or otherwise, amend or repeal the rights, preferences or privileges of the Series A-2 Preferred Stock set forth in this Amended and Restated Certificate of Incorporation, in a manner that adversely affects the holders of the Series A-2 Preferred Stock.

(d) In addition to any other vote required by law or this Amended and Restated Certificate of Incorporation, without the written consent or affirmative vote of the holders of at least sixty-five percent (65%) of the shares of Series A-3 Preferred Stock then outstanding, the Corporation shall not, either directly or by amendment, merger, consolidation or otherwise, amend or repeal the rights, preferences or privileges of the Series A-3 Preferred Stock set forth in this Amended and Restated Certificate of Incorporation, in a manner that adversely affects the holders of the Series A-3 Preferred Stock.

(e) In addition to any other vote required by law or this Amended and Restated Certificate of Incorporation, without the written consent or affirmative vote of the holders of at least sixty-five percent (65%) of the shares of Series A-4 Preferred Stock then outstanding, the Corporation shall not, either directly or by amendment, merger, consolidation or otherwise, amend or repeal the rights, preferences or privileges of the Series A-4 Preferred Stock set forth in this Amended and Restated Certificate of Incorporation, in a manner that adversely affects the holders of the Series A-4 Preferred Stock.

(f) In addition to any other vote required by law or this Amended and Restated Certificate of Incorporation, without the written consent or affirmative vote of the holders of a majority of the shares of Series B Preferred Stock then outstanding, the Corporation shall not, either directly or by amendment, merger, consolidation or otherwise, amend or repeal the rights, preferences or privileges of the Series B Preferred Stock set forth in this Amended and Restated Certificate of Incorporation, in a manner that adversely affects the holders of the Series B Preferred Stock.

(g) In addition to any other vote required by law or this Amended and Restated Certificate of Incorporation, without the written consent or affirmative vote of the holders of a majority of the shares of Series C Preferred Stock then outstanding, the Corporation shall not, either directly or by amendment, merger, consolidation or otherwise, amend or repeal the rights, preferences or privileges of the Series C Preferred Stock set forth in this Amended and Restated Certificate of Incorporation, in a manner that adversely affects the holders of the Series C Preferred Stock.

(h) The holders of record of the shares of Series A-3 Preferred Stock, exclusively and as a separate class, shall be entitled to elect one (1) director of the Corporation (the "Series A-3 Director"); the holders of record of the shares of Series A-4 Preferred Stock, exclusively and as a separate class, shall be entitled to elect one (1) director of the Corporation (the "Series A-4 Director"); the holders of record of the shares of Series B Preferred Stock, exclusively and as a separate class, shall be entitled to elect one (1) director of the Corporation (the "Series B Director"); and the holders of record of the shares of Series C Preferred Stock, exclusively and as a separate class, shall be entitled to elect one (1) director of the Corporation (the "Series C Director," and, together with the Series A-3 Director, the Series A-4 Director and the Series B Director, the "Preferred Directors"). Any director elected as provided in the preceding sentence may be removed with or without cause by, and only by, the affirmative vote of the holders of the shares of the class or series of capital stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders. If the holders of shares of Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock, as the case may be, fail to elect a sufficient number of directors to fill all directorships for which they are entitled to elect directors, voting exclusively and as a separate class, pursuant to the first sentence of this Subsection 3(h), then any directorship not so filled shall remain vacant until such time as the holders of the Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock, as the case may be, elect a person to fill such directorship by vote or written consent in lieu of a meeting; and no such directorship may be filled by stockholders of the Corporation other than by the stockholders of the Corporation that are entitled to elect a person to fill such directorship, voting exclusively and as a separate class. The holders of record of the shares of Common Stock and of any other class or series of voting stock (including the Preferred Stock), voting together as a single class, shall be entitled to elect the balance of the total number of directors of the Corporation. At any meeting held for the purpose of electing a director, the presence in person or by proxy of the holders of a majority of the outstanding shares of the class or series entitled to elect such director shall constitute a quorum for the purpose of electing such director. Except as otherwise provided in this Subsection 3(h), a vacancy in any directorship filled by the holders of any class or series shall be filled only by vote or written consent in lieu of a meeting of the holders of such class or series or by any remaining director or directors elected by the holders of such class or series pursuant to this Subsection 3(h). The rights of the holders of the Series A-3 Preferred Stock under the first sentence of this Subsection 3(h) shall terminate on the first date following the Series C Original Issue Date (as defined below) on which there are issued and outstanding less than Twenty Two Million Five Hundred Fifty-Two Thousand Eight Hundred Sixty-Five (22,552,865) shares of Series A-3 Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination, or other similar recapitalization with respect to the Series A-3 Preferred Stock). The rights of the holders of the Series A-4 Preferred Stock under the first sentence of this Subsection 3(h) shall terminate on the first date following the Series C Original Issue Date (as defined below) on which there are issued and outstanding less than Fourteen Million Nine Hundred Ninety-Nine Thousand Nine Hundred Ninety-Nine 14,999,999 shares of Series A-4 Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination, or other similar recapitalization with respect to the Series A-4 Preferred Stock). The rights of the holders of the Series B Preferred Stock under the first sentence of this Subsection 3(h) shall terminate on the first date following the Series C Original Issue Date (as

defined below) on which there are issued and outstanding less than Seven Million (7,000,000) shares of Series B Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination, or other similar recapitalization with respect to the Series B Preferred Stock). The rights of the holders of the Series C Preferred Stock under the first sentence of this Subsection 3(h) shall terminate on the first date following the Series C Original Issue Date (as defined below) on which there are issued and outstanding less than Seven Million (7,000,000) shares of Series C Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination, or other similar recapitalization with respect to the Series C Preferred Stock).

(i) In addition to any other rights provided by law, so long as at least Seven Million (7,000,000) shares of Series C Preferred Stock (such number to be proportionately adjusted in the event of any stock splits, stock dividends, recapitalizations or similar events occurring after the date hereof and affecting the number of issued and outstanding shares of Preferred Stock) are outstanding, the Corporation shall not, without the prior written consent or affirmative vote of the holders of a majority of the then outstanding shares of Series C Preferred Stock, voting together as a separate class on an as-converted basis, take any of the following actions (whether by merger, consolidation or otherwise):

(i) effect or obligate itself to effect, any merger, sale, lease, assignment, transfer or other conveyance (including by an irrevocable, exclusive, worldwide license having a duration of not less than the then-remaining life of the patents included in such license) of all or substantially all of the assets of the Corporation and its subsidiaries, taken as a whole, or any consolidation, merger or reorganization involving the Corporation or any subsidiary thereof, or any dissolution, liquidation or winding up of the Corporation;

(ii) authorize or issue any new or existing class or classes or series of capital stock having any preference or priority as to dividends, liquidation preferences or redemption rights superior to or on a parity with the Series C Preferred Stock, or authorize or issue shares of stock of the Corporation of any class or any bonds, debentures, notes or other obligations convertible into or exchangeable for, or having rights to purchase, any shares of stock of the Corporation having any preference or priority as to dividends, liquidation preferences or redemption rights superior to or on a parity with the Series C Preferred Stock;

(iii) amend or delete any provision of, or add any provision to, this Amended and Restated Certificate of Incorporation;

(iv) purchase or redeem or pay any dividend on any capital stock prior to the Series C Preferred Stock;

(v) increase the number of shares of Common Stock available to be granted to employees, directors or consultants of the Corporation pursuant to any of the Corporation's equity incentive plans, except as provided in any such plan that has been approved either by the Board of Directors, including a majority of the Preferred Directors;

(vi) enter into any transaction with any affiliate of the Corporation (as defined in Rule 144 under the Securities Act (as defined below)) except for compensation and expense reimbursement arrangements with officers and outside directors in the ordinary course of business;

(vii) grant any contractual rights to register shares of the Company's capital stock under the Securities Act (other than pursuant to the Seventh Amended and Restated Investor Rights Agreement, dated on or about the date this Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, by and among the Corporation and the other parties named therein, as such Seventh Amended and Restated Investor Rights Agreement may be amended from time to time in accordance with its terms (the "Investor Rights Agreement");

(viii) reclassify any shares of capital stock of the Corporation; or

(ix) change the number of seats on the Board of Directors from eight (8) to any other number.

(j) In addition to any other rights provided by law, so long as at least Twenty Million (20,000,000) shares of Preferred Stock (such number to be proportionately adjusted in the event of any stock splits, stock dividends, recapitalizations or similar events occurring after the date hereof and affecting the number of issued and outstanding shares of Preferred Stock) are outstanding, the Corporation shall not, without the prior written consent or affirmative vote of the holders of a majority of the then outstanding shares of Preferred Stock, voting together as a separate class on an as-converted basis, take any of the following actions (whether by merger, consolidation or otherwise):

(i) effect or obligate itself to effect, any merger, sale, lease, assignment, transfer or other conveyance (including by an irrevocable, exclusive, worldwide license having a duration of not less than the then-remaining life of the patents included in such license) of all or substantially all of the assets of the Corporation and its subsidiaries, taken as a whole, or any consolidation, merger or reorganization involving the Corporation or any subsidiary thereof, or any dissolution, liquidation or winding up of the Corporation;

(ii) authorize or issue any new or existing class or classes or series of capital stock having any preference or priority as to dividends, liquidation preferences or redemption rights superior to or on a parity with the Preferred Stock, or authorize or issue shares of stock of the Corporation of any class or any bonds, debentures, notes or other obligations convertible into or exchangeable for, or having rights to purchase, any shares of stock of the Corporation having any preference or priority as to dividends, liquidation preferences or redemption rights superior to or on a parity with the Preferred Stock;

(iii) amend or delete any provision of, or add any provision to, this Amended and Restated Certificate of Incorporation;

(iv) increase the number of shares of Common Stock available to be granted to employees, directors or consultants of the Corporation pursuant to any of the Corporation's equity incentive plans, except as provided in any such plan that has been approved either by the Board of Directors, including a majority of the Preferred Directors;

(v) enter into any transaction with any affiliate of the Corporation (as defined in Rule 144 under the Securities Act (as defined below)) except for compensation and expense reimbursement arrangements with officers and outside directors in the ordinary course of business;

(vi) grant any contractual rights to register shares of the Company's capital stock under the Securities Act (other than pursuant to the Investor Rights Agreement);

(vii) reclassify any shares of capital stock of the Corporation; or

(viii) increase or decrease the size of the Board of Directors.

As used in this Amended and Restated Certificate of Incorporation, "Securities Act" means the Securities Act of 1933, as amended, or any successor federal statute, and the rules and regulations of the Securities and Exchange Commission issued under such Act, as they each may, from time to time, be in effect.

4. Optional Conversion. The holders of the Preferred Stock shall have conversion rights as follows (the "Conversion Rights"):

(a) Right to Convert. Each share of Series A-1 Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing \$0.4162 (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-1 Preferred Stock) by the Series A-1 Conversion Price (as defined below) in effect at the time of conversion. Each share of Series A-2 Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing \$0.3397 (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-2 Preferred Stock) by the Series A-2 Conversion Price (as defined below) in effect at the time of conversion. Each share of Series A-3 Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing \$0.6245 (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-3 Preferred Stock) by the Series A-3 Conversion Price (as defined below) in effect at the time of conversion. Each share of Series A-4 Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing \$0.30 (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and

outstanding shares of Series A-4 Preferred Stock) by the Series A-4 Conversion Price (as defined below) in effect at the time of conversion. Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing \$0.30 (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series B Preferred Stock) by the Series B Conversion Price (as defined below) in effect at the time of conversion. Each share of Series C Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing \$0.38811 (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series C Preferred Stock) by the Series C Conversion Price (as defined below) in effect at the time of conversion. The "Series A-1 Conversion Price" shall mean \$0.4162 at the date hereof, the "Series A-2 Conversion Price" shall mean \$0.3397 at the date hereof, the "Series A-3 Conversion Price" shall mean \$0.6245 at the date hereof, the "Series A-4 Conversion Price" shall mean \$0.30 at the date hereof, the "Series B Conversion Price" shall mean \$0.30 at the date hereof, and the "Series C Conversion Price" shall mean \$0.38811 at the date hereof. The "Conversion Price" shall mean, collectively, the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, and Series C Conversion Price, as applicable. Such initial Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, and Series C Conversion Price, and the rate at which shares of Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, and Series C Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below.

(i) In the event of a notice of redemption of any shares of Preferred Stock pursuant to Section 6 hereof, the Conversion Rights of the shares designated for redemption shall terminate at the close of business on the full day preceding the date fixed for redemption, unless the redemption price is not fully paid when due, in which case the Conversion Rights for such shares shall continue until such price is paid in full. In the event of a liquidation, dissolution or winding up of the Corporation, the Conversion Rights shall terminate at the close of business on the second full day preceding the date fixed for the payment of any amounts distributable on such event to the holders of Preferred Stock.

(b) Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the then effective Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price or Series C Conversion Price, as the case may be.

(c) Mechanics of Conversion.

(i) In order for a holder of Preferred Stock to voluntarily convert shares of Preferred Stock into shares of Common Stock, such holder shall surrender the certificate or certificates for such shares of Preferred Stock (or, if such holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate), at the office of the transfer agent for the Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent), together with written notice that such holder elects to convert all or any number of the shares of Preferred Stock represented by such certificate or certificates and, if applicable, any event on which such conversion is contingent. Such notice shall state such holder's name or the names of the nominees in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. If required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by a written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or his or its attorney duly authorized in writing. The date of receipt of such certificates (or lost certificate affidavit and agreement) and notice by the transfer agent (or by the Corporation if the Corporation serves as its own transfer agent) shall be the conversion date ("Conversion Date"), and such conversion shall be effective at the close of business on the Conversion Date. The Corporation shall, as soon as practicable after the Conversion Date, issue and deliver to such holder of Preferred Stock, or to his or its nominees, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled, together with cash in lieu of any fraction of a share.

(ii) The Corporation shall at all times when any Preferred Stock shall be outstanding, reserve and keep available out of its authorized but unissued stock, for the purpose of effecting the conversion of the Preferred Stock, such number of its duly authorized shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding 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 the Preferred Stock, the Corporation shall take such corporate action as may 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 Amended and Restated Certificate of Incorporation. Before taking any action which would cause an adjustment reducing the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price below the then par value of the shares of Common Stock issuable upon conversion of the Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock, the Corporation will take any corporate action which may, in the opinion of its counsel, be necessary in order that the Corporation may validly and legally issue fully paid and nonassessable shares of Common Stock at such adjusted Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price.

(iii) Upon any such conversion, no adjustment to the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price shall be made for any declared but unpaid dividends on the Preferred Stock surrendered for conversion or on the Common Stock delivered upon conversion.

(iv) All shares of Preferred Stock which shall have been surrendered for conversion as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall immediately cease and terminate at the close of business on the Conversion Date, except only the right of the holders thereof to receive shares of Common Stock in exchange therefor, to receive payment in lieu of any fraction of a share otherwise issuable upon such conversion as provided above and to receive payment of any dividends declared but unpaid thereon as of the close of business on the Conversion Date. Any shares of Preferred Stock so converted shall be retired and cancelled and shall not be reissued, and the Corporation (without the need for stockholder action) may from time to time take such appropriate action as may be necessary to reduce the authorized number of shares of such series of Preferred Stock accordingly.

(v) The Corporation shall pay any and all issue and other taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Preferred Stock pursuant to this Section 4. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the Corporation the amount of any such tax or has established, to the satisfaction of the Corporation, that such tax has been paid.

(d) Adjustments to Conversion Prices for Diluting Issues:

(i) Special Definitions. For purposes of this Article FOURTH, the following definitions shall apply:

(A) "Option" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(B) "Series C Original Issue Date" shall mean the first date on which a share of Series C Preferred Stock was issued.

(C) "Convertible Securities" shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

(D) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to Subsection 4(d) (iii) below, deemed to be issued) by the Corporation after the Series C Original Issue Date other than:

(I) shares of Common Stock issued or issuable upon conversion or exchange of any Convertible Securities or exercise of any Options outstanding on the Series C Original Issue Date;

(II) shares of Common Stock issued or issuable as a dividend or distribution on Preferred Stock;

(III) shares of Common Stock issued or issuable by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by Subsection 4(e) or 4(f) below;

(IV) shares of Common Stock issued or issuable in a firm underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended;

(V) shares of Common Stock (or Options or Convertible Securities with respect thereto) authorized for issuance as of November 9, 2016 under the Corporation's 2005 Equity Incentive Plan, as amended (the "2005 Plan"), and the Corporation's 2016 Equity Incentive Plan, as amended (the "2016 Plan", and together with the 2005 Plan, the "Plans"), that are issued or deemed issued to employees or directors of, or consultants to, the Corporation or any of its subsidiaries pursuant to the Plans, or any additional shares of Common Stock (or Options or Convertible Securities with respect thereto) authorized for issuance pursuant to any amendment to the Plans, or pursuant to any other plan, agreement or arrangement, that are issued or deemed issued to such employees, directors or consultants, provided that any such amendment or other plan, agreement or arrangement has been approved by a majority of the Board of Directors (which majority must include a majority of the Preferred Directors);

(VI) shares of Common Stock (or Options or Convertible Securities with respect thereto) issued solely in consideration for the acquisition (whether by merger or otherwise) by the Corporation or any of its subsidiaries of all or substantially all of the stock or assets of any other entity; provided that such transaction, and the issuance of shares in connection therewith, has been approved by a majority of the Board of Directors (which majority must include a majority of the Preferred Directors);

(VII) shares of Common Stock (or Options or Convertible Securities with respect thereto) issued or issuable to financial institutions or lessors in connection with commercial credit agreements, equipment financings or similar transactions; provided that such transaction, and the issuance of shares in connection therewith, has been approved by a majority of the Board of Directors (which majority must include a majority of the Preferred Directors);

(VIII) shares of Common Stock (or Options or Convertible Securities with respect thereto) issued or issuable in connection with strategic transactions involving the Company and other entities, including joint ventures, manufacturing, marketing or distribution arrangements and technology transfer or development arrangements; provided that such strategic transactions, and the issuance of shares in connection therewith, has been approved by a majority of the Board of Directors (which majority must include a majority of the Preferred Directors); or

(IX) shares of Common Stock (or Options or Convertible Securities with respect thereto) issued or issuable pursuant to that certain Series C Convertible Preferred Stock and Warrant Purchase Agreement, by and among the Corporation and the investors party thereto, as amended from time to time.

(ii) No Adjustment of Conversion Prices. No adjustment in the number of shares of Common Stock into which the Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock, respectively, is convertible shall be made, by adjustment in the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price thereof: (a) unless the consideration per share (determined pursuant to Subsection 4(d)(vi)) for an Additional Share of Common Stock issued or deemed to be issued by the Corporation is less than the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price in effect immediately prior to the issue of such Additional Shares of Common Stock, or (b) if prior to such issuance, the Corporation receives written notice from the holders of at least a majority of the then outstanding shares of Series A-1 Preferred Stock, the holders of at least a majority of the then outstanding shares of Series A-2 Preferred Stock, the holders of at least a majority of the then outstanding shares of Series A-3 Preferred Stock, the holders of at least a majority of the then outstanding shares of Series A-4 Preferred Stock, the holders of at least a majority of the then outstanding shares of Series B Preferred Stock, or the holders of at least a majority of the then outstanding shares of Series C Preferred Stock, as the case may be, agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock.

(iii) Issue of Securities Deemed Issue of Additional Shares of Common Stock. If the Corporation at any time or from time to time after the Series C Original Issue Date shall issue any Options (excluding Options covered by Subsection 4(d)(i)(D)(I), (IV), (V), (VI) and (VII) above) or Convertible Securities (excluding Convertible Securities covered by Subsection 4(d)(i)(D)(I), (V), (VI) and (VII) above) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date, provided that in any such case in which Additional Shares of Common Stock are deemed to be issued:

(A) No adjustment or further adjustment in the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price shall be made upon the subsequent issue of Convertible Securities or shares of Common Stock upon the exercise of such Options or conversion or exchange of such Convertible Securities;

(B) If such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any increase or decrease in the consideration payable to the Corporation, upon the exercise, conversion or exchange thereof, the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon any such increase or decrease becoming effective, be recomputed to reflect such increase or decrease insofar as it affects such Options or the rights of conversion or exchange under such Convertible Securities;

(C) Upon the expiration or termination of any unexercised Option, the affected Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price shall be readjusted to the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price that would be in effect had such Option never been issued, and the Additional Shares of Common Stock deemed issued as the result of the original issue of such Option shall not be deemed issued for the purposes of any subsequent adjustment of the affected Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price;

(D) In the event of any change in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security, including, but not limited to, a change resulting from the anti-dilution provisions thereof (but excluding any change resulting from any events resulting in changes under Section 4(e) or 4(f) below), the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price then in effect shall forthwith be readjusted to such Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price as would have obtained had the adjustment which was made upon the issuance of such Option or Convertible Security not exercised or converted prior to such change been made upon the basis of such change; and

(E) No readjustment pursuant to clause (B), (C) or (D) above shall have the effect of increasing the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price to an amount which exceeds the lower of (i) such Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price on the original adjustment date, or (ii) the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price that would have resulted from any issuances of Additional Shares of Common Stock between the original adjustment date and such readjustment date.

In the event the Corporation, after the Series C Original Issue Date, amends the terms of any such Options or Convertible Securities (whether such Options or Convertible Securities were outstanding as of the Series C Original Issue Date or were issued after the Series C Original Issue Date), then such Options or Convertible Securities, as so amended, shall be deemed to have been issued after the Series C Original Issue Date and the provisions of this Subsection 4(d)(iii) shall apply.

(iv) Adjustment of Conversion Price Upon Issuance of Additional Shares of Common Stock. In the event the Corporation shall at any time after the Series C Original Issue Date issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Subsection 4(d)(iii), but excluding shares issued as a stock split or combination as provided in Subsection 4(e) or upon a dividend or distribution as provided in Subsection 4(f)), without consideration or for a consideration per share less than the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price in effect immediately prior to such issue, then and in such event, such Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price in effect immediately prior to such issue of Additional Shares of Common Stock by a fraction, (A) the numerator of which shall be (1) the number of shares of Common Stock outstanding immediately prior to such issue (calculated assuming conversion of all issued and outstanding shares of Preferred Stock as well as all other issued and outstanding Convertible Securities, and the exercise, exchange or conversion of all then outstanding Options) plus (2) the number of shares of Common Stock which the aggregate consideration received or to be received by the Corporation for the total number of Additional Shares of Common Stock so issued would purchase at the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price in effect immediately prior to such issue of Additional Shares of Common Stock; and (B) the denominator of which shall be the number of shares of Common Stock outstanding immediately prior to such issue (calculated assuming conversion of all issued and outstanding shares of Preferred Stock as well as all other issued and outstanding Convertible Securities, and the exercise, exchange or conversion of all then outstanding Options) plus the number of such Additional Shares of Common Stock so issued; provided that, the number of shares of Common Stock deemed issuable upon exercise or conversion of such outstanding Options and Convertible Securities shall not give effect to any adjustments to the conversion price or conversion rate of such Options or Convertible Securities resulting from the issuance of Additional Shares of Common Stock that is the subject of this calculation.

(v) [Reserved.]

(vi) Determination of Consideration. For purposes of this Subsection 4(d), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows:

(A) Cash and Property: Such consideration shall:

(I) insofar as it consists of cash, be computed at the aggregate of cash received by the Corporation, excluding amounts paid or payable for accrued interest;

(II) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the Board of Directors; and

(III) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (I) and (II) above, as determined in good faith by the Board of Directors.

(B) Options and Convertible Securities. The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to Subsection 4(d)(iii), relating to Options and Convertible Securities, shall be determined by dividing:

(I) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(II) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities.

(vii) Multiple Closing Dates. In the event the Corporation shall issue on more than one date Additional Shares of Common Stock which are comprised of shares of the same series or class of Preferred Stock, and such issuance dates occur within a period of no more than one hundred eighty (180) days, then, upon the final such issuance, the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price shall be adjusted to give effect to all such issuances as if they occurred on the date of the final such issuance (and without giving effect to any adjustments as a result of such prior issuances within such period).

(e) Adjustment for Stock Splits and Combinations. If the Corporation shall at any time or from time to time after the Series C Original Issue Date effect a subdivision of the outstanding Common Stock without a comparable subdivision of the Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock, the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price then in effect immediately before that subdivision shall be proportionately decreased so that the number of shares of Common Stock

issuable on conversion of each share of Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock shall be increased in proportion to such increase in the aggregate number of shares of Common Stock outstanding. If the Corporation shall at any time or from time to time after the Series C Original Issue Date combine the outstanding shares of Common Stock without a comparable combination of the Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock, the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price then in effect immediately before the combination shall be proportionately 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 the aggregate number of shares of Common Stock outstanding. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision or combination becomes effective.

(f) Adjustment for Certain Dividends and Distributions. In the event the Corporation at any time, or from time to time after the Series C Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price then in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price then in effect by a fraction:

(i) the numerator of which shall be the total number of shares of Common Stock actually issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and

(ii) the denominator of which shall be the total number of shares of Common Stock actually issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution to the holders of Common Stock; provided, however, that if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price shall be adjusted pursuant to this paragraph as of the time of actual payment of such dividends or distributions; and provided further, however, that no such adjustment shall be made with respect to the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price if the holders of Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B

Preferred Stock, or Series C Preferred Stock, as the case may be, simultaneously receive (i) a dividend or other distribution of shares of Common Stock in a number equal to the number of shares of Common Stock as they would have received if all outstanding shares of Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock had been converted into Common Stock on the date of such event or (ii) a dividend or other distribution of shares of Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock which are convertible, as of the date of such event, into such number of shares of Common Stock as is equal to the number of additional shares of Common Stock being issued with respect to each share of Common Stock in such dividend or distribution.

(g) Adjustments for Other Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series C Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event each holder of Preferred Stock shall receive, simultaneously with the distribution to the holders of Common Stock, a dividend or other distribution of such securities in an amount equal to the amount of such securities as such holder would have received if all shares of Preferred Stock owned by such holder had been converted into Common Stock on the date of such event.

(h) Adjustment for Reclassification, Exchange, or Substitution. If the Common Stock issuable upon the conversion of the Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, or otherwise (other than a subdivision or combination of shares or stock dividend provided for above, or a reorganization, merger, consolidation, or sale of assets provided for below), then and in each such event the holder of each such share of Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable, upon such reorganization, reclassification, or other change, by holders of the number of shares of Common Stock into which such shares of Preferred Stock might have been converted immediately prior to such reorganization, reclassification, or change, all subject to further adjustment as provided herein.

(i) Adjustment for Merger or Reorganization, etc. In case of any consolidation or merger of the Corporation with or into another corporation or the sale of all or substantially all of the assets of the Corporation to another corporation (other than a consolidation, merger or sale which is covered by Subsection 2(c)), each share of Preferred Stock shall thereafter be convertible (or shall be converted into a security which shall be convertible) into the kind and amount of shares of stock or other securities or property to which a holder of the number of shares of Common Stock of the Corporation deliverable upon conversion of such Preferred Stock would have been entitled upon such consolidation, merger or sale; and, in such case, appropriate adjustment (as determined in good faith by the Board of Directors) shall be made in the application of the provisions in this Section 4 set forth with respect to the rights and interest thereafter of the holders of Preferred Stock to the end that the provisions set forth in this Section 4 (including provisions with respect to changes in and other adjustments of the Series A- 1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4

Conversion Price, Series B Conversion Price, or Series C Conversion Price) shall thereafter be applicable, as nearly as reasonably may be, in relation to any shares of stock or other property thereafter deliverable upon the conversion of the Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock.

(j) No Impairment. The Corporation will not, by amendment of this Amended and Restated Certificate of Incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms to be observed or performed under this Section 4 by the Corporation, without the written consent of the holders of a majority of the then outstanding shares of Preferred Stock, consenting together as a separate class on an as-converted basis, but will at all times in good faith assist in the carrying out of all the provisions of this Section 4 and in the taking of all such action as may be necessary or appropriate in order to protect the Conversion Rights of the holders of the Preferred Stock against impairment.

(k) Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price pursuant to this Section 4, the Corporation at its expense shall promptly compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of Preferred Stock a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. 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 similar certificate setting forth (i) such adjustments and readjustments, (ii) the Series A-1 Conversion Price, Series A-2 Conversion Price, Series A-3 Conversion Price, Series A-4 Conversion Price, Series B Conversion Price, or Series C Conversion Price then in effect, and (iii) the number of shares of Common Stock and the amount, if any, of other property which then would be received upon the conversion of Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series A-3 Preferred Stock, Series A-4 Preferred Stock, Series B Preferred Stock, or Series C Preferred Stock.

(1) Notice of Record Date. In the event:

(i) that the Corporation declares a dividend (or any other distribution) on its Common Stock payable in Common Stock or other securities of the Corporation;

(ii) that the Corporation subdivides or combines its outstanding shares of Common Stock;

(iii) of any reclassification of the Common Stock of the Corporation (other than a subdivision or combination of its outstanding shares of Common Stock or a stock dividend or stock distribution thereon), or of any consolidation or merger of the Corporation into or with another corporation, or of the sale of all or substantially all of the assets of the Corporation; or

(iv) of the involuntary or voluntary dissolution, liquidation or winding up of the Corporation;

then the Corporation shall use reasonable efforts to cause to be filed at its principal office or at the office of the transfer agent of the Preferred Stock, and shall cause to be mailed to the holders of the Preferred Stock or such transfer agent, at least ten (10) days prior to the date specified in (A) below or twenty (20) days before the date specified in (B) below, a notice stating

(A) the record date of such dividend, distribution, subdivision or combination, or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, subdivision or combination are to be determined, or

(B) the date on which such reclassification, consolidation, merger, sale, dissolution, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities or other property deliverable upon such reclassification, consolidation, merger, sale, dissolution or winding up; provided, however, that the Corporation's failure to provide any notice required under this Section 4(1) after using reasonable efforts shall not be deemed a default, breach or violation of this Section 4(1).

5. Mandatory Conversion.

(a) Upon the earlier of (i) the closing of the sale of shares of Common Stock in a firm underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, resulting in at least Forty Million Dollars (\$40,000,000) (net of any underwriting discount and commissions) to the Corporation or (ii) a date agreed to in writing by a vote of the holders of a majority of the then outstanding shares of Preferred Stock, voting together as a separate class on an as-converted basis (each a "Mandatory Conversion Event"), all outstanding shares of Preferred Stock shall automatically be converted into shares of Common Stock, at the then effective conversion rate.

(b) All holders of record of shares of Preferred Stock shall be given written notice of the Mandatory Conversion Event and the place and date (the "Mandatory Conversion Date") designated for mandatory conversion of all such shares of Preferred Stock pursuant to this Section 5. Such notice need not be given in advance of the occurrence of the Mandatory Conversion Event. Such notice shall be sent by first class or registered mail, postage prepaid, or given by electronic communication in compliance with the provisions of the General Corporation Law, to each record holder of Preferred Stock. Upon receipt of such notice, each holder of shares of Preferred Stock shall surrender his or its certificate or certificates for all such shares to the Corporation at the place designated in such notice, and shall thereafter receive certificates for the number of shares of Common Stock to which such holder is entitled pursuant to this Section 5. On the Mandatory Conversion Date, all outstanding shares of Preferred Stock shall be deemed to have been converted into shares of Common Stock, which shall be deemed to be outstanding of record, and all rights with respect to the Preferred Stock so converted, including the rights, if any, to receive notices and vote (other than as a holder of Common Stock) will terminate, except only the rights of the holders thereof, upon surrender of their certificate or certificates therefor, to

receive certificates for the number of shares of Common Stock into which such Preferred Stock has been converted, and payment of any declared but unpaid dividends thereon. If so required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by his or its attorney duly authorized in writing. As soon as practicable after the Mandatory Conversion Date and the surrender of the certificate or certificates for Preferred Stock, the Corporation shall cause to be issued and delivered to such holder, or on his or its written order, a certificate or certificates for the number of full shares of Common Stock issuable on such conversion in accordance with the provisions hereof and cash as provided in Subsection 4(b) in respect of any fraction of a share of Common Stock otherwise issuable upon such conversion.

(c) All certificates evidencing shares of Preferred Stock which are required to be surrendered for conversion in accordance with the provisions hereof shall, from and after the Mandatory Conversion Date, be deemed to have been retired and cancelled and the shares of Preferred Stock represented thereby converted into Common Stock for all purposes, notwithstanding the failure of the holder or holders thereof to surrender such certificates on or prior to such date. Such converted Preferred Stock may not be reissued, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock accordingly.

6. Redemption.

(a) Unless prohibited by Delaware law governing distributions to stockholders, the Preferred Stock shall, if required as set forth below, be redeemed by the Corporation at a price per share equal to the applicable Redemption Price (as defined below). As used in this Amended and Restated Certificate of Incorporation, "Redemption Price" means in the case of the Series A-1 Preferred Stock, \$0.4162 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-1 Preferred Stock) plus all declared but unpaid dividends, in the case of the Series A-2 Preferred Stock, \$0.3397 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-2 Preferred Stock) plus all declared but unpaid dividends, in the case of the Series A-3 Preferred Stock, \$0.6245 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-3 Preferred Stock) plus all declared but unpaid dividends, in the case of the Series A-4 Preferred Stock, \$0.30 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series A-4 Preferred Stock) plus all declared but unpaid dividends, in the case of the Series B Preferred Stock, \$0.30 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series B Preferred Stock) plus all declared but unpaid dividends, and in the case of the Series C Preferred Stock, \$0.38811 per share (subject to appropriate adjustment in the event of any stock dividend, stock split,

combination or other similar recapitalization occurring after the date hereof and affecting the number of issued and outstanding shares of Series C Preferred Stock) plus all declared but unpaid dividends. Such redemption shall occur in three annual equal installments commencing sixty (60) days after receipt by the Corporation, at any time on or after the fifth anniversary of the Series C Original Issue Date, of written notice requesting redemption of all shares of Preferred Stock from the holders of a majority of the then outstanding shares of Preferred Stock, as follows (which must include at least 50% of the then outstanding shares of Series B Preferred Stock and 50% of the then-outstanding shares of Series C Preferred Stock):

(i) on the sixtieth (60th) day after receipt by the Corporation of the written notice described in Section 6(a), the Corporation shall redeem one-third of the shares of Preferred Stock then outstanding;

(ii) on the one-year anniversary of the redemption made pursuant to Section 6(a)(i) above, the Corporation shall redeem fifty percent (50%) of the shares of Preferred Stock then outstanding; and

(iii) on the one-year anniversary of the redemption made pursuant to Section 6(a)(ii) above, the Corporation shall redeem all of the shares of Preferred Stock then outstanding.

The date of each redemption pursuant to Section 6(a) is referred to as a "Redemption Date". On each Redemption Date, the Corporation shall redeem the number of shares of Preferred Stock determined as set forth in this Section 6(a) on a pro rata basis in accordance with the number of shares of Preferred Stock owned by each holder of Preferred Stock. Upon receipt of a redemption request, the Company shall apply all of its assets to any such redemption, and to no other corporate purpose, except to the extent prohibited by Delaware law governing distributions to stockholders. If on any Redemption Date Delaware law governing distributions to stockholders prevents the Corporation from redeeming all of the Preferred Stock to be redeemed on any Redemption Date, the Corporation shall redeem a pro rata portion of each holder's shares of Preferred Stock, based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the Corporation were able to redeem all such shares under such law and shall redeem the remaining shares to have been redeemed as soon as it may lawfully do so under such law.

(b) Written notice of the mandatory redemption (the "Redemption Notice") shall be mailed, postage prepaid, to each holder of record of Preferred Stock, not less than thirty (30) days prior to each Redemption Date. Each Redemption Notice shall state:

(i) the number of shares of each class of Preferred Stock held by the holder that the Corporation shall redeem on the Redemption Date specified in the Redemption Notice;

(ii) the Redemption Date and the Redemption Price;

(iii) the date upon which the holder's right to convert such shares terminates (as determined in accordance with Section 4(a)); and

(iv) that the holder is to surrender to the Corporation, in the manner and at the place designated, his certificate or certificates representing the shares of Preferred Stock to be redeemed.

(c) Surrender of Certificates; Payment. On or before the applicable Redemption Date, each holder of shares of Preferred Stock to be redeemed on such Redemption Date, unless such holder has exercised his right to convert such shares as provided in Section 4 hereof, shall surrender the certificate or certificates representing such shares to the Corporation (or, if such holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate), in the manner and at the place designated in the Redemption Notice, and thereupon the Redemption Price for such shares shall be payable to the order of the person whose name appears on such certificate or certificates as the owner thereof, and each surrendered certificate shall be canceled and retired. In the event less than all of the shares of Preferred Stock represented by a certificate are redeemed, a new certificate representing the unredeemed shares of Preferred Stock shall promptly be issued to such holder.

(d) Rights Subsequent to Redemption. If the Redemption Notice shall have been duly given, and if on the applicable Redemption Date the Redemption Price payable upon redemption of the shares of Preferred Stock to be redeemed on such Redemption Date is paid or tendered for payment, then whether or not the certificates evidencing any of the shares of Preferred Stock so called for redemption have been surrendered, dividends with respect to such shares of Preferred Stock shall cease to accrue after such Redemption Date and all rights with respect to such shares shall forthwith after the Redemption Date terminate, except only the right of the holders to receive the Redemption Price without interest upon surrender of their certificate or certificates (or lost certificate affidavit and agreement) therefor.

(e) Any shares of Preferred Stock redeemed pursuant to this Section 6 will be cancelled and will not under any circumstances be reissued, sold or transferred and the Corporation may from time to time take such appropriate action as may be necessary to reduce the authorized shares of Preferred Stock accordingly.

7. Waiver. Except where a different vote is specified in the Certificate of Incorporation or required by the General Corporation Law, any of the rights, powers, preferences and other terms of a series of Preferred Stock set forth herein may be waived on behalf of all holders of such series of Preferred Stock by the affirmative written consent or vote of the holders of a majority of the shares of such series of Preferred Stock then outstanding.

8. Notices. Any notice required by the provisions hereof to be given to a holder of shares of Preferred Stock shall be deemed sent to such holder if deposited in the United States mail, postage prepaid, and addressed to such holder at his, her or its address appearing on the books of the Corporation or given by electronic communication in compliance with the provisions of General Corporation Law.

FIFTH: The Corporation is to have perpetual existence.

SIXTH: Meetings of shareholders may be held within or without the State of Delaware, as the bylaws provide. The books of the Corporation may be kept outside the State of Delaware at the main office of the Corporation or such place or places as may be designated from time to time by the Board of Directors or in the bylaws of the Corporation. Elections of directors need not be by written ballot unless the bylaws of the Corporation so provide.

SEVENTH: The Board of Directors of the Corporation is expressly authorized to exercise all powers granted to the directors by law except insofar as such powers are limited or denied herein or in the bylaws of the Corporation. In furtherance of such powers, the Board of Directors is expressly authorized to adopt, amend or repeal the bylaws of the Corporation.

EIGHTH: 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, except for liability (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the General Corporation Law, or (iv) for any transaction from which the director derived any improper personal benefit. If the General Corporation Law is amended after the effective date of this Amended and Restated Certificate of Incorporation 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 General Corporation Law. No amendment, modification or repeal of this Article shall adversely affect the rights and protection afforded to a director of the Corporation under this Article for acts or omissions occurring prior to such amendment modification or repeal.

NINTH: The Corporation shall, to the fullest extent permitted by the General Corporation Law, as amended from time to time, indemnify each person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him or on his behalf in connection with such action, suit or proceeding and any appeal therefrom.

Indemnification may include payment by the Corporation in defending an action or proceeding in advance of the final disposition of such action or proceeding upon receipt of any undertaking by the person indemnified to repay such payment if it is ultimately determined that such person is not entitled to indemnification under this Article, which undertaking may be accepted without reference to the financial ability of such person to make such repayments.

The Corporation shall not indemnify any such person seeking indemnification in connection with a proceeding (or part thereof) initiated by such person unless the initiation thereof was approved by the Board of Directors.

The indemnifications rights provided in this Article (A) shall not be deemed exclusive of any other rights to which those indemnified may be entitled under any law, agreement or vote of stockholders or disinterested directors or otherwise, and (B) shall inure to the benefit of the heirs, executors and administrators of such persons. The Corporation may, to the extent authorized from time to time by its Board of Directors, grant indemnification rights to other employees or agents of the Corporation or other persons serving the Corporation and such rights may be equivalent to, or greater or less than, those set forth in this Article.

Any person seeking indemnification under this Article shall be deemed to have met the standard of conduct required for such indemnification unless the contrary shall be established.

Any amendment or repeal of the provisions of this Article shall not adversely affect any right or protection of a director or officer of this Corporation with respect to any act or omission of such director or officer occurring prior to such amendment or appeal.

TENTH: The Corporation renounces any interest or expectancy of the Corporation in, or in being offered an opportunity to participate in, any Excluded Opportunity. An "Excluded Opportunity" is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of, (i) any director of the Corporation who is not an employee of the Corporation or any of its subsidiaries, or (ii) any holder of Preferred Stock or any partner, member, director, stockholder, employee or agent of any such holder, other than someone who is an employee of the Corporation or any of its subsidiaries (collectively, "Covered Persons"), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person's capacity as a director of the Corporation.

ELEVENTH: The Corporation reserves the right at any time, and from time to time, to amend, alter, change or repeal any provision contained in this Amended and Restated Certificate of Incorporation, and to add or insert other provisions authorized by the laws of the State of Delaware at the time in force, in the manner now or hereafter prescribe by law; and all rights, preferences and privileges of whatsoever nature conferred upon stockholders, directors or any other persons whomsoever by and pursuant to this Amended and Restated Certificate of Incorporation in its present form or as hereafter amended are granted subject to the rights reserved in this Article.

IN WITNESS WHEREOF, the Corporation has caused this Amended and Restated Certificate of Incorporation to be signed by its President and Chief Executive Officer on this 10th day of January, 2020.

/s/ Maria Palasis

Name: Maria Palasis

Title: President and Chief Executive Officer,
Lyra Therapeutics, Inc.

BYLAWS
OF
ARSENAL MEDICAL, INC.

ARTICLE I
STOCKHOLDERS

SECTION 1. Place of Meetings. All meetings of stockholders shall be held at the principal office of the corporation or at such other place as may be named in the notice.

SECTION 2. Annual Meeting. The annual meeting of stockholders for the election of directors and the transaction of such other business as may properly come before the meeting shall be held on such date and at such hour and place as the directors or an officer designated by the directors may determine. If the annual meeting is not held on the date designated therefor, the directors shall cause the meeting to be held as soon thereafter as convenient.

SECTION 3. Special Meetings. Special meetings of the stockholders may be called at any time by the President, the Chairman of the Board, if any, or the Board of Directors, or by the Secretary or any other officer upon the written request of one or more stockholders holding of record at least a majority of the outstanding shares of stock of the corporation entitled to vote at such meeting. Such written request shall state the purpose or purposes of the proposed meeting. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting.

SECTION 4. Notice of Meetings. Except where some other notice is required by law, written notice of each meeting of stockholders, stating the place, date and hour thereof and the purposes for which the meeting is called, shall be given by or under the direction of the Secretary, not less than ten nor more than sixty days before the date fixed for such meeting, to each stockholder entitled to vote at such meeting of record at the close of business on the day fixed by the Board of Directors as a record date for the determination of the stockholders entitled to vote at such meeting or, if no such date has been fixed, of record at the close of business on the day before the day on which notice is given. Notice shall be given personally to each stockholder or left at his or her residence or usual place of business or mailed postage prepaid and addressed to the stockholder at his or her address as it appears upon the records of the corporation. In case of the death, absence, incapacity or refusal of the Secretary, such notice may be given by a person designated either by the Secretary or by the person or persons calling the meeting or by the Board of Directors. A waiver of such notice in writing, signed by the person or persons entitled to said notice, whether before or after the time stated therein, shall be deemed equivalent to such notice. Attendance of a person at a meeting of stockholders shall constitute a waiver of notice of such meeting, except when the stockholder 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 need be specified in any written waiver of notice. Except as required by statute, notice of any adjourned meeting of the stockholders shall not be required.

SECTION 5. Voting List. The officer who has charge of the stock ledger of the corporation shall prepare and make, at least ten days before every meeting of stockholders, a complete list of the stockholders, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least ten days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or if not so specified, at the place where the meeting is to be held. The list shall also 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. The stock ledger shall be the only evidence as to who are the stockholders entitled to examine the stock ledger, the list required by this section or the books of the corporation, or to vote at any meeting of stockholders.

SECTION 6. Quorum of Stockholders. At any meeting of the stockholders, the holders of a majority in interest of all stock issued and outstanding and entitled to vote upon a question to be considered at the meeting, present in person or represented by proxy, shall constitute a quorum for the consideration of such question, but a smaller group may adjourn any meeting from time to time. When a quorum is present at any meeting, a majority of the stock represented thereat and entitled to vote shall, except where a larger vote is required by law, by the certificate of incorporation, or by these bylaws, decide any question brought before such meeting. Any election by stockholders shall be determined by a plurality of the vote cast by the stockholders entitled to vote at the election.

SECTION 7. Proxies and Voting. Unless otherwise provided in the certificate of incorporation, each stockholder shall at every meeting of the stockholders be entitled to one vote in person or by proxy for each share of the capital stock held of record by such stockholder, but no proxy shall be voted or acted upon after three years from its date, unless said proxy provides for a longer period. Persons holding stock in a fiduciary capacity shall be entitled to vote the shares so held, and persons whose stock is pledged shall be entitled to vote, unless in the transfer by the pledgor on the books of the corporation the pledgee shall have been expressly empowered to vote thereon, in which case only the pledgee or the pledgee's proxy may represent said stock and vote thereon. Shares of the capital stock of the corporation belonging to the corporation or to another corporation, a majority of whose shares entitled to vote in the election of directors is owned by the corporation, shall neither be entitled to vote nor be counted for quorum purposes.

SECTION 8. Conduct of Meeting. Meetings of the stockholders shall be presided over by one of the following officers in the order of seniority and if present and acting: the Chairman of the Board, if any, the Vice-Chairman of the Board, if any, the President, a Vice-President, or, if none of the foregoing is in office and present and acting, a chairman to be chosen by the stockholders. The Secretary of the corporation, if present, or an Assistant Secretary, shall act as secretary of every meeting, but if neither the Secretary nor an Assistant Secretary is present the chairman of the meeting shall appoint a secretary of the meeting.

SECTION 9. Action Without Meeting. Any action required or permitted to be taken at any annual or special meeting of stockholders of the corporation may be taken without a meeting, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, is signed by the holders or by proxy for 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 on such action were present and voted. 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.

ARTICLE II DIRECTORS

SECTION 1. General Powers. The business and affairs of the corporation shall be managed by or under the direction of a Board of Directors, who may exercise all of the powers of the corporation which are not by law required to be exercised by the stockholders. In the event of a vacancy in the Board of Directors, the remaining directors, except as otherwise provided by law, may exercise the powers of the full Board until the vacancy is filled.

SECTION 2. Number; Election; Tenure and Qualification. The number of initial Directors shall be fixed by the incorporator, and the initial Board of Directors shall be elected by the incorporator. Thereafter, the number of directors which shall constitute the whole Board shall be fixed by resolution of the Board of Directors, but in no event shall be less than one. Each director shall be elected by the stockholders at the annual meeting and all directors shall hold office until the next annual meeting and until their successors are elected and qualified, or until their earlier death, resignation or removal. The number of directors may be increased or decreased by action of the Board of Directors. Directors need not be stockholders of the corporation.

SECTION 3. Enlargement of the Board. The number of the Board of Directors may be increased at any time, such increase to be effective immediately, by vote of a majority of the directors then in office.

SECTION 4. Vacancies. Unless and until filled by the stockholders, any vacancy in the Board of Directors, however occurring, including a vacancy resulting from an enlargement of the Board and an unfilled vacancy resulting from the removal of any director for cause or without cause, may be filled by vote of a majority of the directors then in office although less than a quorum, or by the sole remaining director. A director elected to fill a vacancy shall hold office until the next annual meeting of stockholders and until his or her successor is elected and qualified or until his or her earlier death, resignation, or removal. When one or more directors shall resign from the Board, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have the power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective. If at any time there are no directors in office, then an election of directors may be held in accordance with the General Corporation Law of the State of Delaware.

SECTION 5. Resignation. Any director may resign at any time upon written notice to the corporation. Such resignation shall take effect at the time specified therein, or if no time is specified, at the time of its receipt by the President or Secretary.

SECTION 6. Removal. Except as may otherwise be provided by the General Corporation Law, any director or the entire Board of Directors may be removed, with or without cause, at an annual meeting or at a special meeting called for that purpose, by the holders of a majority of the shares then entitled to vote at an election of directors. The vacancy or vacancies thus created may be filled by the stockholders at the meeting held for the purpose of removal or, if not so filled, by the directors in the manner provided in Section 4 of this Article II.

SECTION 7. Committees. The Board of Directors may designate one or more committees, each committee to consist of one or more 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.

Any such committee may fix its rules of procedure and fix the time and place, whether within or without the State of Delaware, of its meetings and specify what notice thereof, if any, shall be given, unless the Board of Directors shall otherwise by resolution provide. The Board of Directors shall have the power to change the members of any such committee at any time, to fill vacancies therein and to discharge any such committee, either with or without cause, at any time.

Any such committee, unless otherwise provided in the resolution of the Board of Directors, or in these bylaws, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it; but no such committee shall have the power or authority denied it by Section 141 of the General Corporation Law of the State of Delaware.

Each committee shall keep regular minutes of its meetings and make such reports as the Board of Directors may from time to time request.

SECTION 8. Meetings of the Board of Directors. Regular meetings of the Board of Directors may be held without call or formal notice at such places either within or without the State of Delaware and at such times as the Board may from time to time determine. A regular meeting of the Board of Directors may be held without call or formal notice immediately after and at the same place as the annual meeting of the stockholders, or any special meeting of the stockholders at which a Board of Directors is elected.

Special meetings of the Board of Directors may be held at any place either within or without the State of Delaware at any time when called by the Chairman of the Board of Directors, the President, Treasurer, Secretary, or two or more directors. Forty-eight hours' notice by mail, facsimile, telephone or word of mouth shall be given for a special meeting unless shorter notice or a different method of notice is adequate under the circumstances. A notice or waiver of notice need not specify the purpose of any special meeting. Notice of a meeting need not be given to any director, if a written waiver of notice, executed by him before or after the meeting, is filed with the records of the meeting, or to any director who attends the meeting without protesting prior thereto or at its commencement the lack of notice to him. No notice of any adjourned meeting of the Board of Directors shall be required.

Directors or members of any committee designated by the directors may participate in a meeting of the Board of Directors or such committee by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

SECTION 9. Quorum and Voting. A majority of the total number of directors shall constitute a quorum, except that when a vacancy or vacancies exist in the Board, a majority of the directors then in office (but not less than one-third of the total number of the directors) shall constitute a quorum. A majority of the directors present, whether or not a quorum is present, may adjourn any meeting from time to time. The vote of a majority of the directors present at any meeting at which a quorum is present shall be the act of the Board of Directors, except where a different vote is required or permitted by law, by the certificate of incorporation, or by these bylaws.

SECTION 10. Compensation. The Board of Directors may fix fees for their services and for their membership on committees, and expenses of attendance may be allowed for attendance at each meeting. Nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity as an officer, agent or otherwise, and receiving compensation therefor.

SECTION 11. Action Without Meeting. 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, and without notice, if a written consent thereto is signed by all members of the Board of Directors, or of such committee, as the case may be, and such written consent is filed with the minutes of proceedings of the Board of Directors or such committee.

ARTICLE III OFFICERS

SECTION 1. Titles. The officers of the corporation shall consist of a President, a Secretary, a Treasurer, and such other officers with such other titles as the Board of Directors shall determine, including without limitation a Chairman of the Board, a Vice-Chairman of the Board, and one or more Vice-Presidents, Assistant Treasurers, or Assistant Secretaries.

SECTION 2. Election and Term of Office. The officers of the corporation shall be elected annually by the Board of Directors at its first meeting following the annual meeting of the stockholders. Each officer shall hold office until his or her successor is elected and qualified, unless a different term is specified in the vote electing such officer, or until his or her earlier death, resignation or removal.

SECTION 3. Qualification. Unless otherwise provided by resolution of the Board of Directors, no officer, other than the Chairman or Vice-Chairman of the Board, need be a director. No officer need be a stockholder. Any number of offices may be held by the same person, as the directors shall determine.

SECTION 4. Removal. Any officer may be removed, with or without cause, at any time, by resolution adopted by the Board of Directors.

SECTION 5. Resignation. Any officer may resign by delivering a written resignation to the corporation at its principal office or to the President or Secretary. Such resignation shall be effective upon receipt or at such later time as may be specified therein.

SECTION 6. Vacancies. The Board of Directors may at any time fill any vacancy occurring in any office for the unexpired portion of the term and may leave unfilled for such period as it may determine any office other than those of President, Treasurer and Secretary.

SECTION 7. Powers and Duties. The officers of the corporation shall have such powers and perform such duties as are specified herein and as may be conferred upon or assigned to them by the Board of Directors, and shall have such additional powers and duties as are incident to their office except to the extent that resolutions of the Board of Directors are inconsistent therewith.

SECTION 8. President and Vice-Presidents. The President shall be the chief executive officer of the corporation, shall preside at all meetings of the stockholders and the Board of Directors unless a Chairman or Vice-Chairman of the Board is elected by the Board, empowered to preside, and present at such meeting, shall have general and active management of the business of the corporation and general supervision of its officers, agents and employees, and shall see that all orders and resolutions of the Board of Directors are carried into effect.

In the absence of the President or in the event of his or her inability or refusal to act, the Vice-President if any (or in the event there be more than one Vice-President, the Vice-Presidents in the order designated by the directors, or in the absence of any designation, then in the order of their election) shall perform the duties of the President, and when so acting, shall have all the powers of and be subject to all the restrictions upon the President. The Board of Directors may assign to any Vice-President the title of Executive Vice-President, Senior Vice-President or any other title selected by the Board of Directors.

SECTION 9. Secretary and Assistant Secretaries. The Secretary shall attend all meetings of the Board of Directors and of the stockholders and record all the proceedings of such meetings in a book to be kept for that purpose, shall give, or cause to be given, notice of all meetings of the stockholders and special meetings of the Board of Directors, shall maintain a stock ledger and prepare lists of stockholders and their addresses as required and shall have custody of the corporate seal which the Secretary or any Assistant Secretary shall have authority to affix to any instrument requiring it and attest by any of their signatures. The Board of Directors may give general authority to any other officer to affix and attest the seal of the corporation.

The Assistant Secretary if any (or if there be more than one, the Assistant Secretaries in the order determined by the Board of Director of if there be no such determination, then in the order of their election) shall, in the absence of the Secretary or in the event of the Secretary's inability or refusal to act, perform the duties and exercise the powers of the Secretary.

SECTION 10. Treasurer and Assistant Treasurers. The Treasurer shall have the custody of the corporate funds and securities, shall keep full and accurate accounts of receipts and disbursements in books belonging to the corporation and shall deposit all moneys and other valuable effects in the name and to the credit of the corporation in such depositories as may be designated by the Board of Directors. The Treasurer shall disburse the funds of the corporation as may be ordered by the Board of Directors or the President, taking proper vouchers for such disbursements, and shall render to the President and the Board of Directors, at its regular meetings, or whenever they may require it, an account of all transactions and of the financial condition of the corporation.

The Assistant Treasurer if any (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 his or her inability or refusal to act, perform the duties and exercise the powers of the Treasurer.

SECTION 11. Bonded Officers. The Board of Directors may require any officer to give the corporation a bond in such sum and with such surety or sureties as shall be satisfactory to the Board of Directors upon such terms and conditions as the Board of Directors may specify, including without limitation a bond for the faithful performance of the duties of such officer and for the restoration to the corporation of all property in his or her possession or control belonging to the corporation.

SECTION 12. Salaries. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors.

ARTICLE IV STOCK

SECTION 1. Certificates of Stock. One or more certificates of stock, signed by the Chairman or Vice-Chairman of the Board of Directors or by the President or Vice-President and by the Treasurer or an Assistant Treasurer or the Secretary or an Assistant Secretary, shall be issued to each stockholder certifying, in the aggregate, the number of shares owned by the stockholder in the corporation. Any or all signatures on any such certificate may be facsimiles. In case any officer, transfer agent or registrar who shall have signed or whose facsimile signature shall have been placed upon a certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if he or she were such officer, transfer agent or registrar at the date of issue.

Each certificate for shares of stock which are subject to any restriction on transfer pursuant to the certificate of incorporation, the bylaws, applicable securities laws, or any agreement among any number of shareholders or among such holders and the corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

SECTION 2. Transfers of Shares of Stock. Subject to the restrictions, if any, stated or noted on the stock certificates, shares of stock may be transferred on the books of the corporation by the surrender to the corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. The corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to that stock, regardless of any transfer, pledge or other disposition of that stock, until the shares have been transferred on the books of the corporation in accordance with the requirements of these bylaws.

SECTION 3. Lost Certificates. A new certificate of stock may be issued in the place of any certificate theretofore issued by the corporation and alleged to have been lost, stolen, destroyed, or mutilated, upon such terms in conformity with law as the Board of Directors shall prescribe. The directors may, in their discretion, require the owner of the lost, stolen, destroyed or mutilated certificate, or the owner's legal representatives, to give the corporation a bond, in such sum as they may direct, to indemnify the corporation against any claim that may be made against it on account of the alleged loss, theft, destruction or mutilation of any such certificate, or the issuance of any such new certificate.

SECTION 4. Record Date. The Board of Directors may fix in advance a record date for the determination of the stockholders entitled to notice of or to vote at any meeting of stockholders or to express consent to corporate action in writing without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action. Such record date shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 60 days prior to any other action to which such record date relates.

If no record date is fixed, 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. Unless otherwise fixed by the Board of Directors, 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 of Directors is necessary, shall be the day on which the first written consent is expressed. The record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating to such purpose.

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.

SECTION 5. Fractional Share Interests. The corporation may, but shall not be required to, issue fractions of a share. If the corporation does not issue fractions of a share, it shall (1) arrange for the disposition of fractional interests by those entitled thereto, (2) pay in cash the fair value of fractions of a share as of the time when those entitled to receive such fractions are determined, or (3) issue scrip or warrants in registered or bearer form which shall entitle the holder to receive a certificate for a full share upon the surrender of such scrip or warrants aggregating a full share. A certificate for a fractional share shall, but scrip or warrants shall not

unless otherwise provided therein, entitle the holder to exercise voting rights, to receive dividends thereon, and to participate in any of the assets of the corporation in the event of liquidation. The Board of Directors may cause scrip or warrants to be issued subject to the conditions that they shall become void if not exchanged for certificates representing full shares before a specified date, or subject to the conditions that the shares for which scrip or warrants are exchangeable may be sold by the corporation and the proceeds thereof distributed to the holders of scrip or warrants, or subject to any other conditions which the Board of Directors may impose.

SECTION 6. Dividends. Subject to the provisions of the certificate of incorporation, the Board of Directors may, out of funds legally available therefor, at any regular or special meeting, declare dividends upon the common stock of the corporation as and when they deem expedient.

ARTICLE V
INDEMNIFICATION AND INSURANCE

SECTION 1. Indemnification. The corporation shall, to the extent permitted by the certificate of incorporation, as amended from time to time, indemnify each person whom it may indemnify pursuant thereto.

SECTION 2. Insurance. The corporation shall have power to 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 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 the provisions of the General Corporation Law of the State of Delaware.

ARTICLE VI
GENERAL PROVISIONS

SECTION 1. Fiscal Year. The fiscal year of the corporation shall be determined from time to time by the Board of Directors.

SECTION 2. Corporate Seal. The corporate seal shall be in such form as shall be approved by the Board of Directors. The Secretary shall be the custodian of the seal. The Board of Directors may authorize a duplicate seal to be kept and used by any other officer.

SECTION 3. Certificate of Incorporation. All references in these bylaws to the certificate of incorporation shall be deemed to refer to the certificate of incorporation of the corporation, as in effect from time to time.

SECTION 4. Execution of Instruments. The Chairman and Vice-Chairman of the Board of Directors, if any, the President, any Vice-President, and the Treasurer shall have power to execute and deliver on behalf and in the name of the corporation any instrument requiring the signature of an officer of the corporation, including deeds, contracts, mortgages, bonds, notes, debentures, checks, drafts, and other orders for the payment of money. In addition, the Board of Directors may expressly delegate such powers to any other officer or agent of the corporation.

SECTION 5. Voting of Securities. Except as the directors may otherwise designate, the President or Treasurer may waive notice of, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for this corporation (with or without power of substitution) at any meeting of stockholders or shareholders of any other corporation or organization the securities of which may be held by this corporation.

SECTION 6. Evidence of Authority. A certificate by the Secretary, or an Assistant Secretary, or a temporary secretary, as to any action taken by the stockholders, directors, a committee or any officer or representative of the corporation shall, as to all persons who rely on the certificate in good faith, be conclusive evidence of that action.

SECTION 7. Transactions with Interested Parties. No contract or transaction between the corporation and one or more of the directors or officers, or between the corporation and any other corporation, partnership, association, or other organization in which one or more of the directors or officers are directors or officers, or have a financial interest, shall be void or voidable solely for that reason, or solely because the director or officer is present at or participates in the meeting of the Board of Directors or a committee of the Board of Directors which authorizes the contract or transaction or solely because the vote of any such director is counted for such purpose, if:

(1) The material facts as to the relationship or interest and as to the contract or transaction are disclosed or are known to the Board of Directors or the committee, and the Board or committee in good faith authorizes the contract or transaction by the affirmative votes of a majority of the disinterested directors, even though the disinterested directors be less than a quorum; or

(2) The material facts as to the relationship or interest and as to the contract or transaction are disclosed or are known to the stockholders entitled to vote thereon, and the contract or transaction is specifically approved in good faith by vote of the stockholders; or

(3) The contract or transaction is fair as to the corporation as of the time it is authorized, approved or ratified by the Board of Directors, a committee of the Board of Directors, or the stockholders.

Common or interested directors may be counted in determining the presence of a quorum at a meeting of the Board of Directors or of a committee which authorizes the contract or transaction.

SECTION 8. Books and Records. The books and records of the corporation shall be kept at such places within or without the State of Delaware as the Board of Directors may from time to time determine.

ARTICLE VII
AMENDMENTS

SECTION 1. By the Board of Directors. These bylaws may be altered, amended or repealed or new bylaws may be adopted by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board of Directors at which a quorum is present.

SECTION 2. By the Stockholders. These bylaws may be altered, amended or repealed or new bylaws may be adopted by the affirmative vote of the holders of a majority of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at any regular meeting of stockholders, or at any special meeting of stockholders provided notice of such alteration, amendment, repeal or adoption of new bylaws shall have been stated in the notice of such special meeting.