

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

FORM 10-Q

(Mark One)

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 31, 2024

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number: 001-40192

Longboard Pharmaceuticals, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

4275 Executive Square, Suite 950

La Jolla, CA

(Address of principal executive offices)

84-5009619

(I.R.S. Employer
Identification No.)

92037

(Zip Code)

Registrant's telephone number, including area code: (858) 789-9283

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, par value \$0.0001 per share	LBPH	The Nasdaq Global Market

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of April 30, 2024, the registrant had 38,880,054 shares of common stock, \$0.0001 par value per share, outstanding, comprised of 33,609,299 shares of voting common stock, \$0.0001 par value per share, and 5,270,755 shares of non-voting common stock, \$0.0001 par value per share.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q (this Quarterly Report) contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the Securities Act), and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act), that involve substantial risks and uncertainties. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. All statements other than statements of historical facts contained in this Quarterly Report are forward-looking statements, which speak only as of the date they are made and are not guarantees of future performance. In some cases, you can identify forward-looking statements by words such as “anticipate,” “believe,” “contemplate,” “continue,” “consider,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “will,” “would” or the negative or plural of these words or other comparable terminology. These forward-looking statements generally relate to future events or our future financial or operating results and may include, but are not limited to, statements about:

- our plans to research, develop and commercialize our product candidates;
- the initiation, progress, success, cost and timing of our clinical trials and product development activities;
- the therapeutic potential of our product candidates, and the disease indications for which we intend to develop our product candidates;
- our ability and timing to advance our product candidates into, and to successfully initiate, conduct, enroll and complete, clinical trials;
- our ability to manufacture our product candidates for clinical development and, if approved, for commercialization, and the timing and costs of such manufacture;
- the performance of third parties in connection with the development and manufacture of our product candidates, including third parties conducting our clinical trials as well as third-party suppliers and manufacturers;
- our ability to obtain funding for our operations, including funding necessary to initiate and complete clinical trials of our product candidates;
- the size and growth of the potential markets for our product candidates and our ability to serve those markets;
- the potential scope, duration and value of our intellectual property rights;
- our ability, and the ability of our licensors, to obtain, maintain, defend and enforce intellectual property rights protecting our product candidates, and our ability to develop and commercialize our product candidates without infringing the proprietary rights of third parties;
- our ability to recruit and retain key personnel; and
- other risks and uncertainties, including those described under Part II, Item 1A, “Risk Factors” of this Quarterly Report.

Any forward-looking statements in this Quarterly Report reflect our current views with respect to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under Part II, Item 1A, “Risk Factors” of this Quarterly Report. Given these uncertainties, you should not place undue reliance on these forward-looking statements or rely on forward-looking statements as predictions of future events. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

Unless the context otherwise indicates, references in this Quarterly Report to the terms, “Longboard,” “the Company,” “we,” “our” and “us” refer to Longboard Pharmaceuticals, Inc. and references to our “common stock” refer to our voting common stock.

SUMMARY OF RISKS ASSOCIATED WITH OUR BUSINESS

An investment in shares of our common stock involves a high degree of risk. Below is a list of the more significant risks associated with our business. This summary does not address all of the risks that we face. Additional discussion of the risks listed in this summary, as well as other risks that we face, are set forth under Part II, Item 1A, "Risk Factors" in this Quarterly Report. Some of the material risks associated with our business include the following:

- We have a limited operating history, and we have incurred losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future. We may never generate any revenue or become profitable or, if we achieve profitability, we may not be able to sustain it.
- We will need substantial additional capital to finance our operations, which may not be available on acceptable terms, or at all. The effects of macroeconomic conditions and geopolitical events, including economic slowdowns, recessions, inflation, high interest rates, bank failures and tightening of credit markets, the conflicts in Ukraine, the Middle East or elsewhere, or otherwise, may limit our access to capital. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate certain of our product development efforts or other operations.
- We are early in our development efforts. In the first quarter of 2024, we announced topline results from a Phase 1b/2a clinical trial for our most advanced product candidate, bexicaserin (LP352), and Phase 3 planning is ongoing. We are also conducting a Phase 1 clinical trial for LP659, with topline data expected in the second quarter of 2024. Our other development efforts are in the research stage. If we are unable to advance our product candidates in clinical development, obtain regulatory approval and ultimately commercialize our product candidates, or experience significant delays in doing so, our business will be materially harmed.
- Clinical and preclinical drug development involves a lengthy and expensive process with an uncertain outcome. Topline data from a clinical trial may not accurately reflect the complete study results and remain subject to audit, and final data may differ materially from topline data. In addition, the results of prior clinical trials and early preclinical studies and clinical trials of our product candidates are not necessarily predictive of future results.
- Because we have multiple product candidates in our pipeline and are considering a variety of target indications, 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.
- The regulatory approval processes of the U.S. Food and Drug Administration (FDA) and comparable foreign authorities are lengthy, 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.
- If the market opportunities for our product candidates are smaller than we estimate, even assuming approval of a product candidate, our business may suffer. Because the patient populations in the market for our product candidates may be small, we must be able to successfully identify patients and acquire a significant market share to achieve profitability and growth.
- We currently have no marketing and sales organization and have no experience as a company in commercializing products, and we may have to invest significant resources to develop these capabilities. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our products, we may not be able to generate product revenue.
- We intend to rely on third parties to conduct, supervise and monitor our preclinical studies and clinical trials, and if those third parties perform in an unsatisfactory manner, it may harm our business.
- Our principal stockholders and management own a significant percentage of our stock and are able to exert significant control over matters subject to stockholder approval. Our stock market price may be negatively affected if our principal stockholders and management sell some or all of their stock.
- We depend on intellectual property licensed from third parties, including Arena Pharmaceuticals, Inc. (Arena), which is now a subsidiary of Pfizer, Inc. (Pfizer), and the failure by us or our licensors to protect the licensed intellectual property or the termination of our license could result in the loss of significant rights, which would harm our business.
- If we are unable to obtain and maintain patent protection for our current or any future product candidates, or if the scope of the patent protection obtained is not sufficiently broad, we may not be able to compete effectively in our markets.

PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

Longboard Pharmaceuticals, Inc.
Condensed Balance Sheets
(unaudited)

(in thousands, except share and per share data)	March 31, 2024	December 31, 2023
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 54,395	\$ 14,331
Short-term investments	266,648	34,167
Prepaid expenses and other current assets	2,398	1,723
Total current assets	323,441	50,221
Right-of-use assets	3,977	472
Property and equipment	3	4
Other long-term assets	244	—
Total assets	\$ 327,665	\$ 50,697
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	\$ 1,045	\$ 1,001
Accrued research and development expenses	7,304	4,556
Accrued compensation and related expenses	1,054	3,374
Accrued other expenses	572	368
Right-of-use liabilities, current portion	315	475
Total current liabilities	10,290	9,774
Right-of-use liabilities, net of current portion	3,667	—
Commitments and contingencies (see Note 9)		
Stockholders' equity:		
Preferred stock, \$0.0001 par value; authorized shares - 10,000,000 at March 31, 2024 and December 31, 2023; issued and outstanding shares - none at March 31, 2024 and December 31, 2023	—	—
Voting common stock, \$0.0001 par value; authorized shares - 300,000,000 at March 31, 2024 and December 31, 2023; issued and outstanding shares - 33,607,490 and 22,096,494 at March 31, 2024 and December 31, 2023, respectively	3	2
Non-voting common stock, \$0.0001 par value; authorized shares - 10,000,000 at March 31, 2024 and December 31, 2023; issued and outstanding shares - 5,270,755 and 2,420,755 at March 31, 2024 and December 31, 2023, respectively	—	—
Additional paid-in capital	469,621	181,563
Accumulated other comprehensive loss	(366)	(78)
Accumulated deficit	(155,550)	(140,564)
Total stockholders' equity	313,708	40,923
Total liabilities and stockholders' equity	\$ 327,665	\$ 50,697

The accompanying notes are an integral part of these financial statements.

Longboard Pharmaceuticals, Inc.
Condensed Statements of Operations and Comprehensive Loss
(unaudited)

(in thousands, except share and per share data)	2024	Three Months Ended March 31,	
		2024	2023
Operating expenses:			
Research and development	\$	13,170	\$ 8,530
General and administrative		4,940	3,432
Total operating expenses		18,110	11,962
Loss from operations		(18,110)	(11,962)
Interest income, net		3,133	516
Other expense		(9)	(10)
Net loss	\$	(14,986)	\$ (11,456)
Net loss per share, basic and diluted	\$	(0.42)	\$ (0.56)
Weighted-average shares outstanding, basic and diluted		35,321,794	20,409,794
Comprehensive loss:			
Net loss	\$	(14,986)	\$ (11,456)
Unrealized gain (loss) on short-term investments		(288)	271
Comprehensive loss	\$	(15,274)	\$ (11,185)

The accompanying notes are an integral part of these financial statements.

Longboard Pharmaceuticals, Inc.
Condensed Statements of Cash Flows
(unaudited)

(in thousands)	Three Months Ended March 31,	
	2024	2023
Cash flows from operating activities:		
Net loss	\$ (14,986)	\$ (11,456)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	1,749	697
Depreciation	1	1
Accretion of premiums on investments, net	(1,849)	(1)
Changes in operating assets and liabilities:		
Prepaid expenses and other assets	(770)	(798)
Accounts payable	43	(1,027)
Accrued research and development expenses	2,748	645
Accrued compensation and related expenses	(2,320)	(1,734)
Accrued other expenses	205	578
Operating right-of-use assets and lease liabilities, net	2	(2)
Net cash used in operating activities	<u>(15,177)</u>	<u>(13,097)</u>
Cash flows from investing activities:		
Purchases of short-term investments	(255,119)	(20,567)
Maturities of short-term investments	24,200	26,650
Net cash provided by (used in) investing activities	<u>(230,919)</u>	<u>6,083</u>
Cash flows from financing activities:		
Proceeds from issuance of common stock	301,350	23,000
Payments for offering costs	(14,994)	(1,640)
Proceeds from exercise of stock options	48	—
Net cash provided by financing activities	<u>286,404</u>	<u>21,360</u>
Net increase in cash, cash equivalents and restricted cash	40,308	14,346
Cash, cash equivalents and restricted cash at the beginning of the period	14,331	10,775
Cash, cash equivalents and restricted cash at the end of the period	<u>\$ 54,639</u>	<u>\$ 25,121</u>
Supplemental disclosure of cash flow information:		
Offering costs in accounts payable and accrued other expenses	\$ 3	\$ 172

The accompanying notes are an integral part of these financial statements.

Longboard Pharmaceuticals, Inc.
Notes to Unaudited Financial Statements

Note 1. Organization and Basis of Presentation

Description of Business

Longboard Pharmaceuticals, Inc. (the Company), formerly Arena Neuroscience, Inc., was incorporated in the state of Delaware on January 3, 2020, and is based in La Jolla, California. The Company was organized and initially wholly owned by Arena Pharmaceuticals, Inc. (Arena), until the closing of its Series A convertible preferred stock (Series A Preferred Stock) financing in October 2020. The Company is a clinical-stage biopharmaceutical company focused on developing novel, transformative medicines for neurological diseases. The Company's most advanced product candidate, bexicaserin (LP352), is a serotonin receptor that is being developed for the treatment of seizures associated with developmental and epileptic encephalopathies and is currently in the planning stages of a global Phase 3 program. The Company is also developing LP659, an 5-HT_{1D} receptor modulator, which could have applicability in multiple rare neuroinflammatory conditions.

Basis of Presentation

The Company's unaudited condensed financial statements have been prepared in accordance with U.S. generally accepted accounting principles (GAAP) and applicable regulations of the U.S. Securities and Exchange Commission (SEC). Accordingly, the accompanying unaudited condensed financial statements do not include all of the information and notes required by GAAP for complete financial statements. The unaudited condensed financial statements reflect all adjustments which, in the opinion of management, are necessary for a fair statement of the results for the periods presented. All such adjustments are of a normal and recurring nature. The balance sheet as of December 31, 2023 has been derived from the audited financial statements at that date but does not include all information and notes required by GAAP for complete financial statements. The operating results presented in these unaudited condensed financial statements are not necessarily indicative of the results that may be expected for any future periods. The Company's unaudited condensed financial statements should be read in conjunction with the audited financial statements included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2023, filed on March 12, 2024.

Liquidity and Capital Resources

Since its inception, the Company has devoted substantially all of its resources to research and development (R&D) activities, organizing and staffing, business planning, raising capital, licensing intellectual property rights and establishing its intellectual property portfolio, and providing general and administrative (G&A) support for these operations, and has funded its operations primarily with the net proceeds from the issuance of Series A Preferred Stock and common stock. The Company has incurred losses and negative cash flows from operations since commencement of its operations. The Company had an accumulated deficit of \$155.6 million and \$140.6 million as of March 31, 2024 and December 31, 2023, respectively.

Management expects the Company will incur substantial operating losses for the foreseeable future in order to complete preclinical studies and clinical trials, seek regulatory approval, and launch and commercialize any product candidates for which it receives regulatory approval. The Company will need to raise additional capital through public or private equity or debt financings or other capital sources, including potential collaborations, licenses and other similar arrangements.

As of March 31, 2024, the Company had available cash, cash equivalents and short-term investments of \$321.0 million and working capital of \$313.2 million to fund future operations. Management believes that its capital resources as of March 31, 2024 will be sufficient to fund the Company's operations for at least 12 months after the date these unaudited condensed financial statements are issued.

Note 2. Summary of Significant Accounting Policies

Use of Estimates

The Company's financial statements are prepared in accordance with GAAP. The preparation of the Company's financial statements requires the Company to make estimates and assumptions that impact the reported amounts of assets, liabilities and expenses and the disclosure of contingent assets and liabilities in the financial statements and accompanying notes. Such estimates include the accrual of R&D expenses and stock-based compensation. Management evaluates its estimates on an ongoing basis. Estimates are based on the Company's historical experience, knowledge of current events and actions it may undertake in the future, and actual results may materially differ from these estimates and assumptions.

Concentration of Credit Risk

Financial instruments which potentially subject the Company to significant concentration of credit risk consist of cash, cash equivalents and short-term investments. The Company maintains deposits in federally insured financial institutions in excess of federally insured limits and invests in short-term investments with the primary objectives of seeking to preserve principal, achieve liquidity requirements and safeguard funds. Management believes that the Company is not exposed to significant credit risk due to the financial position of the depository institutions in which those deposits are held and the nature, including the credit-ratings, of its short-term investments, but we have not eliminated all credit risk.

Comprehensive Loss

Comprehensive loss is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources, including unrealized gains and losses on short-term investments.

Cash and Cash Equivalents

The Company considers all highly liquid investments with original maturities of three months or less when purchased to be cash equivalents. Cash and cash equivalents include cash in readily available checking accounts, money market funds, corporate debt securities, and obligations of U.S. government-sponsored enterprises. The carrying amounts reported in the unaudited condensed balance sheets for cash and cash equivalents are valued at cost, which approximates fair value. The following table provides a reconciliation of the components of cash, cash equivalents and restricted cash reported in the condensed balance sheets to the total of the amount presented in the condensed statements of cash flows:

(in thousands)	March 31, 2024	December 31, 2023
Cash and cash equivalents	\$ 54,395	\$ 14,331
Restricted cash included in other long-term assets	244	—
Total cash, cash equivalents and restricted cash presented in the condensed statements of cash flows	\$ 54,639	\$ 14,331

The restricted cash relates to deposits for the Company's office lease. The deposit will be reduced to \$90,000 on January 1, 2027 as long as there are no defaults under the lease, and the remaining restriction will lapse when the lease expires on December 31, 2030.

Short-Term Investments

Short-term investments primarily consist of commercial paper, corporate debt securities, and government and agency bonds. The Company has classified these investments as available-for-sale securities, as the sale of such investments may be required prior to maturity to implement management strategies, and therefore has classified all investments with maturity dates beyond three months at the date of purchase as current assets in the accompanying unaudited balance sheets. Any premium or discount arising at purchase is amortized and/or accreted to interest income as an adjustment to yield using the straight-line method over the life of the instrument. Investments are reported at their estimated fair value. Unrealized gains and losses are included in accumulated other comprehensive loss as a component of stockholders' equity until realized.

R&D Expenses

R&D expenses are expensed in the periods in which they are incurred. External expenses consist primarily of payments to contract research organizations, outside consultants and other third parties in connection with the Company's research, preclinical and clinical activities, process development, manufacturing activities, regulatory and other services. Certain R&D external expenses are recognized based on an evaluation of the progress to completion of specific tasks using information provided to the Company by its service providers or the estimate of the level of service that has been performed at each reporting date. R&D expenses amounted to \$13.2 million and \$8.5 million for the three months ended March 31, 2024 and 2023, respectively.

Stock-Based Compensation

Stock-based awards are measured at fair value and compensation expense is recognized over the requisite service period. Forfeitures are accounted for in the period they occur. The Company determines the fair value of each stock-based award on the date of grant using the Black-Scholes option pricing model which requires the input of subjective assumptions, including price volatility of the underlying stock, risk-free interest rate, dividend yield, and expected term of the option.

Leases

The Company determines if an arrangement is a lease or contains lease components at inception. Lease terms are determined at the commencement date by considering whether renewal options and termination options, if any, are reasonably assured of exercise. For long-term operating leases, the Company recognizes a lease liability and a right-of-use (ROU) asset on its balance sheets and recognizes lease expense on a straight-line basis over the lease term. The lease liability is determined as the present value of future lease payments using the discount rate implicit in the lease or, if the implicit rate is not readily determinable, an estimate of the Company's incremental borrowing rate. The ROU asset is based on the lease liability, adjusted for any prepaid or deferred rent. The Company only has operating leases and does not have any financing leases.

Net Loss Per Share

Basic net loss per share is calculated by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share is computed by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock and potentially dilutive securities outstanding for the period. Since the Company had a net loss in each of the periods presented, basic and diluted net loss per share of common stock are the same.

The table below provides potentially dilutive securities not included in the calculation of the diluted net loss per share as it would be anti-dilutive:

	Three Months Ended March 31,	
	2024	2023
Options to purchase common stock	5,537,267	3,877,556
Restricted stock awards, issued but unvested	150,660	—
Total	5,687,927	3,877,556

Recent Accounting Pronouncements

The Company does not believe that any recently issued, but not effective, accounting standards, if currently adopted, would have a material effect on our condensed financial statements.

Note 3. Fair Value Measurements

The accounting guidance defines fair value, establishes a consistent framework for measuring fair value, and expands disclosure for each major asset and liability category measured at fair value on either a recurring or nonrecurring basis. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the accounting guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1 — Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.

Level 2 — Quoted prices for similar assets and liabilities in active markets, quoted prices in markets that are not active, or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liability.

Level 3 — Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (i.e., supported by little or no market activity).

The following table summarizes the Company's financial instruments measured at fair value on a recurring basis as of March 31, 2024 and December 31, 2023.

(in thousands)	Total	Fair Value Measurements at Reporting Date Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
As of March 31, 2024				
Assets:				
Money market funds	\$ 46,086	\$ 46,086	\$ —	\$ —
Commercial paper	\$ 53,749	\$ —	\$ 53,749	\$ —
Corporate debt securities	57,045	—	57,045	—
Government and agency securities	160,843	150,812	10,031	—
Total assets measured at fair value	\$ 317,723	\$ 196,898	\$ 120,825	\$ —
As of December 31, 2023				
Assets:				
Money market funds	\$ 11,196	\$ 11,196	\$ —	\$ —
Commercial paper	\$ 16,806	\$ —	\$ 16,806	\$ —
Corporate debt securities	4,256	—	4,256	—
Government and agency securities	13,105	13,105	—	—
Total assets measured at fair value	\$ 45,363	\$ 24,301	\$ 21,062	\$ —

Note 4. Short-Term Investments

The following table summarizes short-term investments:

(in thousands)	As of March 31, 2024			
	Amortized Cost	Unrealized		Estimated Fair Value
		Gains	Losses	
Commercial paper	\$ 50,863	\$ —	\$ (104)	\$ 50,759
Corporate debt securities	57,260	—	(215)	57,045
Government and agency securities	158,889	1	(46)	158,844
Total short-term investments	\$ 267,012	\$ 1	\$ (365)	\$ 266,648
(in thousands)	As of December 31, 2023			
	Amortized Cost	Unrealized		Estimated Fair Value
		Gains	Losses	
Commercial paper	\$ 16,813	\$ —	\$ (7)	\$ 16,806
Corporate debt securities	4,277	—	(21)	4,256
Government and agency securities	13,155	2	(52)	13,105
Total short-term investments	\$ 34,245	\$ 2	\$ (80)	\$ 34,167

The following table summarizes the maturities of the Company's short-term investments at March 31, 2024:

(in thousands)	Amortized Cost	Estimated Fair Value
Due in one year or less	\$ 232,745	\$ 232,489
Due in one to two years	34,267	34,159
Total short-term investments	<u>\$ 267,012</u>	<u>\$ 266,648</u>

The following table shows the Company's available-for-sale investments' gross unrealized losses and fair value aggregated by investment category and length of time that individual securities have been in a continuous loss position, at March 31, 2024 and December 31, 2023:

(in thousands)	As of March 31, 2024								
	Less than 12 months			More than 12 months			Total		
	Count	Fair Value	Unrealized Losses	Count	Fair Value	Unrealized Losses	Count	Fair Value	Unrealized Losses
Commercial paper	15	\$ 50,759	\$ (104)	—	\$ —	\$ —	15	\$ 50,759	\$ (104)
Corporate debt securities	19	57,045	(215)	—	—	—	19	57,045	(215)
Government and agency securities	11	134,079	(32)	2	3,189	(14)	13	137,268	(46)
	<u>45</u>	<u>\$ 241,883</u>	<u>\$ (351)</u>	<u>2</u>	<u>\$ 3,189</u>	<u>\$ (14)</u>	<u>47</u>	<u>\$ 245,072</u>	<u>\$ (365)</u>

(in thousands)	As of December 31, 2023								
	Less than 12 months			More than 12 months			Total		
	Count	Fair Value	Unrealized Losses	Count	Fair Value	Unrealized Losses	Count	Fair Value	Unrealized Losses
Commercial paper	8	\$ 16,806	\$ (7)	—	\$ —	\$ —	8	\$ 16,806	\$ (7)
Corporate debt securities	—	—	—	3	4,256	(21)	3	4,256	(21)
Government and agency securities	—	—	—	2	3,149	(52)	2	3,149	(52)
	<u>8</u>	<u>\$ 16,806</u>	<u>\$ (7)</u>	<u>5</u>	<u>\$ 7,405</u>	<u>\$ (73)</u>	<u>13</u>	<u>\$ 24,211</u>	<u>\$ (80)</u>

The Company reviews its investments to identify and evaluate investments that have an indication of possible other-than-temporary impairment. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, any changes to the underlying credit risk of the investment, and the Company's intent and ability to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value. The unrealized losses in the Company's investments were caused by changes in interest rates caused by changing economic conditions, and not from a decline in credit of their underlying issuers. The Company does not generally intend to sell these investments and it is not more likely than not that the Company will be required to sell these investments before recovery of their amortized cost basis which may be at maturity. As such, the Company has classified these losses as temporary in nature.

Note 5. Accrued Other Expenses

Accrued other expenses consisted of the following:

(in thousands)	March 31, 2024	As of	December 31, 2023
Accrued legal and accounting fees	\$ 257	\$	40
Accrued consulting fees	177		218
Accrued taxes	50		40
Accrued travel expenses	27		43
Accrued computer related expenses	11		15
Accrued other	50		12
Total	\$ 572	\$	368

Note 6. Stockholders' Equity

Private Placement

In March 2024, the Company entered into a Non-Voting Common Stock Purchase Agreement (the "Agreement") with an investment fund (the "Investor") affiliated with Farallon Capital Management, L.L.C. ("Farallon"), pursuant to which the Company sold and issued 2,850,000 shares of its non-voting common stock to the Investor at a purchase price of \$21.00 per share, for aggregate gross proceeds of \$59.9 million, in a private placement transaction. Funds affiliated with Farallon have been and continue to be a greater than 5% stockholder in the Company. No discounts, commissions or placement agent fees were payable in connection with the foregoing private placement.

Follow-On Public Offerings

In January 2024, the Company raised \$241.5 million in a follow-on public offering. The Company issued and sold 11,500,000 shares of common stock which included 1,500,000 shares of common stock sold pursuant to the full exercise by the underwriters of their option to purchase additional shares, at a public offering price of \$21.00 per share. The Company raised \$226.5 million in net proceeds from the follow-on public offering after deducting underwriters' commissions of \$14.5 million and other expenses of \$0.5 million.

In February 2023, the Company raised \$23.0 million in a follow-on public offering. The Company issued and sold 5,750,000 shares of common stock which included 750,000 shares of common stock issued pursuant to the over-allotment option granted to the underwriters to purchase additional shares of common stock, at a public offering price of \$4.00 per share. The Company raised \$21.2 million in net proceeds from the follow-on public offering after deducting underwriters' commissions of \$1.4 million and issuance costs of \$0.4 million.

Sales Agreement

In September 2022, the Company entered into a Controlled Equity OfferingSM Sales Agreement (the Sales Agreement) with Cantor Fitzgerald & Co., as sales agent (Cantor Fitzgerald), pursuant to which it may issue and sell its common stock from time to time through an "at the market offering" (ATM) program under the Sales Agreement. The Company has no obligation to sell any shares of common stock under the Sales Agreement and may at any time suspend sales under the Sales Agreement. Cantor Fitzgerald will be entitled to compensation in an amount of 3% of the gross proceeds of any shares of common stock sold under the Sales Agreement. In August 2023, the Company filed a prospectus supplement providing for the sale of up to \$75.0 million of shares of common stock under the Sales Agreement. The Company sold 1,422,250 shares of its common stock for gross proceeds of \$8.8 million during 2023. In March 2024, the Company filed a sales agreement prospectus providing for the sale of up to \$150.0 million of

shares of common stock under the Sales Agreement (exclusive of shares sold previously). As of March 31, 2024, no shares of common stock had been sold pursuant to the most recent sales agreement prospectus.

Amended and Restated Certificate of Incorporation

In March 2021, the Company amended and restated the Company's certificate of incorporation to, among other things, increase the authorized shares of voting common stock, non-voting common stock and preferred stock to 300,000,000 shares, 10,000,000 shares and 10,000,000 shares, respectively.

Voting Common Stock and Non-Voting Common Stock

As of March 31, 2024, the Company had 33,607,490 shares of voting common stock outstanding and 5,270,755 shares of non-voting common stock outstanding. As of December 31, 2023, the Company had 22,096,494 shares of voting common stock outstanding and 2,420,755 shares of non-voting common stock outstanding.

Reconciliation of Changes in Stockholders' Equity

The following tables document the changes in stockholders' equity for the three months ended March 31, 2024 and 2023 (unaudited):

(in thousands, except shares)	Voting Common Stock		Non-Voting Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
	Number of Shares	Amount	Number of Shares	Amount				
Balance at December 31, 2023	22,096,494	\$ 2	2,420,755	\$ —	\$ 181,563	\$ (78)	\$ (140,564)	\$ 40,923
Issuance of common stock in follow-on public offering	11,500,000	1	—	—	241,499	—	—	241,500
Issuance of non-voting common stock in PIPE financing	—	—	2,850,000	—	59,850	—	—	59,850
Financing related fees	—	—	—	—	(15,088)	—	—	(15,088)
Stock-based compensation	—	—	—	—	1,749	—	—	1,749
Stock option exercises	10,996	—	—	—	48	—	—	48
Unrealized loss on short-term investments, net	—	—	—	—	—	(288)	—	(288)
Net loss	—	—	—	—	—	—	(14,986)	(14,986)
Balance at March 31, 2024	33,607,490	\$ 3	5,270,755	\$ —	\$ 469,621	\$ (366)	\$ (155,550)	\$ 313,708

(in thousands, except shares)	Voting Common Stock		Non-Voting Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
	Number of Shares	Amount	Number of Shares	Amount				
Balance at December 31, 2022	13,585,950	\$ 1	3,629,400	\$ —	\$ 148,303	\$ (692)	\$ (86,142)	\$ 61,470
Issuance of common stock in follow-on public offering	5,750,000	1	—	—	21,187	—	—	21,188
Conversion of non-voting common stock to voting common stock	1,208,645	—	(1,208,645)	—	—	—	—	—
Financing related fees	—	—	—	—	(37)	—	—	(37)
Stock-based compensation	—	—	—	—	697	—	—	697
Unrealized gain on short-term investments, net	—	—	—	—	—	271	—	271
Net loss	—	—	—	—	—	—	(11,456)	(11,456)
Balance at March 31, 2023	20,544,595	\$ 2	2,420,755	\$ —	\$ 170,150	\$ (421)	\$ (97,598)	\$ 72,133

Note 7. License Agreement with Arena Pharmaceuticals, Inc.

The Company entered into a license agreement (Arena License Agreement), a services agreement, and a royalty purchase agreement in October 2020 with Arena. Arena was purchased by Pfizer in March 2022. The following section summarizes the Arena License Agreement.

Arena License Agreement

Pursuant to the Arena License Agreement, the Company has obtained an exclusive, royalty bearing, sublicensable, worldwide license under certain know-how and patents of Arena to develop and commercialize bexicaserin (LP352) for any use in humans, LP659 for the treatment of developmental, degenerative and autoimmune disease, disorders or conditions of the CNS or peripheral nervous system in humans, and certain other compounds for the treatment of CNS indication in humans (pharmaceutical products containing any such compounds, Licensed Products). Arena has a right of first negotiation to acquire certain development and commercial rights to LP659 products. As consideration for the rights granted to the Company under the Arena License Agreement, the Company will be required to pay to Arena a mid-single digit royalty on net sales of Licensed Products of LP352, and a low single digit royalty on net sales of all other Licensed Products, by the Company, its affiliates or its sublicensees, subject to standard reductions. The Company's royalty obligations continue on a Licensed Product-by-Licensed Product and country-by-country basis until the later of the (i) tenth anniversary of the first commercial sale of such product in such country or (ii) expiration of the last-to-expire valid claim of the patents licensed by the Company under the Arena License Agreement covering the manufacture, use or sale of such product in such country.

Note 8. Stock-Based Compensation

Equity Incentive Plan

In October 2020, the Company's board of directors and stockholders approved the 2020 Equity Incentive Plan (2020 Plan), which provided for the grant of incentive stock options, nonstatutory stock options, restricted stock awards, restricted stock unit awards, and stock appreciation rights to its employees, members of its board of directors, and consultants. The Company's board of directors determined the exercise price, vesting and expiration period of the grants under the 2020 Plan.

The Company's board of directors adopted the 2021 Equity Incentive Plan (2021 Plan) in February 2021 and the Company's stockholders approved the 2021 Plan in March 2021. The 2021 Plan became effective on March 11, 2021. The 2021 Plan is the successor and continuation of the 2020 Plan. No additional awards may be granted under the 2020 Plan and all outstanding awards under the 2020 Plan remain subject to the terms of the 2020 Plan.

In October 2023, the compensation committee of the Company's board of directors amended the 2021 Plan to incorporate an additional pool of 1,000,000 shares that the Company is authorized to issue to individuals who satisfy the standards for inducement grants under Nasdaq Marketplace Rule 5635(c)(4) and the related guidance under Nasdaq IM 5635-1, including individuals who were not previously an employee or director of the Company or are following a bona fide period of non-employment, in each case as an inducement material to such individual entering into employment with the Company.

As of March 31, 2024, the 2021 Plan authorizes and provides for the issuance of up to 6,640,983 shares of common stock, which consists of 5,537,267 shares of common stock subject to outstanding options, 150,660 shares of common stock subject to outstanding restricted stock units and 953,056 shares of common stock available for grant. The number of shares of common stock reserved for issuance under the 2021 Plan automatically increases on January 1 of each calendar year, through January 1, 2031, in an amount equal to (i) 5% of the total number of shares of common stock outstanding on December 31 of the fiscal year before the date of each automatic increase (determined on an as-converted to voting common stock basis, without regard to any limitations on the conversion of the non-voting common stock), or (ii) a lesser number of shares determined by the Company's board of directors prior to the applicable January 1. Recipients of stock options are eligible to purchase shares of the Company's common stock at an exercise price equal to no less than the estimated fair market value of such stock on the date of grant. The maximum term of options granted under the 2020 and 2021 Plans (or collectively, the Equity Plans) is ten years and, in general, the options issued under the Equity Plans vest over a one to four year period from the vesting commencement date.

Stock Award Grants under the Equity Plans

A summary of the Company's stock option activity is as follows:

	Number of Options Outstanding	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value (in thousands)
Balance at December 31, 2023	3,856,819	\$ 5.10	8.3	\$ 5,678
Options granted	1,708,014	19.92		
Options exercised	(10,996)	4.40		
Options forfeited/cancelled	(16,570)	8.95		
Balance at March 31, 2024	5,537,267	\$ 9.66	8.6	\$ 66,208
Vested and expected to vest at March 31, 2024	5,537,267	\$ 9.66	8.6	\$ 66,208
Options exercisable at March 31, 2024	2,018,876	\$ 5.47	7.6	\$ 32,573

Options exercisable at March 31, 2024 included 1,917,244 vested stock options and 101,632 stock options that are subject to an early exercise provision.

The following table presents the weighted-average assumptions used for the stock option grants for the three months ended March 31, 2024 and 2023, along with the related grant date fair value:

	Three Months Ended March 31,			
	2024		2023	
Stock price	\$	19.92	\$	4.37
Risk-free interest rate		4.14%		3.83%
Dividend yield		0.00%		0.00%
Expected volatility		83.36%		77.55%
Expected life (years)		6.0		6.0
Estimated grant date fair value per share of award granted	\$	14.55	\$	3.05

Determination of Fair Value of Common Stock. The Company utilizes the closing stock price of the common stock on the Nasdaq Global Market as both the exercise price and an input to the Black Scholes option pricing model to determine stock-based compensation expense.

Risk-free interest rate. The risk-free interest rate is based on the U.S. Treasury yield in effect at the time of grant for zero coupon U.S. Treasury notes with maturities similar to the expected term of the awards.

Expected dividend yield. The Company bases the expected dividend yield assumption on the fact that it has never paid cash dividends and has no present intention to pay cash dividends and, therefore, used an expected dividend yield of zero.

Expected volatility. Since the Company is a newly public company and does not have a trading history for its common stock, the expected volatility assumption is based on volatilities of a peer group of similar companies whose share prices are publicly available. The peer group was developed based on companies in the biotechnology industry. The Company will continue to apply this process until a sufficient amount of historical information regarding the volatility of its own stock price becomes available.

Expected life. The expected life represents the period of time that options are expected to be outstanding. Because the Company does not have historical exercise behavior, it determines the expected life assumption using the simplified method, for employees, which is an average of the contractual term of the option and its vesting period. The expected term for nonemployee options is equal to the contractual term.

A summary of the Company's restricted stock unit (RSU) activity is as follows:

	Number of RSUs Outstanding	Weighted-Average Grant Date Fair Value
Balance at December 31, 2023	—	\$ —
RSUs granted	151,500	19.32
RSUs vested	—	—
RSUs forfeited/cancelled	(840)	19.32
Balance at March 31, 2024	150,660	\$ 19.32

RSUs vest annually over four years from the grant date.

Stock-Based Compensation Expense

Stock-based compensation expense recognized for all equity awards has been reported in the statements of operations and comprehensive loss as follows:

(in thousands)	Three Months Ended March 31,			
	2024		2023	
Research and development	\$	820	\$	339
General and administrative		929		358
Total	\$	1,749	\$	697

Total stock-based compensation expense for the three months ended March 31, 2024 and 2023 included \$0.1 million and \$0 of expense, respectively, related to the vesting of RSUs. As of March 31, 2024, unrecognized stock-based compensation expense related to outstanding unvested stock option awards and outstanding unvested RSUs was \$30.0 million and \$2.8 million, respectively, which is expected to be recognized over a remaining weighted-average period of approximately 3.0 years and 3.9 years, respectively.

Employee Stock Purchase Plan

The Company's board of directors adopted the 2021 Employee Stock Purchase Plan (ESPP) in February 2021, the Company's stockholders approved the ESPP in March 2021 and it became effective on March 11, 2021. As of March 31, 2024, the ESPP authorizes the issuance of 942,817 shares of common stock under purchase rights granted to our employees. The number of shares of common stock reserved for issuance automatically increases on January 1 of each calendar year, through January 1, 2031, by the lesser of (i) 1% of the total number of shares of common stock outstanding on the last day of the fiscal year before the date of the automatic increase (determining on an as-converted to voting common stock basis, without regard to any limitations on the conversion of the non-voting common stock); and (ii) such number of shares of common stock that would cause the aggregate number of shares of common stock then reserved for issuance under the ESPP to equal 1,060,017 shares; provided that before the date of any such increase, the Company's board of directors may determine that such increase will be for a lesser amount of shares. The ESPP permits eligible employees, who elect to participate in an offering under the ESPP, to contribute up to 15% of their eligible earnings (as defined in the ESPP) towards the purchase of shares of common stock. Unless otherwise determined by the Company's board of directors, the price at which stock is purchased under the ESPP is equal to 85% of the fair market value of the Company's common stock on the commencement date of each offering period or the relevant purchase date, whichever is lower. There are certain service requirements for an employee to be eligible to participate in the ESPP, and no employee may purchase shares under the ESPP at a rate in excess of \$25,000 worth of common stock (as determined in accordance with the ESPP). Offering durations under the ESPP may not be longer than 27 months, and the Company may specify shorter purchase periods within each offering. The ESPP is considered a compensatory plan as defined by the authoritative guidance for stock-based compensation. As of March 31, 2024, the ESPP had not yet been implemented.

Note 9. Commitments and Contingencies

Leases

The Company has a lease agreement for office space located at 4275 Executive Square, Suite 950, La Jolla, California 92037 where it currently occupies 11,266 square feet. The lease had an expiration date of December 31, 2024. Monthly rent payments for this space under the lease agreement are approximately \$43,000 and will increase to approximately \$44,000 in July 2024.

In February 2024, we further amended our lease so that we will occupy all 15,960 square feet on the 9th floor of the building, estimated to be effective October 1, 2024. The lease expiration was extended from December 31, 2024 to December 31, 2030. Monthly rent payments will be approximately \$62,000 per month and will increase by approximately 4.5% each year, starting in 2026. We have rent abatement for months 2 and 3 of the new lease amendment. A security deposit of approximately \$244,000 is included in other long-term assets on the unaudited condensed balance sheet as of March 31, 2024.

For the three months ended March 31, 2024 and 2023, the Company recorded approximately \$109,000 and \$105,000, respectively, in rent expense.

The below table provides supplemental cash flow information related to leases as follows (in thousands):

	Three Months Ended	
	March 31, 2024	
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	\$	105
Right-of-use assets obtained in exchange for lease obligations:		
Operating leases	\$	3,603

Supplemental balance sheet information related to leases is as follows (in thousands, except lease term and discount rate):

	March 31, 2024
Operating leases	
Right-of-use assets	\$ 3,977
Right-of-use lease liabilities, current	315
Right-of-use lease liabilities, noncurrent	3,667
Total operating lease liabilities	\$ 3,982
Weighted-average remaining lease term	
Operating leases	6.2 years
Weighted-average discount rate	
Operating leases	10.0%

Future minimum lease commitments are as follows as of March 31, 2024 (in thousands):

Year Ending December 31,	Operating Leases
2024	\$ 409
2025	663
2026	785
2027	820
2028	856
Thereafter	1,829
Total lease payments	5,362
Less imputed interest	(1,380)
Total	\$ 3,982

Contingencies

From time to time, the Company may become subject to claims or suits arising in the ordinary course of business. The Company will accrue a liability for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated. As of March 31, 2024 and December 31, 2023, the Company is not a party to any litigation.

Note 10. Employment Benefits

Effective in June 2021, the Company established a 401(k) salary deferral plan for its employees. Employee contributions are voluntary and are determined on an individual basis, limited to the maximum amount allowable under federal tax regulations. The Company provides a safe harbor contribution of up to 4% of the employee's compensation, not to exceed eligible limits, and subject to employee participation. For the three months ended March 31, 2024 and 2023, the Company incurred approximately \$209,000 and \$107,000, respectively, in expenses related to the safe harbor contribution.

Item 2. 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 our unaudited condensed financial statements and related notes included elsewhere in this Quarterly Report and our audited consolidated financial statements and related notes included in our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the Securities and Exchange Commission (SEC) on March 12, 2024 (our 2023 Annual Report).

Forward-Looking Statements

Some of the information contained in this discussion and analysis or set forth elsewhere in this Quarterly Report, 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 Quarterly Report, 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. You should carefully read Part II, Item 1A, "Risk Factors" of this Quarterly Report to gain an understanding of the important factors that could cause actual results to differ materially from our forward-looking statements.

Overview and Recent Developments

We are a clinical-stage biopharmaceutical company focused on developing novel, transformative medicines for neurological diseases. We were formed in January 2020 by Arena Pharmaceuticals, Inc. (Arena) to advance a portfolio of centrally acting product candidates designed to be highly selective for specific G protein-coupled receptors (GPCRs). Our small molecule product candidates were discovered out of the same platform at Arena that represents a culmination of more than 20 years of world-class GPCR research. Arena was purchased by Pfizer, Inc. (Pfizer) on March 11, 2022, and is now a wholly owned subsidiary of Pfizer.

We are currently focused on developing the following product candidates in our pipeline, both of which are licensed from Arena:

- Bexicaserin (LP352) is an oral, centrally acting, 5-hydroxytryptamine 2C receptor subtype (5-HT_{2C}) superagonist. In the first quarter of 2024, we announced topline data from a Phase 1b/2a clinical trial, the PACIFIC Study, evaluating participants ages 12 to 65 years old with a broad range of developmental and epileptic encephalopathies (DEEs), including Dravet syndrome (DS), Lennox-Gastaut syndrome (LGS), and other DEEs. We are currently in the planning stages of our bexicaserin global Phase 3 program; and
- LP659, a centrally acting, sphingosine-1-phosphate, or S1P, receptor subtypes 1 and 5 modulator. In November 2023, we initiated a Phase 1 single-ascending dose (SAD) clinical trial for LP659 in healthy volunteers, with topline data expected in the second quarter of 2024.

Since our inception, we have devoted substantially all of our resources to research and development activities, organizing and staffing our company, business planning, raising capital, in-licensing intellectual property rights and establishing our intellectual property portfolio, and providing general and administrative support for these operations. We have principally financed our operations to date through the private placement of convertible preferred stock and the completion of our initial public offering (IPO) of our common stock in March 2021. To date, we have raised gross proceeds of approximately \$56.0 million from the issuance of our convertible preferred stock, \$84.8 million from our IPO, \$23.0 million and \$241.5 million from our February 2023 and January 2024 follow-on public offerings, respectively, \$59.9 million from our March 2024 private placement of non-voting common stock, and \$8.8 million from our at-the-market offering. As of March 31, 2024, we had cash, cash equivalents and short-term investments of \$321.0 million.

We have incurred net losses since our inception. Our net losses were \$15.0 million and \$11.5 million, respectively, for the three months ended March 31, 2024 and 2023. As of March 31, 2024, we had an accumulated deficit of \$155.6 million. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our clinical trials and preclinical studies and our expenditures on other research and development activities. We expect that our expenses and operating losses will increase substantially as product candidates advance through preclinical studies and clinical trials, and as we expand our clinical, regulatory, quality and manufacturing capabilities, incur more significant commercialization expenses for marketing, sales, manufacturing and distribution leading up to and, if ever, after we obtain marketing approval for any of our product candidates, and incur additional costs associated with operating as a public company. We expect that our existing cash, cash equivalents and short-term investments will be sufficient to fund our operations for at least the next 12 months. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially. We base our estimate on assumptions that may prove to be wrong, and we could deplete our capital resources sooner than we expect.

We do not expect to generate any revenues from product sales unless and until we successfully complete development and obtain regulatory approval for one or more product candidates, which will not be for many years, if ever. Accordingly, until such time as we can generate significant revenue from sales of our product candidates, if ever, we expect to finance our cash needs through a combination of public or private equity offerings, debt financings or other capital sources, including potential collaborations, licenses and other similar arrangements. However, we may 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 when needed would have a negative impact on our financial condition and could force us to delay, limit, reduce or terminate our research and development programs, future commercialization efforts or other operations, or grant rights to develop and market our product candidates that we would otherwise prefer to develop and market ourselves, which would have a negative impact on our financial condition.

Components of Our Results of Operations

Operating Expenses

Our operating expenses consist of (i) research and development expenses and (ii) general and administrative expenses.

Research and Development

Our research and development expenses consist primarily of direct and indirect costs incurred in connection with the preclinical and clinical development of our product candidates.

Direct costs include:

- external research and development expenses incurred under agreements with CROs, investigative sites, consultants and other third parties to conduct our preclinical studies and clinical trials; and
- costs related to manufacturing our product candidates for preclinical studies and clinical trials, including fees paid to third-party manufacturers.

Indirect costs include:

- personnel-related costs, which include salaries, payroll taxes, employee benefits and other employee-related costs, including stock-based compensation, for personnel engaged in research and development functions; and
- other various expenses.

Research and development expenses are recognized as incurred and payments made prior to the receipt of goods or services to be used in research and development are capitalized until the goods or services are received. We track direct costs by stage of program, clinical or preclinical and other early stage research. However, we do not track indirect costs on a program specific or stage of program basis because these costs are deployed across multiple programs and, as such, are not separately classified.

We expect that our research and development expenses will increase substantially for the foreseeable future as we continue the development of our product candidates, particularly as product candidates in later stages of development generally have higher development costs than those in earlier stages of development. We cannot determine with certainty the timing of the initiation, duration or completion costs of future clinical trials and preclinical studies of our product candidates due to the inherently unpredictable nature of clinical and preclinical development. Clinical and preclinical development timelines, the probability of success and development costs can differ materially from expectations.

We anticipate that we will make determinations as to which product candidates and development programs to pursue and how much funding to direct to each product candidate or program on an ongoing basis in response to the results of ongoing and future preclinical studies and clinical trials, regulatory developments and our ongoing assessments as to each product candidate's commercial potential. We will need to raise substantial additional capital in the future. In addition, we cannot forecast which product candidates may be subject to future collaborations, when such arrangements may occur, if at all, and to what degree such arrangements would affect our development plans and capital requirements.

Our research and development expenses may vary significantly based on a variety of factors, such as:

- the scope, rate of progress, expense and results of our preclinical development activities;
- the phase of development of our product candidates;

- per participant clinical trial costs;
- the number of clinical trials required for approval;
- the number of sites included in our ongoing and planned clinical trials;
- the number of patients that participate in our ongoing and planned clinical trials;
- the countries in which our clinical trials are conducted;
- uncertainties in clinical trial design and participant enrollment or drop out or discontinuation rates;
- potential additional safety monitoring requested by regulatory agencies;
- the duration of patient participation in our ongoing and planned clinical trials and follow-up;
- the efficacy and safety profile of our product candidates;
- the timing, receipt and terms of any approvals from applicable regulatory authorities, including the FDA and foreign regulatory authorities;
- significant and changing government regulation and regulatory guidance;
- potential additional trials requested by regulatory agencies;
- the cost and timing of manufacturing our product candidates;
- establishing clinical and commercial manufacturing capabilities or making arrangements with third-party manufacturers in order to ensure that we or our third-party manufacturers are able to make product successfully;
- the extent to which we establish additional strategic collaborations or other arrangements;
- the impact of any business interruptions to our operations or to those of the third parties with whom we work; and
- maintaining a continued acceptable safety profile of our product candidates following approval, if any, of our product candidates.

A change in the outcome of any of these or other variables with respect to the development of any of our product candidates could significantly change the costs and timing associated with the development of that product candidate.

General and Administrative

General and administrative expenses consist primarily of personnel-related costs, which include salaries, payroll taxes, employee benefits and other employee-related costs, including stock-based compensation, for personnel in executive, finance and other administrative functions. Other significant costs include legal fees relating to corporate matters, professional fees for accounting and consulting services and facility-related costs.

We expect that our ongoing general and administrative expenses will increase modestly for the foreseeable future to support our increased research and development activities and increased costs of operating as a public company and in building our internal resources. These increased costs will include increased expenses related to audit and legal services associated with maintaining compliance with exchange listing and SEC requirements, prosecuting and maintaining our patent portfolio, and investor and public relations activities associated with operating as a public company.

Financial Operations Overview

Results of Operations

The following table summarizes our results of operations for the three months ended March 31, 2024 and 2023:

(in thousands)	2024	Three Months Ended March 31,	
		2024	2023
Operating expenses:			
Research and development	\$	13,170	\$ 8,530
General and administrative		4,940	3,432
Total operating expenses		18,110	11,962
Loss from operations		(18,110)	(11,962)
Interest income, net		3,133	516
Other expense		(9)	(10)
Net loss	\$	(14,986)	\$ (11,456)

Research and Development Expenses

The following table summarizes our research and development expenses for the three months ended March 31, 2024 and 2023:

(in thousands)	2024	Three Months Ended March 31,	
		2024	2023
Direct costs:			
Bexicaserin (LP352)	\$	6,806	\$ 4,037
LP659		1,860	1,194
Preclinical programs and other early stage research		285	251
Indirect costs:			
Personnel-related		3,754	2,690
All other		465	358
Total research and development expenses	\$	13,170	\$ 8,530

Research and development expenses were \$13.2 million for the three months ended March 31, 2024, an increase of \$4.6 million, or 54%, compared to \$8.5 million for the three months ended March 31, 2023. The net increase of \$4.6 million is primarily related to increases of \$2.8 million in clinical trial and preclinical expenses related to bexicaserin, \$0.7 million in clinical trial and preclinical expenses related to LP659 and \$1.1 million in personnel-related expenses.

General and Administrative Expenses

General and administrative expenses were \$4.9 million for the three months ended March 31, 2024, an increase of \$1.5 million, or 44%, compared to \$3.4 million for the three months ended March 31, 2023. The net increase of \$1.5 million is primarily related to increases of \$1.1 million in personnel-related expenses and \$0.5 million in consulting and professional fees, offset by a decrease of \$0.1 million in insurance expenses.

Liquidity and Capital Resources

As of March 31, 2024, we had cash, cash equivalents and short-term investments of \$321.0 million and working capital of \$313.2 million to fund future operations. As of December 31, 2023, we had cash, cash equivalents and short-term investments of \$48.5 million and working capital of \$40.4 million to fund future operations.

Sources of Liquidity

We have funded our operations primarily through available cash, cash equivalents and short-term investments, and the sale and issuance of common stock and convertible preferred stock.

In October 2020, we completed a \$56.0 million private placement of our Series A convertible preferred stock.

In connection with our IPO in March 2021, we issued and sold 5,298,360 shares of common stock, which included 298,360 shares of our common stock issued pursuant to the over-allotment option granted to the underwriters to purchase additional shares of

common stock, at a public offering price of \$16.00 per share. We raised \$76.2 million in net proceeds from the IPO after deducting underwriters' discounts and commissions of \$5.9 million and issuance costs of \$2.6 million.

In February 2023, we raised \$23.0 million in a follow-on public offering. We issued and sold 5,750,000 shares of common stock which included 750,000 shares of our common stock issued pursuant to the over-allotment option granted to the underwriters to purchase additional shares of common stock, at a public offering price of \$4.00 per share. We raised \$21.2 million in net proceeds from the follow-on public offering after deducting underwriters' commissions of \$1.4 million and issuance costs of \$0.4 million.

In January 2024, we raised \$241.5 million in a follow-on public offering. We issued and sold 11,500,000 shares of common stock which included 1,500,000 shares of common stock sold pursuant to the full exercise by the underwriters of their option to purchase additional shares, at a public offering price of \$21.00 per share. We raised \$226.5 million in net proceeds from the follow-on public offering after deducting underwriters' commissions of \$14.5 million and other expenses of \$0.5 million.

In March 2024, we completed a \$59.9 million private placement of our non-voting common stock.

Sales Agreement

In September 2022, we entered into a Controlled Equity OfferingSM Sales Agreement (the Sales Agreement) with Cantor Fitzgerald & Co., as sales agent (Cantor Fitzgerald), pursuant to which we may issue and sell our common stock from time to time through an "at the market offering" (ATM) program under the Sales Agreement. We have no obligation to sell any shares of common stock under the Sales Agreement and may at any time suspend sales under the Sales Agreement. Cantor Fitzgerald will be entitled to compensation in an amount of 3% of the gross proceeds of any shares of common stock sold under the Sales Agreement. In August 2023, we filed a prospectus supplement to offer up to \$75.0 million of shares of common stock under the Sales Agreement. During 2023 we sold 1,422,250 shares of our common stock under the Sales Agreement for gross proceeds of \$8.8 million. In March 2024, we filed a sales agreement prospectus to offer up to \$150.0 million of shares of common stock under the Sales Agreement (exclusive of shares sold previously). As of March 31, 2024, we had not sold any shares of common stock pursuant to the most recent sales agreement prospectus.

Material Cash Requirements

We have incurred net losses and negative cash flows from operations since our inception and anticipate we will continue to incur net losses for the foreseeable future.

We expect that our existing cash, cash equivalents and short-term investments will be sufficient to fund our operations for at least the next 12 months. We believe we will meet longer-term expected future cash requirements and obligations beyond the next 12 months by utilizing our existing cash, cash equivalents and short-term investments and through a combination of equity offerings, debt financings, collaborations, licenses and other similar arrangements. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially. We have based our estimate on assumptions that may prove to be wrong, and we could deplete our capital resources sooner than we expect. Additionally, the process of testing product candidates in clinical trials is costly, and the timing of progress and expenses in these trials is uncertain. Our ability to fund longer-term operating needs will depend on our ability to commercialize product candidates for which we may obtain regulatory approval, our ability to access the capital markets and other factors, including those discussed in Part II, Item 1A, "Risk Factors" of this Quarterly Report.

Our future capital requirements will depend on many factors, including:

- the type, number, scope, progress, expansions, results, costs and timing of our research programs, preclinical studies and clinical trials for our current and any future product candidates and the potential indications which we are pursuing or may choose to pursue in the future;
- the outcome, timing and costs of regulatory review of our product candidates;
- the costs and timing of manufacturing for our product candidates, including commercial manufacturing;
- our efforts to enhance operational systems and hire additional personnel to satisfy our obligations as a public company, including enhanced internal controls over financial reporting;
- the costs associated with hiring additional personnel and consultants as our preclinical and clinical activities increase;

- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements;
- the costs of obtaining, expanding, maintaining and enforcing our patent and other intellectual property rights;
- the costs and timing of establishing or securing sales and marketing and distribution capabilities, whether alone or with third parties, to commercialize product candidates for which we may obtain regulatory approval, if any;
- the timing and amount of the payments we are obligated to make under the Arena License Agreement;
- our ability to achieve sufficient market acceptance, coverage and adequate reimbursement from third-party payors and adequate market share and revenue for any approved products;
- patients' willingness to pay out-of-pocket for any approved products in the absence of coverage and/or adequate reimbursement from third-party payors;
- costs associated with any product candidates, products or technologies that we may in-license or acquire; and
- if we experience any delays or encounter any issues with any of the above.

Developing pharmaceutical products, including conducting research, preclinical studies 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 for any product candidates or generate revenue from the sale of any product candidate for which we may obtain marketing approval. 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 at least several years, if ever. As a result, we will need substantial additional financing to support our continuing operations and further the development of and commercialize our product candidates.

Until such time as we can generate significant revenue from sales of our product candidates, if ever, we expect to finance our cash needs through a combination of public or private equity offerings, debt financings or other capital sources, including potential collaborations, licenses and other similar arrangements. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all. Our ability to raise additional funds may be adversely impacted by potential worsening global economic conditions and disruptions to, and volatility in, the credit and financial markets in the United States and worldwide. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be or could be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing and equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise funds through collaborations, or other similar arrangements with third parties, we may have to relinquish valuable rights to our product candidates, future revenue streams or research programs or may have to grant licenses on terms that may not be favorable to us and/or may reduce the value of our common stock. 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 research and development programs, future commercialization efforts or other operations, or grant rights to develop and market our product candidates that we would otherwise prefer to develop and market ourselves, which would have a negative impact on our financial condition.

Cash Flows

The following table sets forth a summary of our cash flows for the three months ended March 31, 2024 and 2023:

(in thousands)	Three Months Ended March 31,			
	2024		2023	
Net cash used in operating activities	\$	(15,177)	\$	(13,097)
Net cash provided by (used in) investing activities		(230,919)		6,083
Net cash provided by financing activities		286,404		21,360
Net increase in cash, cash equivalents and restricted cash	\$	40,308	\$	14,346

Operating Activities

Net cash used in operating activities was \$15.2 million and \$13.1 million for the three months ended March 31, 2024 and 2023, respectively. Net cash used in operating activities for the three months ended March 31, 2024 was primarily due to our net loss of

\$15.0 million, adjusted for \$1.7 million of stock-based compensation expense and \$0.1 million from changes in operating assets and liabilities. Net cash used in operating activities for the three months ended March 31, 2023 was primarily due to our net loss of \$11.5 million, adjusted for \$0.7 million of stock-based compensation expense and \$2.3 million from changes in operating assets and liabilities.

Investing Activities

Net cash used in investing activities was \$230.9 million for the three months ended March 31, 2024 and net cash provided by investing activities was \$6.1 million for the three months ended March 31, 2023. Net cash used in investing activities for the three months ended March 31, 2024 was related to \$255.1 million of short-term investment purchases, which was offset by \$24.2 million in short-term investment maturities. Net cash provided by investing activities for the three months ended March 31, 2023 was related to \$20.6 million of short-term investment purchases, which was offset by \$26.7 million in short-term investment maturities.

Financing Activities

Net cash provided by financing activities was \$286.4 million and \$21.4 million for the three months ended March 31, 2024 and 2023, respectively. Net cash provided by financing activities during the three months ended March 31, 2024 was primarily comprised of net proceeds of \$226.5 million from our January 2024 follow-on offering and \$59.9 million from our March 2024 private placement. Net cash provided by financing activities during the three months ended March 31, 2023 was primarily comprised of net proceeds of \$21.4 million from our February 2023 follow-on public offering, which excluded \$0.2 million of expenses not yet paid.

Critical Accounting Estimates

Our financial statements are prepared in accordance with generally accepted accounting principles in the United States. The preparation of our financial statements and related disclosures requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, costs and expenses, and the disclosure of contingent assets and liabilities in our financial statements. We base our estimates on historical experience, known trends and events and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on a periodic basis. Our actual results may differ from these estimates.

While our significant accounting policies are described in more detail in the notes to our financial statements appearing in our 2023 Annual Report, we believe that the following accounting policies are critical to understanding our historical and future performance, as the policies relate to the more significant areas involving management's judgments and estimates used in the preparation of our financial statements. There have been no significant changes in our critical accounting policies and estimates during the three months ended March 31, 2024, as compared to the critical accounting policies and estimates disclosed in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in our 2023 Annual Report.

Accrued Research and Development Expenses

As part of the process of preparing our financial statements, we are required to estimate our accrued research and development expenses as of each balance sheet date. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of actual costs. The majority of our service providers invoice us in arrears for services performed, based on a pre-determined schedule or when contractual milestones are met, but some require advance payments. We make estimates of our accrued expenses as of each balance sheet date in the financial statements based on facts and circumstances known to us at that time. If timelines or contracts are modified based upon changes in the protocol or scope of work to be performed, we modify our estimates and accruals accordingly on a prospective basis.

We base our expenses related to external research and development services on our estimates of the services received and efforts expended pursuant to quotes and contracts with vendors that conduct research and development on our behalf. 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 vendors will exceed the level of services provided and result in a prepayment of the 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 the estimate, we adjust the accrual or the amount of prepaid expenses accordingly.

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 differences between our estimates of such expenses and the amounts actually incurred.

As of March 31, 2024, a hypothetical 10.0 percent increase in our liability for accrued research and development expenses would have resulted in an increase to our net loss of approximately \$0.7 million.

Emerging Growth Company and Smaller Reporting Company Status

We are an “emerging growth company” under the Jumpstart Our Business Startups Act of 2012 (JOBS Act), and as such, we can take advantage of an extended transition period for complying with new or revised accounting standards. This provision allows an emerging growth company to delay the adoption of accounting standards that have different effective dates for public and private companies until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption from new or revised accounting standards, and therefore we will not be subject to the same requirements to adopt new or revised accounting standards as other public companies that are not emerging growth companies.

We will cease to be an emerging growth company prior to the end of December 31, 2026, if certain earlier events occur, including if we become a “large accelerated filer” as defined in Rule 12b-2 under the Exchange Act, our annual gross revenues exceed \$1.235 billion or we issue more than \$1.0 billion of non-convertible debt in any three-year period.

We are also a “smaller reporting company” as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as our voting common stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than \$100.0 million during the most recently completed fiscal year and our voting common stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Under SEC rules and regulations, as a smaller reporting company we are not required to provide the information required by this item.

Item 4. Controls and Procedures.*Evaluation of Disclosure Controls and Procedures*

We maintain “disclosure controls and procedures,” as defined in Exchange Act Rules 13a-15(e) and 15d-15(e) that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and (ii) accumulated and communicated to our management, including our principal executive and principal financial officer, as appropriate to allow timely decisions regarding required disclosure. Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and our management necessarily applies its judgment in evaluating the cost benefit relationship of possible controls and procedures. Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their control objectives.

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of March 31, 2024, the end of the period covered by this Quarterly Report. Based upon such evaluation, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of such date.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(d) and 15d-15(d) under the Exchange Act) during the quarter ended March 31, 2024 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business activities. There are no material legal proceedings to which we are a party or of which any of our property is the subject. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources, negative publicity, reputational harm and other factors.

Item 1A. Risk Factors.

An investment in shares of our common stock is speculative and involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this Quarterly Report, including our unaudited condensed financial statements and the related notes and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” before deciding whether to purchase, hold or sell shares in our common stock. The occurrence of any of the risks described below could harm our business, financial condition, results of operations, growth prospects and/or stock price or cause our actual results to differ materially from those contained in forward-looking statements we have made in this Quarterly Report and those we may make from time to time. You should consider all of the risk factors described when evaluating our business. We have marked with an asterisk () those risk factors that are new risk factors or ones containing substantive changes from the similarly titled risk factors included in our 2023 Annual Report.*

Risks Related to Our Limited Operating History, Financial Position and Need For Additional Capital

We have a limited operating history, and we have incurred losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future. We may never generate any revenue or become profitable or, if we achieve profitability, we may not be able to sustain it.*

We were incorporated in January 2020, and we have a limited operating history upon which you can evaluate our business and prospects. Our operations to date have been primarily focused on organizing and staffing our company, research and development activities, business planning, raising capital, in-licensing intellectual property rights and establishing our intellectual property portfolio, and providing general and administrative support for these operations. In the first quarter of 2024 we announced topline results from a Phase 1b/2a clinical trial for our most advanced product candidate, bexicaserin (LP352), and planning for a Phase 3 program is ongoing. We are also conducting a Phase 1 SAD clinical trial in healthy volunteers for our next most advanced product candidate, LP659, with topline data anticipated in the second quarter of 2024. Our other development efforts are in the research stage. We have not yet demonstrated an ability to overcome many of the risks and uncertainties frequently encountered by companies in the biopharmaceutical industry, including an ability to obtain regulatory approval of a product candidate, manufacture any product candidate at commercial scale, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. In addition, we have limited experience completing clinical trials as a company. Consequently, any predictions about our future performance may not be as accurate as they would be if we had a history of successfully developing and commercializing biopharmaceutical products.

Investment in biopharmaceutical product development is highly speculative because it entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to demonstrate adequate effectiveness in the targeted indication or an acceptable safety profile, gain regulatory approval and become commercially viable. We have no products approved for commercial sale and have not generated any revenue to date, and we continue to incur significant research and development and other expenses related to our ongoing operations. As a result, we are not profitable and have incurred net losses since our inception in January 2020. For the three months ended March 31, 2024 and 2023, we reported net losses of \$15.0 million and \$11.5 million, respectively. As of March 31, 2024, we had an accumulated deficit of \$155.6 million.

We expect to continue to incur significant losses for the foreseeable future, and we expect these losses to increase as we:

- continue to invest in our research and development activities, including conducting preclinical and clinical studies and hiring additional personnel to support the conduct of those studies;
- submit Investigational New Drug applications (INDs) and conduct clinical trials for our current and future product candidates;
- operate as a public company and hire additional personnel and build our internal resources in related areas, including those related to audit, patent, other legal, regulatory and tax-related services associated with maintaining compliance with exchange listing and Securities and Exchange Commission (SEC) requirements, and incur costs related to director and officer insurance premiums and investor and public relations;

- obtain, expand, maintain, enforce and protect our intellectual property portfolio;
- seek marketing approvals for any product candidates that successfully complete the clinical trial process; and
- establish a sales, marketing and distribution infrastructure and establish manufacturing capabilities, whether alone or with third parties, to commercialize product candidates for which we may obtain regulatory approval, if any.

To become and remain profitable, we must succeed in developing and eventually commercializing products that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing clinical trials and preclinical studies of our product candidates, obtaining regulatory approval for these product candidates and manufacturing, marketing and selling any products for which we may obtain regulatory approval. We are only in the preliminary stages of most of these activities. We may never succeed in these activities and, even if we do, may never generate revenues that are significant enough to achieve profitability. We may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. The size of our future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenue. Because of the numerous risks and uncertainties associated with biopharmaceutical 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 profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would depress the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our product candidates or even continue our operations. Our prior net losses and expected future net losses have had and will continue to have an adverse effect on our stockholders' equity and working capital. A decline in the value of our company could also cause you to lose all or part of your investment.

We will need substantial additional capital to finance our operations, which may not be available on acceptable terms, or at all. The effects of macroeconomic conditions and geopolitical events, including economic slowdowns, recessions, inflation, high interest rates, bank failures and tightening of credit markets, the conflicts in Ukraine, the Middle East or elsewhere, or otherwise, may limit our access to capital. Failure to obtain or have access to this necessary capital when needed may force us to delay, limit or terminate certain of our product development efforts or other operations.*

We expect our expenses to increase substantially in connection with our ongoing and planned activities, particularly as we continue to develop our product candidates in preclinical studies and clinical trials and expand our organization by hiring additional personnel. Our expenses will increase substantially if our product candidates successfully complete early clinical and other studies, and also could increase beyond expectations if the U.S. Food and Drug Administration (FDA) or other regulatory authorities require us to perform clinical and other studies in addition to those that we currently anticipate. In addition, we have incurred and expect to continue to incur additional costs associated with operating as a public company. Furthermore, if we obtain marketing approval for our product candidates, we expect to incur significant expenses related to manufacturing, marketing, sales and distribution.

As of March 31, 2024, our cash, cash equivalents and short-term investments were \$321.0 million. In January 2024, we completed a public offering of common stock and received gross proceeds of \$241.5 million before deducting underwriting discounts and commissions and offering expenses. In March 2024, we completed a private placement of non-voting common stock and received net proceeds of \$59.8 million. We believe, based on our current operating plan, that our existing cash, cash equivalents and short-term investments will be sufficient to fund our operations for at least the next 12 months. However, our operating plan may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings, third-party funding, marketing and distribution arrangements, as well as other collaborations, strategic alliances and licensing arrangements, or any combination of these approaches.

In any event, we will require substantial additional capital to support our business operations as we pursue additional preclinical and clinical activities and regulatory approval of our current or any future product candidates, and otherwise to support our continuing operations. 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. Even if we believe we have sufficient capital for our current or future operating plans, we may seek additional capital if market conditions are favorable or if we have specific strategic considerations. Any additional capital raising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and, if approved, commercialize our current and any future product candidates.

Additional funding may not be available on acceptable terms, or at all. Adverse geopolitical and macroeconomic developments, such as a health epidemic or pandemic, geopolitical conflicts (including in Ukraine and the Middle East) and related sanctions, global supply chain challenges, high inflation and the responses by central banking authorities to control inflation, have previously caused, and may in the future cause, the global credit and financial markets to experience extreme volatility and disruptions, diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, bank failures, increases in unemployment rates, and uncertainty regarding economic stability. If the equity and credit markets deteriorate or are otherwise not favorable, it may make any necessary debt or equity financing more difficult, more costly or more dilutive. If we do not raise

additional capital in sufficient amounts, we may be prevented from pursuing development and commercialization efforts, which would adversely affect our business, results of operations, financial condition and prospects.

In March 2023, Silicon Valley Bank (SVB) was closed by the California Department of Financial Protection and Innovation, which appointed the FDIC as receiver. Subsequently, the U.S. Treasury, Federal Reserve and FDIC announced that SVB depositors would have access to all of their money, and SVB was then acquired by First Citizens Bank. We have a banking relationship with SVB and hold a small amount of cash in SVB depository accounts to cover short-term operational payments. While we have not experienced any losses in such accounts, the failure of SVB caused us to utilize our accounts at other financial institutions in order to mitigate potential operational risks stemming from the temporary inability to access funds in our SVB operating accounts. Bank failures such as SVB's could significantly impair our access to funding sources in amounts adequate to finance or capitalize our current and projected future business operations and could negatively impact the financial institutions with which we have direct arrangements, or the financial services industry or economy in general.

Raising additional capital or acquiring or licensing assets by issuing equity or debt securities may cause dilution to our stockholders and raising funds through lending and licensing arrangements may restrict our operations or require us to relinquish proprietary rights.

We may seek additional capital through a combination of public and private equity offerings, debt financings, strategic partnerships and alliances and licensing arrangements. 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 stockholder. The incurrence of indebtedness would result in increased fixed payment obligations and could involve certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. If we raise additional capital through future collaborations, strategic alliances or third-party licensing arrangements, we may have to relinquish valuable rights to our intellectual property, 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 capital 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 develop and market ourselves.

Unfavorable geopolitical and macroeconomic developments could adversely affect our business, financial condition or results of operations.

From time to time we may maintain a portfolio of investments in marketable debt securities, which are recorded at fair value. Although we have established investment guidelines relative to diversification and maturity with the objectives of maintaining safety of principal and liquidity, we rely on credit rating agencies to help evaluate the riskiness of investments, and such agencies may not accurately predict such risk. In addition, such agencies may reduce the credit quality of our individual holdings, which could adversely affect their value. Lower credit quality and other market events, such as changes in interest rates and deterioration in credit markets, may have an adverse effect on the fair value of our investment holdings and cash position.

Our business could be adversely affected by conditions in the U.S. and global economies, the United States and global financial markets and adverse geopolitical and macroeconomic developments, including high inflation, the conflicts in Ukraine and the Middle East and related sanctions, bank failures, and economic uncertainties related to these conditions.

Risks Related to the Development and Commercialization of Our Product Candidates

We are early in our development efforts. In the first quarter of 2024 we announced topline results from a Phase 1b/2a clinical trial for our most advanced product candidate, bexicaserin, and we are planning for a Phase 3 program. We are also conducting a Phase 1 clinical trial for our next most advanced product candidate, LP659, with topline SAD data expected in the second quarter of 2024. Our other development efforts are in the research stage. If we are unable to advance our product candidates in clinical development, obtain regulatory approval and ultimately commercialize our product candidates, or experience significant delays in doing so, our business will be materially harmed.*

We are in the early stages of our development efforts, and none of our product candidates have advanced into a pivotal study. Our ability to generate product revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our product candidates.

Our most advanced product candidates, bexicaserin and LP659, are in the clinical testing phase of development. In the first quarter of 2024, we announced topline results from the PACIFIC Study, a Phase 1b/2a clinical trial for bexicaserin. Planning for a Phase 3 program for bexicaserin is ongoing. We are also conducting a Phase 1 SAD clinical trial for LP659 in healthy volunteers, with topline data expected in the second quarter of 2024. All of our other development efforts are in the research stage and we will need to progress them through IND-enabling studies and submit INDs to the FDA or other comparable foreign regulatory agencies prior to initiating their clinical development.

The success of our product candidates will depend on several factors, including the following:

- successful enrollment in clinical trials and completion of clinical trials and preclinical studies with favorable results;
- clearance of INDs by the FDA or similar regulatory filings by comparable foreign regulatory authorities for the conduct of clinical trials of our product candidates and our proposed design of future clinical trials, including dosing levels;
- demonstrating the safety and efficacy of our product candidates to the satisfaction of applicable regulatory authorities;
- the effect of recent or potential health care legislation in the United States and European Union;
- receipt of marketing approvals from applicable regulatory authorities, including NDAs from the FDA and maintaining such approvals;
- making arrangements with third-party manufacturers for, or establishing, clinical and commercial manufacturing capabilities;
- establishing sales, marketing and distribution capabilities and launching commercial sales of our products, if and when approved, whether alone or in collaboration with others;
- establishing and maintaining of patent and trade secret protection or regulatory exclusivity for our product candidates;
- our ongoing relationship with Pfizer, the parent company of Arena, from whom we license product candidates, including bexicaserin and LP659;
- maintaining an acceptable safety profile of our products following approval;
- the availability of adequate reimbursement for our products following approval;
- acceptance by physicians, payors and patients of the benefits, safety and efficacy of our products following approval; and
- building and maintaining an organization of people who can successfully develop, sell and distribute our product candidates.

The success of our business, including our ability to finance our company and generate any revenue in the future, will primarily depend on the successful development, regulatory approval and commercialization of our most advanced product candidate, bexicaserin, as well as our other product candidates, which may never occur. While we have announced topline safety and efficacy data from the PACIFIC Study for bexicaserin, we have not yet demonstrated efficacy and safety sufficient for obtaining marketing approval for bexicaserin or any other product candidate. Given our early stage of development, it could take several years before we can demonstrate the safety and efficacy of a treatment sufficient to warrant approval for commercialization, if we can do so at all. If we are unable to develop, or obtain regulatory approval for, or, if approved, successfully commercialize our product candidates, we may not be able to generate sufficient revenue to continue our business.

Risks associated with the in-licensing or acquisition of product candidates could cause substantial delays in the preclinical and clinical development of our product candidates.

Prior to October 2020, we had no involvement with or control over the preclinical and early clinical research and development of our product candidates. We have relied on third parties, including Arena, to have conducted such research and development in accordance with the applicable protocol, legal, regulatory and scientific standards prior to the in-licensing of our product candidates. If the research and development processes or the results of the development programs prior to the in-licensing of our product candidates prove to be unreliable, this could result in increased costs and delays in the development of our product candidates, which could adversely affect any future revenue from these product candidates.

We have licensed product candidates, including bexicaserin and LP659, from Arena, which has been acquired by Pfizer. The fields of the licenses for certain of these product candidates contain restrictions. For example, the field of license for LP659 is for developmental, degenerative and autoimmune disease, disorders or conditions of the CNS or peripheral nervous system. We also rely on Arena to help protect the intellectual property rights relating to our licensed product candidates. The scope of our license or

Arena's failure to cooperate with us to protect our intellectual property could have an adverse impact on our ability to develop our product candidates and could limit our ability to successfully commercialize our product candidates.

We may also acquire or in-license additional product candidates for preclinical or clinical development in the future as we continue to build our pipeline. The risks associated with acquiring or in-licensing current or future product candidates could result in delays in the commencement or completion of our research and development, prevent or impede our commercialization, and adversely affect or delay our ability to generate revenues from our product candidates.

Clinical and preclinical drug development involves a lengthy and expensive process with an uncertain outcome. The results of prior clinical trials and early preclinical studies and clinical trials of our product candidates are not necessarily predictive of future results.*

Before we can initiate clinical trials for our product candidates, we must submit the results of preclinical studies to the FDA, European Medicines Agency (EMA) or comparable regulatory authorities along with other information, including information about product candidate chemistry, manufacturing and controls, and our proposed clinical trial protocol, as part of an IND or similar regulatory filing. Before obtaining marketing approval from the FDA, EMA or other comparable foreign regulatory authorities for the sale of our product candidates, we must complete preclinical development and extensive clinical trials to demonstrate the safety and efficacy of our product candidates. Clinical and preclinical drug development is expensive and can take many years to complete, and its outcome is inherently uncertain. Our clinical trials may not be conducted as planned or completed on schedule, if at all, and failure can occur at any time during the preclinical study or clinical trial process. Despite promising preclinical or clinical results, any product candidate can unexpectedly fail at any stage of preclinical or clinical development. The historical failure rate for product candidates in our industry is high. The results from preclinical studies or early clinical trials of a product candidate may not predict the results of later clinical trials of the product candidate, and interim results of a clinical trial are not necessarily indicative of final results. Furthermore, product candidates in later stages of clinical trials may fail to show the desired safety and efficacy characteristics despite having progressed through preclinical studies and initial clinical trials.

In particular, while we announced positive topline results from the Phase 1b/2a PACIFIC Study for bexicaserin in the first quarter of 2024, we do not know how bexicaserin will perform in any future clinical trials, including our planned Phase 3 program. It is not uncommon to observe results in clinical trials that are unexpected based on preclinical studies and earlier clinical trials, and many product candidates fail in clinical trials despite very promising early results. Moreover, preclinical and clinical data may be susceptible to varying interpretations and analyses. A number of companies in the biopharmaceutical industry have suffered significant setbacks in clinical development even after achieving promising results in earlier studies, or after others, including regulatory authorities, disagreed with such companies' views and interpretations of the data and results from earlier preclinical studies or clinical trials. As we investigate bexicaserin for developmental and epileptic encephalopathies (DEEs) and other epileptic diseases, we may encounter difficulties that we have not yet encountered. For example, bexicaserin has to date been studied in a population of ages 12 to 65, and for our global Phase 3 program, we intend to use PK modeling to determine appropriate dosing for patients ages 2 to 11. This work is ongoing and we may encounter unforeseen difficulties. Furthermore, we are conducting a Phase 1 SAD clinical trial for LP659 in healthy volunteers, with topline data expected in the second quarter of 2024. The FDA has placed a partial clinical hold on MAD or other repeat dose studies, pending review of safety data from the SAD study and other related information. For these and other reasons, we may not initiate or complete planned or ongoing clinical studies for our current or future product candidates in the time or manner we desire, or at all.

Events that may prevent successful or timely completion of clinical development include:

- delays in reaching, or inability to reach, a consensus with regulatory authorities on trial design or implementation;
- delays in obtaining regulatory authorization to commence a trial as proposed or at all;
- the FDA's, EMA's or comparable regulatory authorities' failure to accept our proposed manufacturing processes and suppliers and/or requirement to provide additional information regarding our manufacturing processes before providing marketing authorization;
- delays in reaching agreement on acceptable terms with prospective clinical research organizations (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;
- delays in obtaining approval from one or more institutional review boards (IRBs), or IRBs refusing to approve, suspending or terminating the trial at an investigational site, precluding enrollment of additional participants, or withdrawing their approval of the trial;
- delays in recruiting suitable participants to participate in our ongoing and planned clinical trials;

- changes to the clinical trial protocol;
- clinical sites deviating from trial protocol or dropping out of a trial;
- delays in manufacturing sufficient quantities of our product candidates or obtaining sufficient quantities of combination therapies for use in clinical trials;
- delays in having participants complete participation in a trial or return for post-treatment follow-up;
- participants choosing an alternative treatment for the indication for which we are developing our product candidates, or participating in competing clinical trials;
- lack of adequate funding to continue a trial;
- occurrence of adverse events (AEs) or serious adverse events (SAEs) associated with the product candidate that are viewed to outweigh its potential benefits;
- occurrence of SAEs in trials of the same class of agents conducted by other companies;
- selection of clinical end points that require prolonged periods of clinical observation or analysis of the resulting data;
- a facility manufacturing our product candidates or any of their components being ordered by the FDA or comparable foreign regulatory authorities to temporarily or permanently shut down due to violations of current good manufacturing practice (cGMP) regulations or other applicable requirements, or infections or cross-contaminations of product candidates in the manufacturing process;
- third-party clinical investigators losing the licenses or permits necessary to perform our clinical trials, not performing our clinical trials on our anticipated schedule or consistent with the clinical trial protocol or good clinical practices (GCP) or other regulatory requirements;
- the impact of geopolitical and macroeconomic developments, including ongoing conflicts in Ukraine and the Middle East, and related economic instability and uncertainty, on our ongoing and planned clinical trials; or
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols.

We could encounter delays if a clinical trial is suspended, terminated or modified by us, by the IRBs of the institutions in which such trials are being conducted, by a Data Safety Monitoring Board for such trial or by the FDA or comparable foreign regulatory authorities. Such authorities may impose such a 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 comparable foreign regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, 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. In addition, changes in regulatory requirements and policies may occur, and we may need to amend clinical trial protocols to comply with these changes. Amendments may require us to resubmit our clinical trial protocols to IRBs for reexamination, which may impact the costs, timing or successful completion of a clinical trial.

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

In addition, adverse geopolitical and macroeconomic developments, including disruptions caused by a pandemic or the ongoing conflicts in Ukraine and the Middle East, may increase the likelihood that we encounter difficulties or delays in initiating, screening, enrolling, conducting, or completing our ongoing and planned preclinical studies and clinical trials. Clinical site initiation and participant screening and enrollment may be delayed due to prioritization of hospital resources toward a pandemic, or to the extent the ongoing conflicts in Ukraine and the Middle East escalate to involve additional countries, further economic sanctions or wider military conflict impacting regions where we conduct clinical trials. Investigators and participants may not be able to comply with clinical trial protocols if quarantines impede participant movement or interrupt healthcare services. Similarly, our ability to recruit and retain participants and principal investigators and site staff who, as healthcare providers, may have heightened exposure to pathogens, could be limited, which in turn could adversely impact our clinical trial operations. Additionally, we may experience interruption of key clinical trial activities, such as clinical trial site monitoring, due to limitations on travel, quarantines or social distancing protocols imposed or recommended by federal or state governments, employers and others in connection with a health epidemic or pandemic.

Any inability to successfully complete preclinical and clinical development could result in additional costs to us or impair our ability to generate revenue from future product sales and regulatory and commercialization milestones. In addition, if we make

manufacturing or formulation changes to our product candidates, we may need to conduct additional testing to bridge our modified product candidate to earlier versions. Clinical trial delays could also shorten any periods during which we may have the exclusive right to commercialize our product candidates, if approved, or allow our competitors to bring comparable products to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business, financial condition, results of operations and prospects.

We have limited experience as a company in conducting clinical trials, have never conducted later-stage clinical trials or submitted an NDA or other marketing application, and may be unable to do so for any of our product candidates.

We are early in our development efforts for our product candidates, and we will need to successfully complete Phase 1 clinical trials and later-stage and pivotal clinical trials in order to obtain FDA or comparable foreign regulatory approval to market bexicaserin, LP659, or any future product candidates. Carrying out clinical trials and the submission of marketing applications is complicated. To date, we have only completed a limited number of trials for one of our product candidates, bexicaserin. We have not completed any clinical trials of any other product candidates, have not completed any later-stage or pivotal clinical trials, have limited experience as a company in preparing, submitting and prosecuting regulatory filings and have not previously submitted an NDA or other comparable foreign regulatory submission for any product candidate. We also plan to conduct a number of clinical trials for multiple product candidates in parallel over the next several years. This may be a difficult process to manage with our limited resources and may divert the attention of management. In addition, we have had limited interactions with the FDA and cannot be certain how many clinical trials of our product candidates will be required or how such trials will have to be designed. For example, we conducted a Phase 1b/2a trial with bexicaserin that enrolled participants with a broad range of DEEs and which was designed to include multiple clinically defined populations under one investigational protocol. We may seek to conduct our pivotal trials for bexicaserin with a similar design. Such a trial design could potentially decrease the time to study new populations by decreasing administrative burden, however, this trial may not provide opportunities for accelerated regulatory pathways and may not overcome limitations to extrapolating data from the experience in one disease to other diseases, because safety and efficacy results in each indication may be analyzed separately. Accordingly, success in a clinical trial in a broad range of DEEs, or any trial in one indication, may not predict success in other indications. The FDA and other regulatory health authorities may not view such a design or the data from such trials favorably. Consequently, we may be unable to successfully and efficiently execute and complete necessary clinical trials in a way that leads to regulatory submission and approval of any of our product candidates. We may require more time and incur greater costs than our competitors and may not succeed in obtaining regulatory approvals of product candidates that we develop. Failure to commence or complete, or delays in, our planned clinical trials, could prevent us from or delay us in submitting marketing applications for and commercializing our product candidates.

Because we have multiple product candidates in our pipeline and are considering a variety of target indications, we may expend our limited resources to pursue a particular product candidate 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 specific product candidates, indications and development programs. We may also conduct several clinical trials for our product candidates in parallel over the next several years, which may make our decision as to which product candidates to focus on more difficult. For example, in the first quarter of 2024 we reported topline data from the PACIFIC Study for bexicaserin for the treatment of seizures associated with DEEs, including Lennox-Gastaut syndrome (LGS), Dravet syndrome and other DEEs, and we are currently planning for a Phase 3 program for bexicaserin. We are also conducting a Phase 1 SAD clinical trial for LP659 in healthy volunteers, for which we expect topline data in the second quarter of 2024. In addition, we have earlier-stage research efforts ongoing. As a result, we may forgo or delay pursuit of opportunities with other product candidates or other indications that could have had greater commercial potential or likelihood of success. Our resource allocation decisions may cause us to fail to 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. In addition, 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 future collaborations, licenses and other similar arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

Enrollment and retention of participants in clinical trials is an expensive and time-consuming process and could be made more difficult or rendered impossible by multiple factors outside our control.

Participant enrollment is a significant factor in the timing of clinical trials, and the timing of our clinical trials depends, in part, on the speed at which we can recruit participants to participate in our trials, as well as completion of required follow-up periods. Participant enrollment and retention in clinical trials depends on many factors, including the size and nature of the patient population, the severity of the disease under investigation, the nature of the trial protocol, the existing body of safety and efficacy data for the product candidate, the number and nature of competing treatments and ongoing clinical trials of competing therapies for the same

indication, the proximity of participants to clinical sites, the eligibility criteria for the trial, the ability to adequately monitor participants during a trial, clinicians' and participants' perceptions as to the potential advantages of the product candidate being studied, and the risk that participants will drop out of a trial before completing all site visits. There are limited patient pools from which to draw in order to complete our clinical trials in a timely and cost-effective manner, including due to the fact that the neurological diseases we target are rare.

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 participants to participate in these trials to such trial's conclusion as required by the FDA or other comparable foreign regulatory authorities. Additionally, certain clinical trials for our future product candidates may be focused on indications with relatively small patient populations, which may further limit enrollment of eligible participants or may result in slower enrollment than we anticipate. The eligibility criteria of our clinical trials, once established, may further limit the pool of available trial participants. For example, the number of patients suffering from DEEs, such as Dravet syndrome, LGS and TSC, is small and, in some cases, has not been established with precision. If the actual number of patients with these diseases is smaller than we anticipate, we may encounter difficulties in enrolling participants in our clinical trials or retaining them to complete our clinical trials, thereby delaying or preventing development and approval of our product candidates.

Furthermore, a number of factors could delay or prevent potential participants from participating in our clinical trials. For example, our efforts to build relationships with patient communities may not succeed, which could result in delays in participant enrollment in our clinical trials. Similarly, the escalation of the ongoing conflicts in Ukraine and the Middle East to involve additional countries, further economic sanctions or wider military conflict could delay participant enrollment in our clinical trials. In addition, any negative results we may report in clinical trials of a product candidate may make it difficult or impossible to recruit and retain participants in other clinical trials of that same product candidate. Delays or failures in planned participant enrollment or retention may result in increased costs, program delays or both, which could have a harmful effect on our ability to develop our product candidates, or could render further development impossible. In addition, natural disasters or public health epidemics may delay or prevent participants from enrolling or from receiving treatment in accordance with the protocol and the required timelines, which could delay our clinical trials, or prevent us or our partners from completing our clinical trials at all, and harm our ability to obtain approval for such product candidate. Further, if participants drop out of our clinical trials, miss scheduled doses or follow-up visits, or otherwise fail to follow clinical trial protocols, the integrity of data from our clinical trials may be compromised or not accepted by the FDA or other regulatory authorities, which would represent a significant setback for the applicable program. In addition, we may rely on CROs and clinical trial sites to ensure proper and timely conduct of our future clinical trials and, while we intend to enter into agreements governing their services, we will be limited in our ability to compel their actual performance.

Preliminary, topline and interim data from our clinical trials that we announce or publish from time to time may change as more participant 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 publicly disclose preliminary or topline data from our clinical trials, such as our announcement in the first quarter of 2024 of topline data from the Phase 1b/2a PACIFIC Study for bexicaserin for the treatment of seizures associated with DEEs. These disclosures are based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the topline results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Topline 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, topline data should be viewed with caution until the final data are available. As an example, in March 2024, following our review of the full data set for the Phase 1b/2a PACIFIC Study, we announced an update to the previously reported primary efficacy endpoint data. From time to time, we may also disclose interim data from our clinical studies. Interim data from clinical trials are subject to the risk that one or more of the clinical outcomes may materially change as participant enrollment continues and more participant data become available. Adverse differences between preliminary or interim data and final data could significantly harm our business prospects.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product candidate or product and our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically extensive information, and you or others may not agree with what we determine is the material or otherwise appropriate information to include in our disclosure, and any information we determine not to disclose may ultimately be deemed significant with respect to future decisions, conclusions, views, activities or otherwise regarding a particular product, product candidate or our business. If the topline data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions we

reach, our ability to obtain approval for, and commercialize, our product candidates may be harmed, which could harm our business, operating results, prospects or financial condition.

Our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial potential or result in significant negative consequences following any potential marketing approval.

During the conduct of clinical trials, participants report changes in their health, including illnesses, injuries and discomforts, to their doctor. These conditions may also be observed in preclinical animal studies. Often, it is not possible to determine whether or not the product candidate being studied caused these conditions. Regulatory authorities may draw different conclusions or require additional testing to confirm these determinations, if they occur.

In addition, it is possible that as we test our product candidates in larger, longer and more extensive clinical programs, or as use of these product candidates becomes more widespread if they receive regulatory approval, illnesses, injuries, discomforts and other AEs that were observed in earlier trials, as well as conditions that did not occur or went undetected in previous trials, will be reported by participants. Many times, side effects are only detectable after investigational product candidates are tested in large-scale, Phase 3 trials or, in some cases, after they are made available to participants on a commercial scale after approval. Participants in our ongoing or planned clinical trials may experience similar or other side effects after treatment with one or more of our product candidates. If additional clinical experience indicates that any of our current product candidates and any future product candidates has serious or life-threatening side effects or other side effects that outweigh the potential therapeutic benefit, the development of the product candidate may fail or be delayed, or, if the product candidate has received regulatory approval, such approval may be revoked, which would harm our business, prospects, operating results and financial condition.

Moreover, if we elect, or are required, to delay, suspend or terminate any clinical trial of our product candidates, the commercial prospects of our product candidates may be harmed and our ability to generate revenue through their sale may be delayed or eliminated. Any of these occurrences may harm our business, financial condition and prospects significantly.

Bexicaserin, our most advanced product candidate, is an oral, centrally acting, 5-HT_{2C} receptor superagonist with no observed impact on 5-HT_{2B} and 5-HT_{2A} receptor subtypes in our preclinical studies to date. 5-HT_{2B} and 5-HT_{2A} receptor subtypes have been known to be associated with significant adverse side effects, including valvular heart disease and pulmonary arterial hypertension in the case of the 5-HT_{2B} receptor, and hallucinations and mild to severe anxiety in the case of the 5-HT_{2A} receptor. Bexicaserin has the potential to be a clinically differentiated 5-HT_{2C} superagonist for patients with DEEs. For example, fenfluramine, marketed as FINTEPLA, a non-specific 5-HT₂ agonist, was approved for the treatment of seizures associated with Dravet syndrome and LGS by the FDA in 2020 and 2022, respectively. Fenfluramine has been associated with significant side effects and FINTEPLA has a Risk Evaluation and Mitigation Strategy (REMS) program requirement and a boxed warning. Another 5-HT_{2C} agonist, lorcaserin, is also under evaluation for its potential to reduce seizures in patients with Dravet syndrome and refractory epilepsies. Lorcaserin was discovered by Arena and approved by the FDA for chronic weight management, marketed as BELVIQ by Eisai Inc. Lorcaserin was withdrawn from the market at the request of the FDA following the FDA's analysis of the CAMELLIA-TIMI 61 clinical trial, for which participants in the lorcaserin group demonstrated a numerically higher but not a statistically significantly higher rate of total cancer diagnoses (7.7% vs 7.1% placebo). Based on the results of this clinical trial, the FDA concluded that the risks of lorcaserin outweigh the benefits for the approved indication of weight management and requested that lorcaserin be withdrawn from the market. However, the FDA authorized an expanded access program for patients with Dravet syndrome to continue to receive lorcaserin. Bexicaserin was designed and developed by Arena to be the next generation to lorcaserin, with the goal of being a safer and more effective 5-HT_{2C} agonist. We believe bexicaserin's potential for high selectivity and novel chemistry gives it the potential to reduce seizures in DEE patients and overcome the known or perceived safety limitations of available drugs in the 5-HT₂ class. However, we may not be correct, and the selectivity, specificity or other attributes of bexicaserin may result in similar or less desirable clinical profiles than less selective and specific available drugs or other product candidates.

In addition, if any of our product candidates receive marketing approval, the FDA could require us to include a black box or other warning, or contraindication, in our product labeling, or adopt REMS to ensure that the benefits outweigh its risks, which may include, among other things, a medication guide outlining the risks of the drug for distribution to patients and a communication plan to health care practitioners. Furthermore, if we or others later identify undesirable side effects caused by our product candidates or other products with the same or related active ingredients, several other potentially significant negative consequences could result, including:

- regulatory authorities may suspend or withdraw approvals of such product, if approved;
- regulatory authorities may require additional warnings on the label or issue safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings or other safety information about the product;

- we may be required to change the way a product candidate is administered, conduct additional clinical trials or modify such product in some other way;
- regulatory authorities may require us to modify, suspend or terminate our clinical trials, conduct additional clinical trials or engage in costly post-marketing testing and surveillance to monitor the safety or efficacy of such product;
- we could be sued and held liable for harm caused to patients;
- undesirable side effects may limit physicians' or patients' willingness to initiate or continue therapy with such product;
- sales may decrease significantly;
- we may need to conduct a recall; and
- our brand and reputation or the reputation of any then-approved product may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of our product candidates and could significantly harm our business, prospects, financial condition and results of operations.

If the market opportunities for our product candidates are smaller than we estimate, even assuming approval of a product candidate, our business may suffer. Because the patient populations in the market for our product candidates may be small, we must be able to successfully identify patients and acquire a significant market share to achieve profitability and growth.

If the size of the market opportunities in each of our target indications is smaller than we anticipate, we may not be able to achieve profitability and growth. We focus on developing novel medicines for neurological diseases. Given the small number of patients who have the diseases that we are targeting, our eligible patient population and pricing estimates may differ significantly from the actual market addressable by our product candidates. 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 estimates that have been derived from a variety of sources, including scientific literature, patient foundations, or market research, and which may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these diseases. The number of patients may turn out to be lower than expected. Likewise, the potentially addressable patient population for each of our product candidates may be limited or may not be amenable to treatment with our product candidates, and new patients may become increasingly difficult to identify or gain access to, which would adversely affect our results of operations and our business.

We face substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than us.

The development and commercialization of pharmaceutical products is highly competitive. We face competition with respect to our current product candidates and will face competition with respect to any other product candidates that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. There are a number of large pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of product candidates for the treatment of the indications that we are pursuing. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

DEEs are commonly treated with multiple combinations of ASMs though physician preference for administered therapies differs across different epilepsy types. Pharmaceutical companies such as Jazz, UCB, SK Life Sciences, Marinus Pharmaceuticals and Biocodex have approved ASMs for the treatment of epilepsies. There are also non-pharmaceutical therapies for epilepsy patients, such as a ketogenic diet, vagus nerve stimulation, and surgery for some patients. Several companies have obtained FDA approval for the treatment of seizures associated with DEEs. For example, ZTALMY (ganaxolone) was approved for the treatment of seizures associated with CDKL5 deficiency disorder in March 2022. Fenfluramine was approved for the treatment of seizures associated with Dravet syndrome in June 2020 and LGS in March 2022 and is available for patients through a REMS program. Epidiolex (cannabidiol) was approved for the treatment of seizures associated with Dravet syndrome and LGS in 2018, and for the treatment of seizures associated with TSC in 2020, and DIACOMIT (stiripentol) was approved for seizures associated with Dravet syndrome in 2018. In addition, other companies are developing therapeutics for the treatment of DEEs, including alternative approaches such as gene therapy.

In the S1P receptor modulator space, there are four drugs that have been approved by the FDA for the treatment of certain indications in multiple sclerosis: fingolimod, ozanimod, ponimosid and siponimod. There are multiple additional S1P receptor modulators in development for additional therapeutic indications beyond multiple sclerosis, including in other neurological diseases.

There are also numerous other drugs and product candidates in development for indications for which we might develop our product candidates.

There are a number of large pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of product candidates for the treatment of the indications that we are pursuing. More established companies may have a competitive advantage over us due to their substantially greater size, financial, technical and other resources, and institutional experience. In particular, these companies have greater experience and expertise in securing reimbursement, government contracts, relationships with key opinion leaders, conducting testing and clinical trials, obtaining and maintaining regulatory approvals and distribution relationships to market products, and marketing approved drugs. These companies also have significantly larger research and development staff and experienced marketing and manufacturing organizations and well-established sales forces. If we are not able to compete effectively against existing and potential competitors, our business and financial condition may be harmed.

The key competitive factors affecting the success of our product candidates are likely to be their efficacy and safety, the scope and limitations of marketing approval, success of regulatory approval, successful protection of our intellectual property, and the availability of funding and reimbursement.

As a result of these factors, our competitors may obtain regulatory approval of their drugs before we are able to, which may limit our ability to develop or commercialize our product candidates. Our competitors may also develop therapies that are safer, more effective, more widely accepted and cheaper than ours, and may also be more successful than us in manufacturing and marketing their drugs. These appreciable advantages could render our product candidates obsolete or non-competitive before we can recover the expenses of such product candidates' development and commercialization.

Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller and other early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific, management and commercial personnel, establishing clinical trial sites and subject registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries.

The regulatory approval processes of the FDA and comparable foreign authorities are lengthy, 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.

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 any product candidates we may seek to develop in the future will never 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.

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 adequate and 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. To demonstrate the safety of our clinical products, we may also be required to conduct extensive clinical trials and nonclinical studies, some of which have not been initiated or completed, and may not be completed for several years. For example, we believe that we will need to conduct additional nonclinical studies in juvenile animals, as well as develop a liquid formulation, to support the evaluation of bexicaserin in pediatric populations. We also expect that we will need to conduct additional toxicology, long-term carcinogenicity and other nonclinical studies to support the safety evaluation of bexicaserin and any of our product candidates intended to be administered for an extended period of time. There is no assurance our development or these studies will be successful. In addition, results from nonclinical studies and clinical trials can be interpreted in different ways. Even if we believe the nonclinical 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 preclinical 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. For example, we submitted an IND for LP659 in 2023 and are conducting a Phase 1 SAD clinical trial for LP659 in healthy volunteers. The FDA placed a partial clinical hold on MAD or other repeat dose studies, however, and we may not be able to obtain the FDA's permission to proceed with repeat dose studies for LP659 in the manner we propose or at all.

The FDA or any foreign regulatory bodies can delay, limit or deny approval of our product candidates or require us to conduct additional nonclinical or clinical testing or abandon a program for a variety of reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our preclinical studies or clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for any of its proposed indications;
- the population studied in the clinical trial may not be sufficiently broad or representative to assure safety or demonstrate efficacy in the full population for which we seek approval;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- serious and unexpected drug-related side effects experienced by participants in our clinical trials or by individuals using drugs similar to our product candidates;
- we may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be acceptable or sufficient to support the submission of an NDA or other submission or to obtain regulatory approval in the United States or elsewhere, and we may be required to conduct additional clinical studies;
- the FDA or comparable foreign regulatory authorities may disagree regarding the formulation, labeling and/or specifications of our product candidates;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our data insufficient for approval.

Any of the above events could prevent us from achieving marketing approval or market acceptance of our product candidates. These could also substantially increase the costs of commercializing our product candidates if they are approved.

Of the large number of products in development, only a small percentage successfully complete FDA or foreign regulatory approval processes and are commercialized. The lengthy 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, financial condition, results of operations and prospects.

Even if our current or future product candidates receive marketing approval, they may fail to achieve market acceptance by physicians, patients, third-party payors or others in the medical community necessary for commercial success.

Even if our current or future product candidates receive marketing approval, they may fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. If they do not achieve an adequate level of acceptance, we may not generate significant product revenue and may not become profitable. The degree of market acceptance of our current or future product candidates, if approved for commercial sale, will depend on a number of factors, including but not limited to:

- patient demand;
- the clinical indications for which the product candidate is approved;
- the efficacy and potential advantages compared to alternative treatments and therapies;
- the timing of market introduction of the product as well as competitive products;
- effectiveness of our sales, marketing and distribution efforts and those of the third parties with whom we may contract;
- the strength of our relationships with patient communities;
- the cost of treatment in relation to alternative treatments and therapies, including any similar generic treatments;
- our ability to offer such product for sale at competitive prices;

- the convenience and ease of administration compared to alternative treatments and therapies;
- 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 availability of third-party coverage and adequate reimbursement;
- the willingness of patients to pay out-of-pocket in the absence of coverage and adequate reimbursement by third-party payors and government authorities;
- potential product liability claims;
- relative convenience and ease of administration, including as compared to alternative treatments and competitive therapies, and patient satisfaction with the overall treatment experience;
- the prevalence and severity of any side effects from the use or potential misuse of any then-approved product or any similar product candidate in development, whether ours or a competitor's; and
- any restrictions on the use of the product together with other medications.

Our efforts to educate physicians, patients, third-party payors and others in the medical community on the benefits of our product candidates may require significant resources and may never be successful. Such efforts may require more resources than are typically required due to the complexity and uniqueness of our product candidates.

In addition, if approved, bexicaserin may face challenges in gaining market acceptance by physicians, patients, third-party payors or others in the medical community as a result of it being a 5-HT_{2C} agonist, which is part of an agonist class associated with significant risks and side effects. For example, fenfluramine, marketed as FINTEPLA, is a non-specific 5-HT₂ agonist, has been associated with significant side effects and FINTEPLA has a REMS program requirement and a boxed warning. Another 5-HT_{2C} agonist, lorcaserin, is also under evaluation for its potential to reduce seizures in patients with Dravet syndrome and refractory epilepsies. Lorcaserin was discovered by Arena and approved by the FDA for chronic weight management, marketed as BELVIQ by Eisai Inc. and withdrawn from the market at the request of the FDA based on a change in the FDA's risk-benefit assessment for the approved indication. However, the FDA authorized an expanded access program for patients with Dravet syndrome to continue to receive lorcaserin.

Although we aim to improve upon current 5-HT_{2C} agonist product profiles with bexicaserin, which was designed to be the next generation to lorcaserin with the goal of being a safer and more effective 5-HT_{2C} agonist, and which we believe has the potential to overcome the limitations of the currently available 5-HT₂ class, if we are unable to do so and to educate physicians, patients, third-party payors and others in the medical community about this product candidate and successfully distinguish the safety profile of this product candidate as compared to those of other products in the 5-HT_{2C} agonist class, we may fail to gain market acceptance of bexicaserin.

Because we expect sales of our product candidates, if approved, to generate substantially all of our revenues for the foreseeable future, the failure of our product candidates, if approved, to find market acceptance would harm our business and could require us to seek additional financing.

Even if we obtain regulatory approval for our current or future product candidates, they will remain subject to ongoing regulatory oversight.

Even if we obtain any regulatory approval for our current or any future product candidates, such approvals will be subject to ongoing regulatory requirements for manufacturing, labeling, packaging, storage, advertising, promotion, import, export, sampling, record-keeping and submission of safety and other post-market information. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as ongoing compliance with cGMPs and GCPs for any clinical trials that we may conduct post-approval. Any regulatory approvals that we receive for our current or future product candidates may also be subject to a REMS, limitations on the approved indicated uses for which the drug may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 trials, and surveillance to monitor the quality, safety and efficacy of the drug.

In addition, drug manufacturers and their facilities are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP requirements and adherence to commitments made in the NDA or foreign marketing application. If we, or a regulatory authority, discover previously unknown problems with a drug, such as AEs of unanticipated severity or frequency, or problems with the facility where the drug is manufactured, or if a regulatory authority disagrees with the promotion, marketing or labeling of that drug, a regulatory authority may impose restrictions

relative to that drug, the manufacturing facility or us, including requesting a recall or requiring withdrawal of the drug from the market or suspension of manufacturing.

If we fail to comply with applicable regulatory requirements following approval of our current or future product candidates, a regulatory authority may:

- issue an untitled letter or warning letter asserting that we are in violation of the law;
- seek an injunction or impose administrative, civil or criminal penalties or monetary fines;
- suspend or withdraw regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve a pending NDA or NDA supplement, or comparable foreign marketing application (or any supplements thereto) submitted by us or our strategic partners;
- restrict or suspend the marketing or manufacturing of the drug;
- seize or detain the drug or otherwise require the withdrawal of the drug from the market;
- refuse to permit the import or export of the drug; or
- refuse to allow us to enter into supply contracts, including government contracts.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize our current or future product candidates and harm our business, financial condition, results of operations and prospects.

In addition, the FDA's policies, and those of equivalent foreign regulatory agencies, may change and additional government regulations may be enacted that could cause changes to or delays in the drug review process, or suspend or restrict regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. 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 and we may not achieve or sustain profitability, which would harm our business, financial condition, results of operations and prospects.

We currently have no marketing and sales organization and have no experience as a company in commercializing products, and we may have to invest significant resources to develop these capabilities. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our products, we may not be able to generate product revenue.

We have not as a company commercialized a product and have limited or no internal sales, marketing or distribution capabilities. If any of our product candidates ultimately receives regulatory approval, we must build a marketing and sales organization with technical expertise and supporting distribution capabilities to commercialize each such product in the markets that we target, which will be expensive and time consuming, or collaborate with third parties that have direct sales forces and established distribution systems, either to augment our own sales force and distribution systems or in lieu of our own sales force and distribution systems. We currently plan to independently commercialize our product candidates in the United States by establishing a focused sales force and marketing infrastructure. We may opportunistically seek additional strategic collaborations to maximize the commercial opportunities for our product candidates outside of the United States. There are significant risks involved in building and managing a sales organization, including our ability to hire, retain and 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 would adversely impact the commercialization of these products. We may not be able to enter into collaborations or hire consultants or external service providers to assist us in sales, marketing and distribution functions on acceptable financial terms, or at all. In addition, our product revenues and our profitability, if any, may be lower if we rely on third parties for these functions than if we were to market, sell and distribute any products that we develop ourselves. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. If we are not successful in commercializing our products, either on our own or through arrangements with one or more third parties, we may not be able to generate any future product revenue and we would incur significant additional losses.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction. For example, even if the FDA grants regulatory approval of a product candidate, comparable regulatory authorities in foreign jurisdictions must also approve the manufacturing, marketing and promotion and reimbursement of the product candidate in those countries. However, a failure or delay in obtaining regulatory approval in one jurisdiction may negatively impact the regulatory approval process in others. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and greater than, those in the United States, including additional preclinical studies or clinical trials as clinical trials conducted in one jurisdiction may not be accepted by regulatory authorities in other jurisdictions. In many jurisdictions outside the United States, a product candidate must be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we intend to charge for our products is also subject to approval.

Obtaining foreign regulatory approvals and establishing and maintaining compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our products in certain countries. If we or any future collaborator fail to comply with the regulatory requirements in international markets or fail to receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed.

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

We face an inherent risk of product liability exposure related to the testing of our current and any future product candidates in clinical trials and may face an even greater risk if we commercialize any product candidate that we may develop. Any side effects, manufacturing defects, failure to follow instructions, misuse or abuse associated with our product candidates could result in injury to a patient or even death. If we cannot successfully defend ourselves against claims that any such product candidates caused injuries, we could incur substantial liabilities and could incur reputational harm. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidate that we may develop;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- substantial monetary awards to trial participants or patients that may not be covered by insurance;
- significant time and costs to defend the related litigation;
- a diversion of management's time and our resources;
- withdrawal of clinical trial participants and termination of clinical trial sites or entire trial programs;
- initiation of investigations by regulators;
- the inability to commercialize any product candidate that we may develop;
- injury to our reputation and significant negative media attention; and
- a decline in our share price.

Large judgments have been awarded in class action and individual lawsuits based on drugs that had anticipated or unanticipated side effects. Any product liability insurance coverage that we obtain and maintain may not be adequate to cover any or all liabilities that we may incur. We anticipate that we will need to increase our insurance coverage each time we commence a clinical trial and if we successfully commercialize any product candidate. Insurance coverage is increasingly expensive. We may not be able to obtain or maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

Our product candidates may be regulated as controlled substances, the making, use, sale, importation, exportation, and distribution of which are subject to significant regulation by the U.S. Drug Enforcement Administration (DEA) and other regulatory agencies.

Our product candidates may be classified as controlled substances, which are subject to state, federal, and foreign laws and regulations regarding their manufacture, use, sale, importation, exportation, and distribution. Among other things, controlled substances are regulated under the federal Controlled Substances Act of 1970 and regulations of the DEA.

The DEA regulates controlled substances as Schedule I, II, III, IV or V substances. Schedule I substances by definition have no established medicinal use and may not be marketed or sold in the United States. A pharmaceutical product may be listed as Schedule II, III, IV or V, with Schedule II substances considered to present the highest risk of abuse and Schedule V substances the lowest relative risk of abuse among such substances. Prior to commercialization, centrally acting drugs are generally subject to review and potential scheduling by the DEA. It is possible that bexicaserin or our other product candidates may be regulated by the DEA as a Schedule IV controlled substance, which would subject such product candidates to additional restrictions regarding their manufacture, shipment, storage, sale and use, depending on the scheduling of the active ingredients, and may limit the commercial potential of any of our product candidates, if approved. For example, BELVIQ is a Schedule IV controlled substance, and FINTEPLA was previously a Schedule IV controlled substance.

Various states also independently regulate controlled substances. Though state-controlled substances laws often mirror federal law, because the states are separate jurisdictions, they may separately schedule drugs as well. While some states automatically schedule a drug when the DEA does so, in other states there must be rulemaking or a legislative action. State scheduling may delay commercial sale of any controlled substance drug product for which we obtain federal regulatory approval and adverse scheduling could impair the commercial attractiveness of such product. We or our collaborators must also obtain separate state registrations in order to be able to obtain, handle and distribute controlled substances for clinical trials or commercial sale, and failure to meet applicable regulatory requirements could lead to enforcement and sanctions from the states in addition to those from the DEA or otherwise arising under federal law.

For any of our product candidates classified as controlled substances, we and our suppliers, manufacturers, contractors, customers and distributors are required to obtain and maintain applicable registrations from state, federal and foreign law enforcement and regulatory agencies and comply with state, federal and foreign laws and regulations regarding the manufacture, use, sale, importation, exportation and distribution of controlled substances. There is a risk that DEA regulations may limit the supply of the compounds used in clinical trials for our product candidates, and, in the future, the ability to produce and distribute our products in the volume needed to meet commercial demand. Regulations associated with controlled substances govern manufacturing, labeling, packaging, testing, dispensing, production and procurement quotas, recordkeeping, reporting, handling, shipment and disposal. These regulations increase the personnel needs and the expense associated with development and commercialization of product candidates including controlled substances. The DEA, and some states, conduct periodic inspections of registered establishments that handle controlled substances. Failure to obtain and maintain required registrations or comply with any applicable regulations could delay or preclude us from developing and commercializing our product candidates containing controlled substances and subject us to enforcement action. The DEA may seek civil penalties, refuse to renew necessary registrations or initiate proceedings to revoke those registrations. In some circumstances, violations could lead to criminal proceedings. Because of their restrictive nature, these regulations could limit commercialization of any of our product candidates that are classified as controlled substances.

Our ability to use net operating loss carryforwards and other tax attributes may be limited.

We have incurred substantial losses during our history, do not expect to become profitable in the near future and may never achieve profitability. To the extent that we continue to generate taxable losses, unused losses will, subject to limitations, carry forward to offset future taxable income, if any, until such unused losses expire (if at all). As of December 31, 2023, we had federal and California net operating loss (NOL) carryforwards of \$58.7 million and \$1.6 million, respectively.

Our federal NOL carryforwards may be carried forward indefinitely, but the deductibility of these federal NOL carryforwards is limited to 80% of current year taxable income. Our California NOL carryforwards will begin to expire in 2040. Our NOL carryforwards are also subject to review and possible adjustment by the United States Internal Revenue Service and state tax authorities.

As of December 31, 2023, we also had federal and California research and development tax credit carryforwards, net of reserves, of \$3.5 million and \$1.2 million, respectively. Federal credit carryforwards will begin to expire after 2040 unless previously utilized. The California research and development credit carries forward indefinitely.

Under Section 382 of the Internal Revenue Code of 1986, as amended (IRC), our federal NOL carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership of our company. An “ownership change” pursuant to Section 382 of the IRC generally occurs if one or more stockholders or groups of stockholders who own at least 5% of a company’s stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Similar rules may apply under state tax laws. We may have experienced such ownership changes in the past, and we may experience ownership changes in the future as a result of shifts in our stock ownership, some of which are outside our control. We have not conducted any studies to determine annual limitations, if any, that could result from such changes in the ownership of our stock. Our ability to utilize our NOL carryforwards and certain other tax attributes could be limited by an “ownership change” as described above and consequently, we may not be able to utilize a material portion of our NOL carryforwards and certain other tax attributes, which could have a material adverse effect on our cash flows and results of operations.

Risks Related to Regulatory Compliance

Our relationships with customers, healthcare providers, and third-party payors and/or the data we process may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, other healthcare laws and regulations and data privacy and security laws and regulations, contractual obligations and self-regulatory schemes. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

Healthcare providers, including physicians, and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our current and future arrangements with healthcare professionals, principal investigators, consultants, customers and third-party payors may subject us to various federal and state fraud and abuse laws and other healthcare laws, including, without limitation, the federal Anti-Kickback Statute, the federal civil and criminal false claims laws and the law commonly referred to as the Physician Payments Sunshine Act and regulations. These laws will impact, among other things, our clinical research, as well as our proposed sales, marketing and educational programs. In addition, we process personal data and other sensitive and confidential information, which subjects us to various obligations related to data privacy and security, including laws at both the federal and state level. The laws that will affect our operations include, but are not limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe or rebate), directly or indirectly, overtly or covertly, in cash or in kind, in return for the purchase, recommendation, leasing or furnishing of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs. This statute has been interpreted to apply to, among other things, arrangements between pharmaceutical manufacturers on the one hand, and prescribers, purchasers and formulary managers on the other. A person or entity does not need to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation;
- federal civil and criminal false claims laws, including, without limitation, the False Claims Act, and civil monetary penalty laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment or approval from Medicare, Medicaid or other government payors that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act;
- HIPAA, which created additional federal criminal statutes that prohibit, among other things, a person from knowingly and willfully executing a scheme or making false or fraudulent statements to defraud any healthcare benefit program, regardless of the payor (e.g., public or private). Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by the HITECH and their implementing regulations, which imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information without appropriate authorization by entities subject to the rule, such as health plans, healthcare clearinghouses and certain healthcare providers, known as covered entities, and their respective business associates, individuals or entities that perform certain services on behalf of a covered entity that involves the use or disclosure of individually identifiable health information and their subcontractors that use, disclose or otherwise process individually identifiable health information;
- The Physician Payments Sunshine Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children’s Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services (CMS), information related to: (i) payments or other “transfers of value” made to physicians (defined to include doctors, dentists, optometrists, podiatrists, and chiropractors), physician assistants, nurse practitioners, clinical nurse specialists, certified registered nurse

anesthetists, anesthesiologist assistants and certified nurse midwives, and teaching hospitals during the previous year; and (ii) ownership and investment interests held by physicians and their immediate family members;

- state and foreign law equivalents of each of the above federal laws, state laws that require manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures and/or information regarding drug pricing, 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 to adopt compliance programs as prescribed by state laws and regulations, or that otherwise restrict payments that may be made to healthcare providers, state laws and regulations that require drug manufacturers to file reports relating to drug pricing and marketing information, and state and local laws that require the registration of pharmaceutical sales representatives; and
- federal, state and foreign laws that govern the privacy and security of personal data, including health-related 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. By way of example, California enacted the CCPA, which gives California residents expanded rights to access and delete their personal information, opt out of certain personal data sharing, and receive detailed information about how their personal data is used, among other rights. The CCPA provides for civil penalties for violations, including administrative fines of up to \$7,500 per violation, as well as a private right of action for data breaches that is expected to increase data breach litigation. Other states, such as Virginia and Colorado, have also passed comprehensive privacy laws that provide individuals with certain rights with respect to their personal data, and similar laws are being considered in several other states, as well as at the federal and local levels. While the CCPA and other state comprehensive privacy laws exempt data subject to HIPAA and some data processed in the context of clinical trials, they apply to other data we maintain and may increase our compliance costs and potential liability. Additionally, we are, or may become, subject to various U.S. federal and state consumer protection laws which require us to publish statements that accurately and fairly describe how we handle personal data and choices individuals may have about the way we handle their personal data. Outside the United States, an increasing number of laws, regulations, and industry standards govern data privacy and security. For example, the GDPR imposes obligations and restrictions on the collection and use of personal data relating to individuals in the European Economic Area (EEA) (including health data). The GDPR increases obligations with respect to clinical trials conducted in the EEA, including through its expansive the definition of personal data and because it requires changes to informed consent practices and more detailed notices for clinical trial participants and investigators.

Importantly, the GDPR materially expands the definition of what constitutes "personal data" including by clarifying that the GDPR applies to pseudonymized (i.e. key-coded) data, which is often processed by sponsors in the context of clinical trials. EU and EEA Member States are also able to legislate separately on health and genetic data, and we must comply with these local laws where we operate. Also, notwithstanding the UK's withdrawal from the EU, the data protection obligations of the GDPR continue to apply to UK-related processing of personal data under the so-called "UK GDPR". These GDPR regulations have "extra-territorial" reach—for example they apply (inter-alia) to any processing of personal data that concerns the offering of goods or services to individuals in the EEA or UK (as applicable) and/or the monitoring of their behavior, regardless of the existence of an establishment in the EEA or UK (as applicable). These GDPR regulations also apply to any clinical trials and other operations taking place in the EEA and UK. The GDPR provides for robust regulatory enforcement and substantial fines. While the GDPR affords some flexibility in determining how to comply with the various requirements, significant effort and expense has been, and will continue to be, invested to ensure continuing compliance. In Switzerland, the Federal Act on Data Protection (DPA), also applies to the collection and processing of personal data, including health-related information, by companies located in Switzerland, or in certain circumstances, by companies located outside of Switzerland. The applicability of the DPA will also result in an increase of costs of compliance, risks of noncompliance and penalties for noncompliance.

Additionally, our employees and personnel may use generative artificial intelligence (AI) technologies to perform their work, and the disclosure and use of personal data in such technologies is subject to various privacy laws and other privacy obligations. Additionally, we may use AI to assist us in making certain decisions, which use is regulated by certain privacy laws. Governments have passed and are likely to pass additional laws regulating generative AI. Our use of this technology could result in additional compliance costs, regulatory investigations and actions, and lawsuits. For example, due to inaccuracies or flaws in the inputs, outputs, or logic of the AI, the model could be biased and could lead us to make decisions that could adversely affect us. If we are unable to use generative AI, it could make our business less efficient and result in competitive disadvantages.

These data privacy and security laws impose strict obligations on the ability to process personal data, including health-related information, in particular in relation to their collection, use, disclosure and transfer. This includes several requirements relating to (i) obtaining, in some situations, the consent of the individuals to whom the personal data relates, (ii) the information provided to the individuals about how their personal data is used, (iii) ensuring the security and confidentiality of the personal data, (iv) the obligation to notify regulatory authorities and affected individuals of personal data breaches, (v) extensive internal privacy governance

obligations, and (vi) obligations to honor rights of individuals in relation to their personal data (for example, the right to access, correct and delete their personal data).

In addition, we may be unable to transfer personal data from Europe and other jurisdictions to the United States or other countries due to data localization requirements or limitations on cross-border data flows. For example, the GDPR regulations significantly restrict the transfer of personal data from the EEA and the UK to the United States, and other countries in respect of which the European Commission or other relevant regulatory body has not issued a so-called “adequacy decision” (known as “third countries”). Switzerland has adopted similar restrictions under the DPA. Although there are various mechanisms that may be used in some cases to lawfully transfer personal data to the U.S. or other countries, these mechanisms are subject to legal challenges and may not be available to us. Additionally, the implementation of these mechanisms, including through agreements with all relevant CROs, sub-processors and other third parties, is complex and time-consuming. As such, transfers of personal data from the EEA, UK and/or Switzerland to the United States and other third countries may not fully comply with the cross-border data transfer restrictions set out in the applicable data privacy and security regulations. Additionally, other countries outside of Europe have enacted or are considering enacting similar cross-border data transfer restrictions and laws requiring local data residency, which could increase the cost and complexity of operating our business.

Compliance with U.S. and international data protection laws and regulations could require us to take on more onerous obligations in our contracts, restrict our ability to collect, use and disclose data, or in some cases, impact our ability to operate in certain jurisdictions. Furthermore, we are, or may become, subject to self-regulatory standards, contractual obligations and policies related to privacy and security. Actual or perceived failure to comply with these laws and regulations could result in government enforcement actions (which could include civil, criminal and administrative penalties), private litigation, and/or adverse publicity and could negatively affect our operating results and business. Moreover, clinical trial participants, employees and other individuals about whom we or our potential collaborators obtain personal data, as well as the providers who share this information with us, may limit our ability to collect, use and disclose the information. Claims that we have violated individuals’ privacy rights, failed to comply with data protection laws, 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.

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

It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in government funded healthcare programs, such as Medicare and Medicaid, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws and the curtailment or restructuring of our operations.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management’s attention from the operation of our business. The shifting compliance environment and the need to build and maintain robust and expandable systems to comply with multiple jurisdictions with different compliance and/or reporting requirements increases the possibility that a healthcare company may run afoul of one or more of the requirements. The laws and regulations discussed in these risk factors are intended to be examples, and updates to these laws and regulations, as well as other laws and regulations, could have a material effect on our operations and prospects.

Coverage and adequate reimbursement may not be available for our current or any future product candidates, which could make it difficult for us to sell profitably, if approved.

Market acceptance and sales of any product candidates that we commercialize, if approved, will depend in part on the extent to which coverage and adequate reimbursement for these drugs and related treatments will be available from third-party payors, including government health administration authorities, managed care organizations and other private health insurers. Third-party payors decide which therapies they will pay for and establish reimbursement levels. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own coverage and reimbursement policies. However, decisions regarding the extent of coverage and amount of reimbursement to be provided for any product candidates that we develop will be made on a payor-by-payor basis. One third-party payor’s determination to provide coverage for a drug does not assure that other payors will also provide coverage, and adequate reimbursement, for the drug. Additionally, a third-party payor’s decision to provide coverage for a therapy does not imply that an adequate reimbursement rate will be approved. Each third-party payor determines whether or not it will provide coverage for a therapy, what amount it will pay the manufacturer for the therapy, and on what tier of its formulary it will be

placed. The position on a third-party payor's list of covered drugs, or formulary, generally determines the co-payment that a patient will need to make to obtain the therapy and can strongly influence the adoption of such therapy by patients and physicians. Patients who are prescribed treatments for their conditions and providers prescribing such services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use our drugs unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our drugs.

A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Third-party payors are developing increasingly sophisticated methods of controlling healthcare costs by limiting coverage and the amount of reimbursement for particular medications, requiring drug companies to provide them with varying levels of discounts from list prices and/or challenging the value of list prices charged for medical products. Similarly, the containment of healthcare costs has become a priority for federal and state governments. Coverage and reimbursement may not be available for any drug that we commercialize and, if reimbursement is available, the level of reimbursement is uncertain. Inadequate coverage and reimbursement may impact the demand for, or the price of, any drug for which we obtain marketing approval. If coverage and adequate reimbursement are not available, or are available only to limited levels, we may not be able to successfully commercialize our current and any future product candidates that we develop. Further, coverage policies and third-party payor reimbursement rates may change at any time. Therefore, even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Healthcare legislative and regulatory reform measures may have a negative impact on our business and results of operations.

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

Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

Reform measures that result in decreased physician reimbursement may adversely affect our business. Further, any reduction in reimbursement from Medicare or other governmental programs may result in a similar reduction in payments from private payors.

Also, there has been heightened governmental scrutiny recently over the manner in which drug manufacturers set prices for their marketed products, which have resulted in several U.S. presidential executive orders, Congressional inquiries, proposed and enacted federal and state legislation, and other regulatory actions designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, reform government program reimbursement methodologies for drug products, and otherwise reduce drug prices. For example, the Inflation Reduction Act of 2022 (IRA), among other things, (1) extends enhanced subsidies for individuals purchasing health insurance coverage through plan year 2025 in the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, marketplaces, (2) eliminates the "donut hole" under the Medicare Part D program beginning in 2025 by significantly lowering the beneficiary maximum out-of-pocket cost and through a newly established manufacturer discount program, (3) directs HHS to negotiate the price of certain single-source drugs and biologics covered under Medicare and (4) imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation. The IRA and related federal actions are likely to have a significant impact on the pharmaceutical industry. At the state level, legislatures have 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.

We cannot predict what healthcare reform initiatives may be adopted in the future. We expect that these and other healthcare reform measures that may be adopted in the future may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved drug. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our drugs.

If any of our current or future product candidates are approved for marketing, and we are found to have improperly promoted off-label uses, or if physicians prescribe or use any of our current or future product candidates off-label, we may become subject to prohibitions on the sale or marketing of any of our current or future product candidates, significant fines, penalties, sanctions, or product liability claims, and our image and reputation within the industry and marketplace could be harmed.

The FDA, Department of Justice (DOJ), and comparable foreign authorities strictly regulate the marketing and promotional claims that are made about pharmaceutical products, including our product candidates bexicaserin and LP659. In particular, a product may not be promoted for uses or indications that are not approved by the FDA or comparable foreign authorities as reflected in the product's approved labeling. Although physicians may prescribe products for off-label uses as the FDA and other regulatory agencies do not regulate a physician's choice of drug treatment made in the physician's independent medical judgment, they do restrict promotional communications from companies or their sales force with respect to off-label uses of products for which marketing clearance has not been issued. If we are found to have promoted such off-label uses, we may receive warning letters from the FDA and comparable foreign authorities and become subject to significant liability, which would materially harm our business. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. If we become the target of such an investigation or prosecution based on our marketing and promotional practices, we could face similar sanctions, which would materially harm our business. In addition, management's attention could be diverted from our business operations, significant legal expenses could be incurred, and our reputation could be damaged. The FDA and other governmental authorities have also required that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed in order to resolve enforcement actions. If we are deemed by the FDA, DOJ, or other governmental authorities to have engaged in the promotion of any current or future product candidates for off-label use, we could be subject to certain prohibitions or other restrictions on the sale or marketing of our products and operations, or significant fines and penalties, and the imposition of these sanctions could also affect our reputation and position within the industry.

We may not be able to obtain or maintain orphan drug designations or exclusivity for our product candidates, which could limit the potential profitability of our product candidates.

Regulatory authorities in some jurisdictions, including the United States, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act of 1983, the FDA may designate a drug as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals in the United States. In the United States, orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and application fee waivers. After the FDA grants orphan drug designation, the generic identity of the drug and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation, however, neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process. Generally, if a drug with an orphan drug designation subsequently receives the first marketing approval for an indication for which it receives the designation, then the drug is entitled to a period of marketing exclusivity that precludes the applicable regulatory authority from approving another marketing application for the same drug for the same indication for the exclusivity period except in limited situations. For purposes of small molecule drugs, the FDA defines "same drug" as a drug that contains the same active moiety and is intended for the same use as the drug in question. A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation.

We may pursue orphan drug designation for one or more of our product candidates, as well as for potential other future product candidates, and obtaining orphan drug designations may be important to our business strategy; however, obtaining an orphan drug designation can be difficult and we may not be successful in doing so. Even if we were to obtain orphan drug designation for a product candidate, we may not obtain orphan exclusivity and that exclusivity may not effectively protect the drug from the competition of different drugs for the same condition, which could be approved during the exclusivity period. Additionally, after an orphan drug is approved, the FDA could subsequently approve another application for the same drug for the same indication if the FDA concludes that the later drug is shown to be safer, more effective or makes a major contribution to patient care. Orphan drug exclusive marketing rights in the United States also may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition. We will face similar risks if we pursue other designations with the FDA or comparable foreign authorities. The failure to obtain an orphan drug or other designation for any product candidates we may develop, the inability to maintain that designation for the duration of the applicable period, or the inability to obtain or maintain orphan drug or other exclusivity could reduce our ability to make sufficient sales of the applicable product candidate to balance our expenses incurred to develop it, which would have a negative impact on our operational results and financial condition.

Disruptions at the FDA and other government agencies caused by funding shortages or global health concerns could hinder their ability to hire, retain or deploy key leadership and other personnel, or otherwise prevent new or modified products from being developed, approved or commercialized in a timely manner or at all, 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 FDA 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, during the last several years 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.

By way of another example, in response to the COVID-19 pandemic, the FDA initially postponed most inspections of manufacturing facilities and products, and subsequently restarted routine pre-announced surveillance inspections of domestic manufacturing facilities subject to a risk-based prioritization system to identify the categories of regulatory activity that can occur within a given geographic area, ranging from mission critical inspections to resumption of all regulatory activities. If a prolonged government shutdown occurs, or if global health concerns prevent the FDA or other regulatory authorities from conducting their regular inspections, reviews, or other regulatory activities, it could significantly impact the ability of the FDA or other regulatory authorities to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

Risks Related to Our Intellectual Property

We depend on intellectual property licensed from third parties, including Arena, and the failure by us or our licensors to protect the licensed intellectual property or the termination of our license could result in the loss of significant rights, which would harm our business.

We are dependent on technology, patents, know-how, and proprietary materials, both our own and licensed from Arena, which was acquired by Pfizer in March 2022. We entered into the Arena License Agreement pursuant to which we acquired an exclusive, royalty bearing, sublicensable, worldwide license to develop and commercialize bexicaserin for any use in humans, LP659 for the treatment of certain CNS and peripheral nervous system indications, and certain other compounds for CNS indications. Any termination of this license will result in the loss of significant rights and will restrict our ability to develop and commercialize our product candidates. If we or Arena fails to adequately protect this intellectual property, or if we seek to expand the field of our license to include additional indications we determine are advantageous or necessary for us to develop a licensed compound and Arena does not consent, our ability to commercialize these compounds could suffer.

Agreements under which we license intellectual property or technology to or from third parties may be complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates. Our business also would suffer if any current or future licensors fail to abide by the terms of the license, if we or the licensors fail to enforce licensed patents against infringing third parties, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms. Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing or otherwise violating the licensor's rights.

Furthermore, while we cannot currently determine the amount of the royalty obligations we would be required to pay on sales of future products, if any, the amounts may be significant. The amount of our future royalty obligations will depend on the technology and intellectual property we use in products that we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability.

In addition, the growth of our business will likely depend in part on our ability to acquire or in-license additional proprietary rights, including to advance our research or allow commercialization of our product candidates. In that event, we may be required to

expend considerable time and resources to develop or license replacement technology. For example, our programs may involve additional technologies or product candidates that may require the use of additional proprietary rights held by third parties. Furthermore, other pharmaceutical companies and academic institutions may also have filed or are planning to file patent applications potentially relevant to our business. Our product candidates may also require specific formulations or other technology to work effectively and efficiently. These formulations or technology may be covered by intellectual property rights held by others. From time to time, in order to avoid infringing these third-party patents, we may be required to license technology from additional third parties to further develop or commercialize our product candidates. We may be unable to acquire or in-license any relevant third-party intellectual property rights, including any such intellectual property rights required to manufacture, use or sell our product candidates, that we identify as necessary or important to our business operations. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all, and as a result we may be unable to develop or commercialize the affected product candidates, and we may have to abandon development of the relevant research programs or product candidates, which would harm our business. We may need to cease use of the compositions or methods covered by such third-party intellectual property rights, and may need to seek to develop alternative approaches that do not infringe on such intellectual property rights which may entail additional costs and development delays, even if we were able to develop such alternatives, which may not be feasible. Even if we are able to obtain a license under such intellectual property rights, any such license may be non-exclusive, which may allow our competitors' access to the same technologies licensed to us.

The licensing and acquisition of third-party intellectual property rights is a competitive practice, and companies that may be more established, or have greater resources than we do, may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider necessary or attractive in order to commercialize our product candidates. More established companies may have a competitive advantage over us due to their larger size and cash resources or greater clinical development and commercialization capabilities. There can be no assurance that we will be able to successfully complete such negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates that we may seek to acquire.

Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and is complicated by the rapid pace of scientific discovery in our industry. Disputes may also arise between us and our licensors regarding intellectual property subject to a license agreement, including relating to:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the license agreement;
- our right to sublicense patent and other rights to third parties under manufacturing, collaborative development or commercial relationships;
- whether we are complying with our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations;
- the priority of invention of patented technology;
- the amount and timing of payments owed under license agreements; and
- the allocation of ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and by us and our partners.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates. We are generally also subject to all of the same risks with respect to protection of intellectual property that we license as we are for intellectual property that we own, which are described below. If we or our licensors fail to adequately protect this intellectual property, our ability to commercialize our products could suffer.

Furthermore, our existing license agreements impose, and we expect that future license agreements will impose, various diligence, milestone payment, royalty and other obligations on us. If we are unable to, or otherwise fail to, comply with our obligations under these agreements, including due to our use of the intellectual property licensed to us in an unauthorized manner, or we are subject to a bankruptcy, we may be required to pay damages and the licensor may have the right to terminate the license.

We depend, in part, on our licensors to file, prosecute, maintain, defend, or enforce patents and patent applications that are material to our business.

Patents relating to our product candidates may be controlled by our licensor. Licensors may have rights to file, prosecute, maintain, and defend the patents we have licensed from such licensor. Our ability to settle legal claims may require consent of

licensors. If our licensor or any future licensees having rights to file, prosecute, maintain, and defend our patent rights fail to conduct these activities for patents or patent applications covering any of our product candidates, our ability to develop and commercialize those product candidates may be adversely affected and we may not be able to prevent competitors from making, using, or selling competing products. We cannot be certain that such activities by our licensor have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents or other intellectual property rights. If our licensor has the right to control enforcement of our licensed patents or defense of any claims asserting the invalidity of these patents and, even if we are permitted to pursue such enforcement or defense, we cannot ensure the cooperation of our licensor. We cannot be certain that our licensor will allocate sufficient resources or prioritize its or our enforcement of such patents or defense of such claims to protect our interests in the licensed patents. Even if we are not a party to these legal actions, an adverse outcome could harm our business because it might prevent us from continuing to license intellectual property that we may need to operate our business. In addition, even when we have the right to control patent prosecution of licensed patents and patent applications, enforcement of licensed patents, or defense of claims asserting the invalidity of those patents, we may still be adversely affected or prejudiced by actions or inactions of our licensor and its counsel that took place prior to or after our assuming control. In the event we breach any of our obligations related to such prosecution, we may incur significant liability to our licensing partners.

For most licensed products under the Arena License Agreement, including bexicaserin and LP659, we have the first right to control the prosecution and enforcement of the licensed patent applications and patents. However, we have an obligation to reasonably cooperate with Arena, which is now a wholly owned subsidiary of Pfizer, and will to some extent depend on Arena's cooperation with us to prosecute and enforce such intellectual property. A disagreement between us and Arena with respect to the prosecution or enforcement of the patent applications or patents, or unsuccessful actions to prosecute or enforce the patent applications or patents, could adversely affect our intellectual property rights.

We may enter into, or seek to enter into, collaboration agreements and strategic alliances, and we may not realize the anticipated benefits of such collaborations or alliances. Any such collaborations relating to our product candidates could also cause us to alter or delay our development and commercialization plans.

We intend to broaden the global reach of our platform by potentially selectively collaborating with leading biopharmaceutical companies. We intend to retain significant economic and commercial rights to our programs in key geographic areas that are core to our long-term strategy. As a result, we intend to periodically explore a variety of possible additional strategic collaborations in an effort to gain access to additional product candidates or resources. At the current time, we cannot predict what form such a strategic collaboration might take. We are likely to face significant competition in seeking appropriate strategic collaborators, and strategic collaborations can be complicated and time consuming to negotiate and document. We may not be able to negotiate strategic collaborations on acceptable terms, or at all. We are unable to predict when, if ever, we will enter into any additional strategic collaborations because of the numerous risks and uncertainties associated with establishing them.

Research and development collaborations are subject to numerous risks, which may include the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to a collaboration, and may not commit sufficient efforts and resources, or may misapply those efforts and resources;
- collaborators may conduct their own clinical trials which may not be compliant, may not be successful or may generate contradictory results;
- collaborators may not pursue development and commercialization of collaboration product candidates or may elect not to continue or renew development or commercialization programs based on trial or test results, changes in their strategic focus due to the acquisition of competitive products, availability of funding or other external factors, such as a business combination that diverts resources or creates competing priorities;
- collaborators may delay, provide insufficient resources to, or modify or stop clinical trials for collaboration product candidates;
- collaborators could independently develop, or develop with third parties, or acquire products outside of the collaboration that compete directly or indirectly with our products or product candidates;
- a collaborator with marketing, manufacturing and distribution rights to one or more products may not commit sufficient resources to or otherwise not perform satisfactorily in carrying out these activities;
- we could grant exclusive rights to our collaborators that would prevent us from collaborating with others;
- a collaborator or series of collaborators may improperly or unknowingly sell product directly (or indirectly to a potential customer) into the "gray market" whereby our branded products are diverted from authorized sales channels into the hands of dealers, brokers or the open market, and may result in unauthorized sale of our product in a specific country or region;

- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that cause the delay or termination of the research, development or commercialization of our product candidates, or that result in costly litigation or arbitration that diverts management attention and resources;
- collaborations may be terminated and, if terminated, may result in a need for additional capital and personnel to pursue further development or commercialization of the applicable product candidates;
- a collaborator's sales and marketing activities or other operations may not be in compliance with applicable laws resulting in civil or criminal proceedings; and
- collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we may not have the exclusive right to commercialize such intellectual property.

The development and potential commercialization of our product candidates will require substantial additional capital to fund expenses. We may form or seek further strategic alliances, create joint ventures or collaborations, or enter into additional licensing arrangements with third parties that we believe will complement or augment our development and commercialization efforts with respect to our product candidates and any future product candidates that we may develop, including in territories outside the United States or for certain indications. These transactions can entail numerous operational and financial risks, including exposure to unknown liabilities, disruption of our business and diversion of our management's time and attention in order to manage a collaboration or develop acquired products, product candidates or technologies, incurrence of substantial debt or dilutive issuances of equity securities to pay transaction consideration or costs, higher than expected collaboration, acquisition or integration costs, write-downs of assets or goodwill or impairment charges, increased amortization expenses, difficulty and cost in facilitating the collaboration or combining the operations and personnel of any acquired business, impairment of relationships with key suppliers, manufacturers or customers of any acquired business due to changes in management and ownership and the inability to retain key employees of any acquired business. As a result, if we enter into acquisition or in-license agreements or strategic partnerships, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture. We also cannot be certain that, following a strategic transaction or license, we will achieve the revenue or specific net income that justifies such transaction or such other benefits that led us to enter into the arrangement.

In addition, we face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. We may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for our product candidates because they may be deemed to be at too early of a stage of development for collaborative effort and third parties may not view our product candidates as having the requisite potential to demonstrate safety and efficacy. If and when we collaborate with a third-party for development and commercialization of a product candidate, we can expect to relinquish some or all of the control over the future success of that product candidate to the third party. Our ability to 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 our technologies, product candidates and market opportunities. 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. We may also be restricted under any license agreements from entering into agreements on certain terms or at all with potential collaborators.

As a result of these risks, we may not be able to realize the benefit of our existing collaborations or any future collaborations or licensing agreements we may enter into. In addition, there have been a significant number of recent business combinations among large pharmaceutical and biomedical companies that have resulted in a reduced number of potential future collaborators and changes to the strategies of the combined company. As a result, 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 one or more of our other development programs, delay the potential commercialization or reduce the scope of any planned sales or marketing activities for such product candidate, or increase our expenditures and undertake development, manufacturing or commercialization activities at our own expense. If we elect to increase our expenditures to fund development, manufacturing or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue.

Additionally, we may sometimes collaborate with academic institutions to accelerate our preclinical research or development under written agreements with these institutions. Typically, these institutions provide companies like us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Regardless of such option, we may be unable to

negotiate a license within the specified timeframe or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to other parties, potentially blocking our ability to pursue our program. If we are unable to successfully obtain rights to required third-party intellectual property or to maintain the existing intellectual property rights we have, we may have to abandon development of such program and our business and financial condition could suffer.

Our products will require specific constituents to work effectively and efficiently, and rights to those constituents are and, in the future, may be held by others. We may be unable to in-license any rights to constituents, methods of use, processes or other third-party intellectual property rights from third parties that we identify. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, which would harm our business. In that event, we may be required to expend significant time and resources to develop or license replacement technology. Any delays in entering into new collaborations or strategic partnership agreements related to our product candidates could delay the development and commercialization of our product candidates in certain geographies, which could harm our business prospects, financial condition, and results of operations.

We may be dependent on intellectual property licensed or sublicensed to us from, or for which development was funded or otherwise assisted by, government agencies or academic or other institutions, for development of our technology and product candidates. Failure to meet our own obligations to our licensors or upstream licensors, including such government agencies or academic or other institutions, may result in the loss of our rights to such intellectual property, which could harm our business.

Government agencies or academic or other institutions may provide funding, facilities, personnel or other assistance in connection with the development of the intellectual property rights owned by or licensed to us. Such government agencies may have retained rights in such intellectual property, including the right to grant or require us to grant mandatory licenses or sublicenses to such intellectual property to third parties under certain specified circumstances, including if it is necessary to meet health and safety needs that we are not reasonably satisfying or if it is necessary to meet requirements for public use specified by federal regulations, or to manufacture products in the United States. Any exercise of such rights, including with respect to any such required sublicense of these licenses could result in the loss of significant rights and could harm our ability to commercialize licensed products.

If we are unable to obtain and maintain patent protection for our current or any future product candidates, or if the scope of the patent protection obtained is not sufficiently broad, we may not be able to compete effectively in our markets.

We anticipate that we will file additional patent applications both in the United States and in other countries, as appropriate. However, we cannot predict:

- if and when any patents will issue;
- the degree and scope of protection any issued patents will afford us against competitors, including whether third parties will find ways to invalidate or otherwise circumvent our patents;
- whether others will apply for or obtain patents claiming aspects similar to those covered by our patents and patent applications;
- whether we will need to initiate litigation or administrative proceedings to defend our patent rights, which may be costly whether we win or lose; or
- whether the patent applications that we own, or in-license will result in issued patents with claims that cover our product candidates or uses thereof in the United States or in foreign countries.

We rely upon a combination of patents, trade secret protection and confidentiality agreements to protect the intellectual property related to our development programs and product candidates. Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our current and any future product candidates. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to our current and future development programs and product candidates. The patent prosecution process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner, including as a result of factors impacting our, our licensors' or governmental patent offices' operations.

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 or in-license may fail to result in issued patents with claims that cover our current or any future product candidates in the United States or in 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 current or any future product candidates, third parties may challenge their scope, validity, or enforceability, which may result in such patents being narrowed, invalidated, or held unenforceable. Any successful opposition to these patents or any other patents owned by or licensed to

us could deprive us of rights necessary for the successful commercialization of any product candidates or companion diagnostic that we may develop. Further, if we encounter delays in regulatory approvals, the period of time during which we could market a product candidate or companion diagnostic under patent protection could be reduced.

If the patent applications we hold or have in-licensed with respect to our development programs and product candidates fail to issue, if their breadth or strength of protection is threatened, or if they fail to provide meaningful exclusivity for our current or any future product candidates, it could dissuade companies from collaborating with us to develop product candidates, and threaten our ability to commercialize, future drugs. Any such outcome could have a negative effect on our business.

Composition of matter patents for pharmaceutical products often provide a strong form of intellectual property protection for those types of products, as such patents provide protection without regard to any method of use. We cannot be certain, however, that the claims in our pending patent applications covering the composition of matter of our product candidates will be considered patentable by the U.S. Patent and Trademark Office (USPTO), or by patent offices in foreign countries, or that the claims in any of our issued patents will be considered valid and enforceable by courts in the United States or foreign countries. Method of use patents protect the use of a product for the specified method. This type of patent does not prevent a competitor from making and marketing a product that is identical to our product for an indication that is outside the scope of the patented method. Moreover, even if competitors do not actively promote their product for our targeted indications, physicians may prescribe these products “off-label” for those uses that are covered by our method of use patents. Although off-label prescriptions may infringe or contribute to the infringement of method of use patents, the practice is common and such infringement is difficult to prevent or enforce against.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. Patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot know with certainty whether we were the first to file for patent protection. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Our pending and future patent applications may not result in patents being issued which protect our technology or drugs, in whole or in part, or which effectively prevent others from commercializing competitive technologies and drugs.

Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection. These changes could also increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. For example, the Leahy-Smith America Invents Act (Leahy-Smith Act) enacted several significant changes to U.S. patent law, including switching the United States from a “first-to-invent” system to a “first-to-file” system, allowing third party submission of prior art to the USPTO during patent prosecution and setting forth additional procedures to attack the validity of a patent by the USPTO-administered post-grant proceedings. Changes such as these 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 negative effect on our business.

Moreover, we may be subject to a third-party pre-issuance submission of prior art to the USPTO or become involved in opposition, derivation, reexamination, inter partes review, post-grant review or interference proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or drugs and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize drugs without infringing third-party patent rights. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our owned and licensed patents may be challenged in the courts or patent offices in the United States and abroad. An adverse determination in any such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and drugs, or limit the duration of the patent protection of our technology and drugs. Moreover, patents have a limited lifespan. In the United States, if all maintenance fees are paid timely, the natural expiration of a patent is generally 20 years from the earliest filing date of a non-provisional patent application. Various extensions may be available; however, the life of a patent, and the protection it affords, is limited. For instance, a patent term extension based on regulatory delay may be available in the United States. However, only a single patent can be extended for each marketing approval, and any patent can be extended only once, for a single product. Moreover, the scope of protection during the period of the patent term extension does not necessarily extend to all claims, but instead only to claims that read on the product as approved. Laws governing analogous patent term extensions in foreign jurisdictions vary widely, as do laws governing the ability to obtain multiple patents from a single patent family. Additionally, we may not receive an extension if we fail to exercise due diligence during the testing phase or regulatory review process, apply within applicable deadlines, fail to apply

prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. If we are unable to obtain patent term extension or restoration, or the term of any such extension is less than we request, the period during which we will have the right to exclusively market our product will be shortened and our competitors may obtain approval of competing products following our patent expiration and may take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data to launch their product earlier than might otherwise be the case, and our revenue could be reduced, possibly materially. In addition, although upon issuance in the United States a patent's life can be increased based on certain delays caused by the USPTO, this increase can be reduced or eliminated based on certain delays caused by the patent applicant during patent prosecution. Without patent protection for our current or future product candidates, including once the patent life has expired even if patents covering our product candidates are obtained, we may be open to competition from generic versions of such drugs. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be open to competition from generic medications. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing drugs similar or identical to ours.

Even if we have or obtain patents covering our products or methods, we may still be barred from making, using and selling such products or methods because of the patent rights of others. Others may have filed, and in the future may file, patent applications covering compositions, products or methods that are similar or identical to ours, which could materially affect our ability to successfully develop our technology or to successfully commercialize any approved products alone or with collaborators.

Patent applications in the United States and elsewhere are generally published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Therefore, patent applications covering our methods and products could have been filed by others without our knowledge. Additionally, pending claims in patent applications which have been published can, subject to certain limitations, be later amended in a manner that could cover our platform technologies or related products. These patent applications may have priority over patent applications filed by us.

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

Periodic maintenance fees, renewal fees, annuity fees and various other government fees on patents and/or applications will be due to be paid to the USPTO and various government patent agencies outside of the United States over the lifetime of our owned and licensed patents and/or applications and any patent rights we may own or license in the future. We rely on our outside counsel, patent annuity service providers, or licensing partners to pay these fees due to non-U.S. patent agencies. The USPTO and various non-U.S. government patent agencies require compliance with several procedural, documentary, and other similar provisions during the patent application process. We employ and expect to continue to employ one or more reputable law firms and other professionals to help us comply and we are also dependent on our licensors to take the necessary action to comply with these requirements with respect to our licensed intellectual property. 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. There are situations, however, 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, potential competitors might be able to enter the market and this circumstance could harm our business.

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

Given the amount of time required for the development, testing and regulatory review of new product candidates such as bexicaserin, patents protecting such candidates might expire before or shortly after such candidates are commercialized. We expect to seek extensions of patent terms in the United States and, if available, in other countries where we are prosecuting patents. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the normal expiration of the patent, which is limited to the approved indication (or any additional indications approved during the period of extension). However, the applicable authorities, including the FDA and the USPTO in the United States, and any equivalent regulatory authority in other countries, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to our patents, or may grant more limited extensions than we request. If this occurs, our competitors may be able to take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data and launch their drug earlier than might otherwise be the case.

Our intellectual property rights do not necessarily protect against all potential threats to our business.

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. These risks and uncertainties include the following:

- others may be able to make compounds or formulations that are similar to our product candidates but that are not covered by the claims of any patents, should they issue, that we own or control;
- we or any strategic partners might not have been the first to make the inventions covered by the issued patents or pending patent applications that we own or control;
- we might not have been the first to file patent applications covering certain of the product candidates or inventions we own or control;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- pending patent applications that we own or control may not lead to issued patents;
- issued patents that we own or control may be held invalid or unenforceable as a result of legal challenges;
- our competitors might conduct research and development activities in the United States and other countries that provide a safe harbor from patent infringement claims for certain research and development activities, as well as in countries where we do not have patent rights and then use the information learned from such activities to develop competitive drugs for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable; and
- the patents of others may have an adverse effect on our business.

Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a negative impact on the success of our business.

Our commercial success depends, in part, upon our ability and the ability of our current or future collaborators to develop, manufacture, market and sell our current and any future product candidates and use our proprietary technologies without infringing the proprietary rights and intellectual property of third parties. The biotechnology and pharmaceutical industries are characterized by extensive and complex litigation regarding patents and other intellectual property rights. Our product candidates and other proprietary technologies we may develop may infringe existing or future patents owned by third parties. We may in the future become party to, or be threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our current and any future product candidates and technology, including interference proceedings, post grant review and inter partes review before the USPTO. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future, regardless of their merit. There is a risk that third parties may choose to engage in litigation with us to enforce or to otherwise assert their patent rights against us. Even if we believe such claims are without merit, a court of competent jurisdiction could hold that these third-party patents are valid, enforceable and infringed, which could have a negative impact on our ability to commercialize our current and any future product candidates. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim, there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent. If we are found to infringe a third party's valid and enforceable intellectual property rights, we could be required to obtain a license from such third party to continue developing, manufacturing and marketing our product candidate(s) and technology. However, 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 and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. We could be forced, including by court order, to cease developing, manufacturing and commercializing the infringing technology or product candidate. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent or other intellectual property right. A finding of infringement could prevent us from manufacturing and commercializing our current or any future product candidates or force us to cease some or all of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business, financial condition, results of operations and prospects.

Third parties asserting their patent or other intellectual property rights against us may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates or force us to cease some of our business operations. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of management and other employee resources from our business, cause development delays, and

may impact our reputation. 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, obtain one or more licenses from third parties, pay royalties, or redesign our infringing products, which may be impossible on a cost-effective basis or require substantial time and monetary expenditure. In that event, we would be unable to further develop and commercialize our product candidates, which could harm our business significantly. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

We are aware of third-party patents and/or patent applications that could adversely affect the potential commercialization of our compounds. For example, we are aware of third-party patents, as well as a third-party patent application, with broad claims to administering an 5-HT_{1A} receptor modulator by starting with a lower dose and then increasing to a higher, standard daily dose. Further, we are aware of third-party patent applications with broad claims to administering a 5-HT_{1A} receptor agonist for epileptic disorders. While we do not believe that any such claims that would cover the potential commercialization of bexicaserin or LP659 would be valid and enforceable, we may be incorrect in this belief.

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

Competitors may infringe or otherwise violate our patents, the patents of our licensors or our other intellectual property rights. To counter infringement or unauthorized use, we may be required to file legal claims, which can be expensive, time-consuming, and unpredictable. In addition, in an infringement proceeding, a court may decide that a patent of ours or our licensors is not valid or is unenforceable, or may 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 or interpreted narrowly and could put our related patent applications at risk of not issuing. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace. The initiation of a claim against a third party may also cause the third party to bring counter claims against us such as claims asserting that our patents are invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, non-enablement or lack of statutory subject matter. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant material information from the USPTO, or made a materially misleading statement, during prosecution. Third parties may also raise similar validity claims before the USPTO in post-grant proceedings such as ex parte reexaminations, inter partes review, or post-grant review, or oppositions or similar proceedings outside the United States, in parallel with litigation or even outside the context of litigation. The outcome following legal assertions of invalidity and unenforceability is unpredictable. We cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. For the patents and patent applications that we have licensed, we may have limited or no right to participate in the defense of any licensed patents against challenge by a third party. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of any future patent protection on our current or future product candidates. Such a loss of patent protection could harm our business.

Interference or derivation proceedings provoked by third parties or brought by the USPTO may be necessary to determine the priority of inventions with respect to, or the correct inventorship of, our patents or patent applications or those of our licensors. An unfavorable outcome could result in a loss of our current patent rights and could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Litigation, interference, derivation or other proceedings may result in a decision adverse to our interests and, even if we are successful, may result in substantial costs and distract our management and other employees.

There may be third-party patents of which we are currently unaware with claims to compositions, formulations, methods of manufacture, or methods of use or treatment that cover our product candidates. It is also possible that patents owned by third parties of which we are aware, but which we do not believe are relevant to our product candidates and other proprietary technologies we may develop, could be found to be infringed by our product candidate. Because patent applications can take many years to issue, there may be currently pending patent applications that may later result in issued patents that our product candidates may infringe. In addition, our competitors in both the United States and abroad, many of which have made substantial investments in patent portfolios and competing technologies, may obtain patents in the future that may prevent, limit or otherwise interfere with our ability to make, use and sell our product candidates, and may claim that use of our technologies or the manufacture, use, or sale of our product candidates infringes upon these patents. We may also receive, and expect to receive, communications from various industry participants alleging our infringement of their patents, trade secrets or other intellectual property rights and/or offering licenses to such intellectual property.

We may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States. Our business could be harmed if in litigation the prevailing party does not offer us a license on commercially reasonable terms. Any litigation or other proceedings to enforce our intellectual property rights may fail, and even if successful, may result in substantial costs and distract our management and other employees.

Because of the expense and uncertainty of litigation, we may conclude that even if a third-party is infringing our issued patents, or any patents that may be issued as a result of our pending or future patent applications or other intellectual property rights, the risk-adjusted cost of bringing and enforcing such a claim or action, which typically last for years before they are concluded, may be too high or not in the best interest of our company or our stockholders, or it may be otherwise impractical or undesirable to enforce our intellectual property against some third parties. Our competitors or other third parties may be able to sustain the costs of complex patent litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. In such cases, we may decide that the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings and that the more prudent course of action is to simply monitor the situation or initiate or seek some other non-litigious action or solution. In addition, the uncertainties associated with litigation could compromise our ability to raise the funds necessary to continue our clinical trials, continue our internal research programs, in-license needed technology or other product candidates, or enter into development partnerships that would help us bring our product candidates to market.

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 an adverse effect on the price of our common stock.

Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court or before the USPTO or comparable foreign authority.

If we or one of our licensing partners initiate legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim we infringe their patents or that the patent covering our product candidate is invalid or unenforceable, or both. In any patent infringement proceeding, there is a risk that a court will decide that a patent of ours is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent's claims narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patent claims do not cover the invention, or decide that the other party's use of our patented technology falls under the safe harbor to patent infringement under 35 U.S.C. §271(e)(1). With respect to the validity of our patents, for example, we cannot be certain that there is no invalidating prior art of which we, our patent counsel, 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 our product candidates and such an outcome may limit our ability to assert our patents against those parties or other competitors and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Such a loss of patent protection could have a material adverse impact on our business. 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.

Changes in U.S. patent law or the patent law of other countries or jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our current and any future product candidates.

The U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening 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 actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce patents that we have licensed or that we might obtain in the future. Similarly, changes in patent law and regulations in other countries or jurisdictions or changes in the governmental bodies that enforce them or changes in how the relevant governmental authority enforces patent laws or regulations may weaken our ability to obtain new patents or to enforce patents that we have licensed or that we may obtain in the future.

We may not be able to protect our intellectual property rights throughout the world, which could negatively impact our business.

Filing, prosecuting and defending patents covering our current and any future product candidates throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can have a different scope and strength than do those in the United States. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own drugs and, further, may export otherwise infringing drugs to territories where we may obtain patent protection, but where patent enforcement is not as strong as that in the United States. These drugs may compete with our drugs in jurisdictions where we do not have any issued or licensed patents and any future patent claims or other intellectual property rights may not be effective or sufficient to prevent them from so 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, particularly those relating to biopharmaceutical products, which could make it difficult in those jurisdictions for us to stop the infringement or misappropriation of our patents or other intellectual property rights, or the marketing of competing products in violation of our proprietary rights. Proceedings to enforce our patent and other intellectual property rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business. Furthermore, such proceedings could put our patents at risk of being invalidated, held unenforceable, or interpreted narrowly, could put our patent applications at risk of not issuing, and could provoke third parties to assert claims of infringement or misappropriation against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Similarly, if our trade secrets are disclosed in a foreign jurisdiction, competitors worldwide could have access to our proprietary information and we may be without satisfactory recourse. Such disclosure could have a material adverse effect on our business. Moreover, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in foreign intellectual property laws. In addition, certain developing countries, including China and India, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In those countries, we and our licensors may have limited remedies if patents are infringed or if we or our licensors are compelled to grant a license to a third party, which could materially diminish the value of those patents. In addition, many countries limit the enforceability of patents against government agencies or government contractors. This could limit our potential revenue opportunities. 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.

Reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

If we rely on third parties to manufacture or commercialize our current or any future product candidates, or if we collaborate with additional third parties for the development of our current or any future product candidates, we must, at times, share trade secrets with them. We may also conduct joint research and development programs that may require us to share trade secrets under the terms of our research and development partnerships or similar agreements. We seek to protect our proprietary technology in part by entering into confidentiality agreements and, if applicable, material transfer agreements, services agreements, consulting agreements or other similar agreements with our advisors, employees, third-party contractors and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information, including our trade secrets. Despite the contractual provisions employed when working with third parties, the need to share trade secrets and other confidential information increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how and trade secrets, a competitor's discovery of our trade secrets or other unauthorized use or disclosure could have an adverse effect on our business and results of operations.

In addition, these agreements typically restrict the ability of our advisors, employees, third-party contractors and consultants to publish data potentially relating to our trade secrets. Despite our efforts to protect our trade secrets, our competitors may discover our trade secrets, either through breach of our agreements with third parties, independent development or publication of information by any third-party collaborators. A competitor's discovery of our trade secrets could harm our business.

Confidentiality agreements with employees and third parties may not prevent unauthorized disclosure of trade secrets and other proprietary information.

In addition to the protection afforded by patents, we seek to rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce, and any other elements of our product candidates, technology and product discovery and development processes that involve proprietary know-how, information, or technology that is not covered by patents. Any disclosure, either intentional or unintentional, by our employees, the employees of third parties with whom we share our facilities or third-party consultants and vendors that we

engage to perform research, clinical trials or manufacturing activities, or misappropriation by third parties (such as through a cybersecurity breach) of our trade secrets or proprietary information could enable competitors to duplicate or surpass our technological achievements, thus eroding our competitive position in our market. Because we expect to rely on third parties in the development and manufacture of our product candidates, we must, at times, share trade secrets with them. Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Trade secrets and confidential information, however, may be difficult to protect. We seek to protect our trade secrets, know-how and confidential information, including our proprietary processes, in part, by entering into confidentiality agreements with our employees, consultants, outside scientific advisors, contractors, and collaborators. With our consultants, contractors, and outside scientific collaborators, these agreements typically include invention assignment obligations. We cannot guarantee that we have entered into such agreements with each party that may have or has had access to our trade secrets or proprietary technology and processes, or that any such agreements will be adequate. Although we seek to protect our trade secrets, our employees, consultants, outside scientific advisors, contractors, and collaborators might intentionally or inadvertently disclose our trade secret information to competitors or otherwise misappropriate our information, and in certain cases third parties who we may share confidential information have negotiated limits on their liability in their agreements with us. In addition, competitors may otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third-party, we would have no right to prevent them from using that technology or information to compete with us. Furthermore, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, or misappropriation of our intellectual property by third parties, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, operating results, and financial condition.

We may be subject to claims that our employees, consultants, or advisors have wrongfully used or disclosed trade secrets or other confidential information of their current or former employers or claims asserting inventorship or ownership of what we regard as our own intellectual property.

Many of our employees, consultants, and advisors are currently or were previously employed at universities or other healthcare, biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants, and advisors 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 these individuals have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's current or former employer. 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. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

We may be subject to claims that former employees, collaborators, or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor. The failure to name the proper inventors on a patent application can result in the patents issuing thereon being unenforceable. Inventorship disputes may arise from conflicting views regarding the contributions of different individuals named as inventors, the effects of foreign laws where foreign nationals are involved in the development of the subject matter of the patent, conflicting obligations of third parties involved in developing our product candidates or as a result of questions regarding co-ownership of potential joint inventions. For example, we may have inventorship disputes arise from conflicting obligations of consultants or others who are involved in developing our product candidates. Alternatively, or additionally, we may enter into agreements to clarify the scope of our rights in such intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on 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.

In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we

regard as our intellectual property. Such claims could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We may not identify relevant third-party patents or may incorrectly interpret the relevance, scope or expiration of a third-party patent, which might adversely affect our ability to develop and market our products.

We cannot guarantee that any of our patent searches or analyses, including the identification of relevant patents, the scope of patent claims or the expiration of relevant patents, are complete or thorough, nor can we be certain that we have identified each and every third-party patent and pending application in the United States and abroad that is relevant to or necessary for the commercialization of our product candidates in any jurisdiction. The scope of a patent claim is 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 products. We may incorrectly determine that our products are not covered by a third-party patent or may incorrectly predict whether a third-party's pending application will issue with claims of relevant scope. Our determination of the expiration date of any patent in the United States or abroad that we consider relevant may be incorrect, which may negatively impact our ability to develop and market our product candidates. Our failure to identify and correctly interpret relevant patents may negatively impact our ability to develop and market our products.

One aspect of the determination of patentability of our inventions depends on the scope and content of the "prior art," information that was or is deemed available to a person of skill in the relevant art prior to the priority date of the claimed invention. There may be prior art of which we are not aware that may affect the patentability of our patent claims or, if issued, affect the validity or enforceability of a patent claim. Further, we may not be aware of all third-party intellectual property rights potentially relating to our product candidates or their intended uses, and as a result the impact of such third-party intellectual property rights upon the patentability of our own patents and patent applications, as well as the impact of such third-party intellectual property upon our freedom to operate, is highly uncertain. Because patent applications in the United States and most other countries are confidential for typically a period of 18 months after filing, or may not be published at all, we cannot be certain that we were the first to file any patent application related to our product candidates. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Furthermore, for U.S. applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third party or instituted by the USPTO to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. For U.S. applications containing a claim not entitled to priority before March 16, 2013, there is a greater level of uncertainty in the patent law in view of the passage of the America Invents Act, which brought into effect significant changes to the U.S. patent laws, including new procedures for challenging pending patent applications and issued patents.

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

Our trademarks or trade names may be challenged, opposed, infringed, circumvented, invalidated, cancelled, declared generic, determined to be not entitled to registration, or determined to be infringing on other marks. During trademark registration proceedings, we may receive rejections of our applications by the USPTO or in foreign jurisdictions. 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. Any trademark litigation could be expensive. In addition, we could be found liable for significant monetary damages, including treble damages, disgorgement of profits and attorneys' fees, if we are found to have willfully infringed a trademark. We may not be able to protect our exclusive right to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential collaborators or customers in our markets of interest. 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. We may license our trademarks and trade names to third parties, such as distributors. Though these license agreements may provide guidelines for how our trademarks and trade names may be used, a breach of these agreements or misuse of our trademarks and tradenames by our licensees may jeopardize our rights in or diminish the goodwill associated with our trademarks and trade names.

Risks Related to Our Dependence on Third Parties or Their Actions

We intend to rely on third parties to conduct, supervise and monitor our preclinical studies and clinical trials, and if those third parties perform in an unsatisfactory manner, it may harm our business.

We do not currently have the ability to independently conduct preclinical studies or clinical trials required to develop our drug candidates. We intend to rely on CROs, clinical trial sites and other third parties to ensure the proper and timely conduct of our preclinical studies and clinical trials, and we expect to have limited influence over their actual performance. We intend to rely upon CROs and others to monitor, manage and report data for our clinical trials, which includes biostatistical analysis and programming, as well as the execution of future nonclinical studies. We expect to control only certain aspects of our CROs' and others' activities. Nevertheless, we will be responsible for ensuring that each of our preclinical studies or clinical trials are conducted in accordance with the applicable protocol, legal, regulatory and scientific standards and our reliance on the CROs and others does not relieve us of our regulatory responsibilities.

We, our CROs and other third parties we might engage will be required to comply with good laboratory practices (GLPs) and GCPs, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities in the form of International Conference on Harmonization guidelines for any of our product candidates that are in preclinical and clinical development. The regulatory authorities enforce GCPs through periodic inspections of trial sponsors, principal investigators and clinical trial sites. Although we will rely on CROs and others to conduct GCP-compliant clinical trials, we remain responsible for ensuring that each of our GLP preclinical studies and clinical trials is conducted in accordance with its investigational plan and protocol and applicable laws and regulations, and our reliance on the CROs and others does not relieve us of our regulatory responsibilities. If we, our CROs and other third parties we engage fail to comply with 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. Accordingly, if our CROs or others fail to comply with these regulations or fail to recruit a sufficient number of participants, we may be required to repeat clinical trials, which would delay the regulatory approval process.

While we will have agreements governing their activities, our CROs and other third parties we engage will not be our employees, and we will not control whether or not they devote sufficient time and resources to our future clinical and nonclinical programs. These CROs and others 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 which could harm our business. We face the risk of potential unauthorized disclosure or misappropriation of our intellectual property by CROs and others, which may reduce our trade secret protection and allow our potential competitors to access and exploit our proprietary technology. In addition, certain of our agreements with CROs and other third parties provide for monetary and other limitations on their liability. If our CROs do not successfully carry out their contractual duties or obligations, fail to meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for any other reasons, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for, or successfully commercialize any product candidate that we develop. As a result, our financial results and the commercial prospects for any product candidate that we develop would be harmed, our costs could increase, and our ability to generate revenue could be delayed, decreased or eliminated.

If our relationship with these CROs terminates, we may not be able to enter into arrangements with alternative CROs or do so on commercially reasonable terms. Switching or adding additional CROs involves substantial 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 negatively impact our ability to meet our desired clinical development timelines. Though we intend to carefully manage our relationships with our CROs, 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 negative impact on our business, financial condition and prospects.

In addition, 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. The FDA may conclude that a financial relationship between us and a principal investigator has created a conflict of interest or otherwise affected interpretation of the trial. The FDA 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 and may ultimately lead to the denial of marketing approval of our current and future product candidates.

We do not have our own manufacturing capabilities and will rely on third parties to produce clinical and commercial supplies of our current and any future product candidates. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We have no or limited experience in drug formulation or manufacturing as a company, and we do not own or operate, and we do not expect to own or operate, facilities for drug manufacturing, storage and distribution, or testing. We will be dependent on third parties to manufacture the clinical supplies of our product candidates.

Further, we also will rely on third-party manufacturers to supply us with sufficient quantities of our product candidates, to be used, if approved, for commercialization. We do not have long-term supply agreements or commitments with a manufacturer to produce raw materials, active pharmaceutical ingredients or the finished products of our product candidates or the associated packaging. Furthermore, the raw materials for our product candidates are sourced, in some cases, from a single-source supplier. If we were to experience an unexpected loss of supply of any of our product candidates or any of our future product candidates for any reason, whether as a result of manufacturing, supply or storage issues or otherwise, we could experience delays, disruptions, suspensions or terminations of, or be required to restart or repeat, any pending or ongoing clinical trials. For example, adverse macroeconomic or geopolitical developments such as a health epidemic or pandemic, or the ongoing conflicts in Ukraine and the Middle East, could impact our ability to procure sufficient supplies for the development of our products and product candidates. Any significant delay in the supply of a product candidate, or the raw material components thereof, for an ongoing clinical trial due to the need to replace a third-party manufacturer could considerably delay completion of our clinical trials, product testing and potential regulatory approval of our product candidates.

Our reliance on third-party manufacturers entails various risks, some of which we would not be subject to if we manufactured product candidates ourselves, including:

- inability to meet our drug specifications and quality requirements consistently;
- delay or inability to procure or expand sufficient manufacturing capacity;
- issues related to scale-up of manufacturing;
- costs and validation of new equipment and facilities required for scale-up;
- failure to comply with cGMP or similar foreign standards;
- inability to negotiate manufacturing agreements with third parties under commercially reasonable terms, if at all;
- termination or nonrenewal of manufacturing agreements with third parties in a manner or at a time that is costly or damaging to us;
- reliance on single sources for drug components;
- lack of qualified backup suppliers for those components that are currently purchased from a sole or single source supplier;
- misappropriation of proprietary information, including our trade secrets and know-how;
- the mislabeling of clinical supplies, potentially resulting in the wrong dose amounts being supplied or study drug or placebo not being properly identified;
- clinical supplies not being delivered to clinical sites on time, leading to clinical trial interruptions, or drug supplies not being distributed to commercial vendors in a timely manner, resulting in lost sales;
- operations of our third-party manufacturers or suppliers being disrupted by conditions unrelated to our business or operations, including the bankruptcy of the manufacturer or supplier; and
- carrier disruptions or increased costs that are beyond our control.

We do not have complete control over all aspects of the manufacturing process of, and are dependent on, our contract manufacturing partners for compliance with cGMP regulations for manufacturing both active drug substances and finished drug products. Third-party manufacturers may not be able to comply with cGMP regulations or similar regulatory requirements outside of the United States. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to secure and/or maintain marketing approval for their manufacturing facilities. In addition, we do not have control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find

alternative manufacturing facilities, which would significantly impact our ability to develop, obtain marketing 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 fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or drugs, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our product candidates or drugs and harm our business and results of operations.

Our current and anticipated future dependence upon others for the manufacture of our product candidates or drugs may adversely affect our future profit margins and our ability to commercialize any product candidates that receive marketing approval on a timely and competitive basis.

If we or our third-party manufacturers use hazardous and biological materials in a manner that causes injury or violates applicable law, we may be liable for damages.

Our research and development activities involve the controlled use of potentially hazardous substances, including chemical and biological materials, by our third-party manufacturers. Our manufacturers are subject to federal, state, and local laws and regulations in the United States governing the use, manufacture, storage, handling and disposal of medical, radioactive and hazardous materials. Although we believe that our manufacturers' procedures for using, handling, storing and disposing of these materials comply with legally prescribed standards, we cannot completely eliminate the risk of contamination or injury resulting from medical, radioactive or hazardous materials. As a result of any such contamination or injury, we may incur liability or local, city, state or federal authorities may curtail the use of these materials and interrupt our business operations. In the event of an accident, we could be held liable for damages or penalized with fines, and the liability could exceed our resources. We do not have any insurance for liabilities arising from medical radioactive or hazardous materials. Compliance with applicable environmental laws and regulations is expensive, and current or future environmental regulations may impair our research, development, and production efforts, which could harm our business, prospects, financial condition, or results of operations.

Arena was acquired by Pfizer in 2022, and Arena's acquisition may negatively impact our development programs and stock price.

On March 11, 2022, Pfizer acquired Arena, and Arena became a wholly owned subsidiary of Pfizer. We have licensed product candidates, including bexicaserin and LP659, from Arena under the Arena License Agreement, and we rely on Arena to help protect intellectual property relating to our licensed products. We do not know if Pfizer will cooperate with us in protecting the intellectual property relating to our licensed products. We also do not know if Pfizer will view our development programs positively or negatively, or as complimentary or competitive to its development programs. We are also entitled to receive information and milestones and royalty payments under the Royalty Purchase Agreement. If a disagreement between us and Pfizer were to occur, Arena might challenge our rights or default on its obligations in the Arena License Agreement, the Royalty Purchase Agreement or another agreement between us, any of which could have an adverse impact on our ability to develop our licensed products or on our stock price.

Risks Related to Our Business Operations, Employee Matters and Managing Growth

We are highly dependent on the services of our senior management team and if we are not able to retain these members of our management team and recruit and retain additional management, clinical and scientific personnel, our business will be harmed.

We are highly dependent on our senior management team. The employment agreements we have with these officers do not prevent such persons from terminating their employment with us at any time. The loss of the services of any of these persons could impede the achievement of our research, development and commercialization objectives.

In addition, we will need to attract, retain and motivate highly qualified additional management, clinical and scientific personnel. If we are not able to retain our management and to attract, on acceptable terms, additional qualified personnel necessary for the continued development of our business, we may not be able to sustain our operations or grow.

We may not be able to attract or retain qualified personnel in the future due to the intense competition for qualified personnel among biotechnology, pharmaceutical and other businesses. Many of the other 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. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high-quality candidates and consultants than what we have to offer. In response to competition and adverse macroeconomic and geopolitical developments, including inflation and labor shortages, we may need to adjust employee cash compensation, which would affect our operating costs and our margins, or equity compensation, which would affect our outstanding share count and cause dilution to existing stockholders. Despite our efforts to retain valuable employees,

members of our management, scientific and development teams may terminate their employment with us on short notice. If we are unable to continue to attract, retain and motivate high-quality personnel and consultants to accomplish our business objectives, the rate and success at which we can discover and develop product candidates and our business will be limited and we may experience constraints on our development objectives.

Our future performance will also depend, in part, on our ability to successfully integrate newly hired executive officers into our management team and our ability to develop an effective working relationship among senior management. Our failure to integrate these individuals and create effective working relationships among them and other members of management could result in inefficiencies in the development and commercialization of our product candidates, harming future regulatory approvals, sales of our product candidates and our results of operations. Additionally, we do not currently maintain “key person” life insurance on the lives of our executives or any of our employees.

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

We may not be able to effectively manage the expansion of our operations, which may result in weaknesses in our infrastructure, operational inefficiencies, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant effort and capital expenditures and may divert attention and financial resources from other projects, such as the development of our current and potential future product candidates. If our management is unable to effectively manage our growth, our expenses may increase more than expected, our ability to generate and grow revenue could be reduced and we may not be able to implement our business strategy. Our future financial performance, our ability to commercialize product candidates, develop a scalable infrastructure and compete effectively will depend, in part, on our ability to effectively manage any future growth.

International expansion could expose us to business, regulatory, political, operational, financial, pricing and reimbursement risks associated with doing business outside of the United States.

We are subject to risks associated with conducting business internationally. Some of our suppliers are located outside of the United States, and we are planning to initiate a global Phase 3 program for bexicaserin, which will involve additional vendors and clinical sites outside of the United States. Furthermore, our business strategy incorporates potential international expansion, including the potential hiring of employees or contractors to help manage aspects of the global Phase 3 program for bexicaserin. Similarly, we may explore opportunities with potential partners outside the United States. Doing business internationally involves a number of risks, including but not limited to:

- multiple, conflicting and changing laws and regulations, such as privacy regulations, tax laws, export and import restrictions, employment laws, regulatory requirements, and other governmental approvals, permits and licenses;
- economic, political, legal and social conditions in other countries (such as China), changes in government relations between such other countries and the United States or other governments, uncertainty about the future relationship between the United States and such other countries (including with respect to trade policies, treaties, government regulations and tariffs), and differences in the economies of such other countries including with respect to the amount of government involvement, level of development, growth rate, control of foreign exchange and allocation of resources;
- failure by us to obtain and maintain regulatory approvals for the conduct of clinical trials in various countries;
- difficulties in staffing and managing foreign operations;
- rejection or qualification of foreign clinical trial data by the competent authorities of other countries;
- delays or interruptions in the supply of clinical trial materials resulting from any events affecting raw material supply or manufacturing capabilities abroad;
- additional potentially relevant third-party patent and other intellectual property rights;
- complexities and difficulties in obtaining, maintaining, protecting and enforcing our intellectual property rights;
- currency exchange rate fluctuations and the cost and risk of entering into hedging transactions if we choose to do so in the future;
- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease and related shelter-in-place orders, travel, social distancing and quarantine policies, boycotts, curtailment of trade and other business restrictions;

- expenses for travel and insurance; and
- regulatory and compliance risks that relate to anti-corruption compliance and record-keeping that may fall within the purview of the FCPA, its accounting provisions or its anti-bribery provisions or provisions of anti-corruption or anti-bribery laws in other countries.

Any of these factors could harm our future international expansion and operations and, consequently, our results of operations.

Our employees, principal investigators, consultants and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, independent contractors, CROs, principal investigators, consultants and commercial partners. Misconduct by these parties could include intentional failures to comply with FDA regulations or the regulations applicable in other jurisdictions, provide accurate information to the FDA and other regulatory authorities, comply with manufacturing standards, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. In particular, 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 restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Such misconduct also could involve the improper use of information obtained in the course of clinical trials or interactions with the FDA or other regulatory authorities, which could result in regulatory sanctions and cause serious harm to our reputation. If we obtain regulatory approval for any of our product candidates and begin commercializing those products, our potential exposure under such laws will increase significantly, and our costs associated with compliance with such laws are also likely to increase. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from government investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us and we are not successful in defending ourselves or asserting our rights, those actions could have a negative impact on our business, financial condition, results of operations and prospects, including the imposition of significant civil, criminal and administrative penalties, damages, disgorgement, monetary fines, imprisonment, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, additional reporting requirements and/or oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations.

Significant disruptions of our information technology systems or data security incidents could result in significant financial, legal, regulatory, business and reputational harm to us.

We are increasingly dependent on information technology systems and infrastructure, including mobile technologies, to operate our business. In the ordinary course of our business, we collect, store, process and transmit large amounts of sensitive information, including intellectual property, proprietary business information, personal data and other confidential information. We have also outsourced elements of our operations (including elements of our information technology infrastructure) to third parties, and as a result, we manage a number of third-party vendors who may have access to our computer networks or our confidential information. In addition, many of those third parties in turn subcontract or outsource some of their responsibilities to third parties. While all information technology operations are inherently vulnerable to inadvertent or intentional security breaches, incidents, attacks and exposures, the accessibility and distributed nature of our information technology systems, and the sensitive information stored on those systems, make such systems potentially vulnerable to unintentional or malicious, internal and external attacks on our technology environment. In addition, we have enabled our employees to work remotely, which may make us more vulnerable to cyberattacks. Furthermore, past or future business transactions could expose us to risks and vulnerabilities. Potential vulnerabilities can be exploited from inadvertent or intentional actions of our employees, third-party vendors, business partners, malicious third parties and other sources. Attacks of this nature are increasing in their frequency, levels of persistence, sophistication and intensity, and are being conducted by sophisticated and organized groups and individuals with a wide range of motives (including, but not limited to, industrial espionage) and expertise, including organized criminal groups, “hacktivists,” nation states and others. In addition to the access to or extraction of sensitive information, such attacks could include the deployment of harmful malware, malicious code (such as viruses and worms), ransomware, denial-of-service attacks, social engineering (including through deep fakes, which may be increasingly more difficult to identify as fake, and phishing attacks) and other means to affect service reliability and threaten the confidentiality, integrity and availability of information. In particular, ransomware attacks have become increasingly prevalent and severe. Our reliance on third parties could also introduce new cybersecurity risks and vulnerabilities, including supply-chain attacks. In addition, the prevalent use of mobile devices increases the risk of data security incidents. Furthermore, our sensitive information could be leaked, disclosed or revealed as a result of or in connection with our employees', personnel's or vendors' use of generative AI technologies.

Significant disruptions of our, our third-party vendors' and/or our business partners' information technology systems or other similar data security incidents could adversely affect our business operations and/or result in the loss, misappropriation, and/or unauthorized access, use or disclosure of, or the prevention of access to, sensitive information, which could result in financial, legal, regulatory, business and reputational harm to us. In addition, information technology system disruptions, whether from attacks on our technology environment or from other failures of our data or information systems such as natural disasters, terrorism, war and telecommunication and electrical failures, could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Additionally, theft of our intellectual property or proprietary business information could require substantial expenditures to remedy. If we or our third-party collaborators, consultants, contractors, suppliers, or service providers were to suffer an attack or breach, for example, that resulted in the unauthorized access to or use or disclosure of personal or health information, we may have to notify consumers, partners, collaborators, government authorities, and the media, and may be subject to investigations, civil penalties, administrative and enforcement actions, and litigation, any of which could harm our business and reputation.

There is no way of knowing with certainty whether we have experienced any data security incidents that have not been discovered. While we have no reason to believe this to be the case, attackers have become very sophisticated in the way they conceal access to systems, and many companies that have been attacked are not aware that they have been attacked. Any event that leads to unauthorized access, use or disclosure of sensitive information, including but not limited to personal data regarding our clinical trial participants or employees, whether in our possession or in the possession of third parties upon whom we rely, could disrupt our business, harm our reputation, compel us to comply with applicable federal and/or state breach notification laws and foreign law equivalents, subject us to time consuming, distracting and expensive litigation, regulatory investigation and oversight, mandatory corrective action, require us to verify the correctness of database contents, or otherwise subject us to liability under laws, regulations and contractual obligations, including those that protect the privacy and security of personal information. This could result in increased costs to us, and result in significant legal and financial exposure and/or reputational harm. Limitations of liability in contracts and/or insurance coverage may be inadequate. For example, our insurance coverage may be inadequate to protect us from privacy and security liabilities, such coverage may not continue to be available on commercially reasonable terms or at all, or such coverage may not pay future claims. Moreover, data security incidents and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. While we have implemented security measures intended to protect our information technology systems and infrastructure, there can be no assurance that such measures will successfully prevent service interruptions or security incidents.

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 and volume volatility in recent years that have often been unrelated or disproportionate to the operating performance of these companies. 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, operating results or financial condition.

Risks Related to Ownership of Our Common Stock

An active, liquid and orderly trading market for our common stock may not be sustained.

We have a limited number of shares that trade each day compared to many other companies. You may not be able to sell your shares quickly or at the market price if trading in shares of our common stock is not active.

Further, a less active market may impair our ability to raise capital by selling shares of our common stock and may impair our ability to enter into strategic partnerships or acquire companies or products by using our shares of common stock as consideration.

The price of our stock may be volatile, and you could lose all or part of your investment.

The trading price of our common stock may be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control, including limited trading volume. In addition to the factors discussed in this "Risk Factors" section and elsewhere in this Quarterly Report, these factors include:

- the commencement, enrollment or results of our ongoing and planned preclinical studies and clinical trials, or any future pre-clinical studies or clinical trials we may conduct, of our current and any future product candidates, or changes in the development status of our current and any future product candidates;

- any delay in our regulatory filings for our current and any future product candidates and any adverse development or perceived adverse development with respect to the applicable regulatory authority's review of such filings, including without limitation the FDA's issuance of a "refusal to file" letter or a request for additional information;
- adverse results or delays in our preclinical studies and clinical trials, including as a result of the FDA or comparable foreign regulatory authorities disagreeing with the design or implementation of our clinical trials;
- our decision to initiate a clinical trial, not to initiate a clinical trial, or to terminate an existing clinical trial;
- adverse regulatory decisions, including failure to receive regulatory approval for our current and any future product candidates;
- changes in laws or regulations applicable to our current and any future product candidates, including but not limited to clinical trial requirements for approvals;
- the failure to obtain coverage and adequate reimbursement of our current and any future product candidates, if approved;
- changes to the structure of healthcare payment systems;
- changes to our relationship with any manufacturers, suppliers, licensors, future collaborators or other strategic partners;
- our inability to obtain adequate product supply for any approved drug product or inability to do so at acceptable prices;
- our inability to establish collaborations if needed, on favorable terms or at all;
- our failure to commercialize our current and any future product candidates;
- any termination or loss of rights under the Arena License Agreement or Royalty Purchase Agreement;
- additions or departures of key clinical, scientific or management personnel;
- unanticipated serious safety concerns related to the use of our current and any future product candidates;
- introduction of new products or services offered by us or our competitors, or the release or publication of clinical trial results from competing product candidates;
- announcements of significant acquisitions, strategic partnerships, joint ventures, or capital commitments by us or our competitors;
- our inability to effectively manage our growth;
- actual or anticipated variations in quarterly operating results;
- our cash position;
- our failure to meet the estimates and projections of the investment community or that we may otherwise provide to the public;
- publication of research reports about us or our industry or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- changes in the market valuations of similar companies;
- overall performance of the equity markets;
- issuances of debt or equity securities;
- sales of our common stock by us or our stockholders in the future, including sales of our common stock by Arena, or the perception that such sales may occur;
- trading volume of our common stock;
- changes in accounting practices;
- ineffectiveness of our internal controls;
- disputes or other developments relating to proprietary rights, including patents, litigation matters, and our ability to obtain patent protection for our technologies;
- significant lawsuits, including patent or stockholder litigation;

- geopolitical and macroeconomic conditions, including the conflicts in Ukraine and the Middle East, economic slowdowns, recessions, inflation, high interest rates, bank failures and tightening of credit markets; and
- other events or factors, many of which are beyond our control.

In addition, the stock market in general, and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance. In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of a company's securities. This type of litigation, if instituted, could result in substantial costs and a diversion of management's attention and resources, which would harm our business, operating results or financial condition.

We do not intend to pay dividends on our common stock so any returns will be limited to the value of our stock.

We have never declared or paid any cash dividend on our common stock. We currently anticipate that we will retain future earnings, if any, for the development, operation, and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Any return to stockholders would therefore be limited to the appreciation, if any, of their stock.

The dual class structure of our common stock may limit your ability to influence corporate matters and may limit your visibility with respect to certain transactions.

The dual class structure of our common stock may limit your ability to influence corporate matters. Holders of our common stock are entitled to one vote per share, while holders of our non-voting common stock are not entitled to any votes. Nonetheless, each share of our non-voting common stock may be converted at any time into one share of our common stock at the option of its holder by providing written notice to us, subject to the limitations provided for in our amended and restated certificate of incorporation. Consequently, if holders of our non-voting common stock exercise their option to make this conversion, this will have the effect of increasing the relative voting power of those prior holders of our non-voting common stock, and correspondingly decreasing the voting power of the holders of our common stock, which may limit your ability to influence corporate matters.

Sales of a substantial number of shares of our common stock by our existing stockholders in the public market, or the perception that such sales could occur, could cause our stock price to fall.

If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market, the trading price of our common stock could decline. In January 2024, Arena, a wholly owned subsidiary of Pfizer, reported that it had sold 3,978,540 shares of our common stock. Substantial sales of our common stock, or the perception that such sales could occur, could cause our stock price to fall.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to the Sales Agreement and our equity incentive plans, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.*

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

We expect that we will need significant additional capital in the future to continue our planned operations, including conducting clinical trials, commercialization efforts if we are able to obtain marketing approval of any of our current or future product candidates, research and development activities, and costs associated with operating as a public company. To raise capital, we may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. For example, we entered into the Sales Agreement with Cantor Fitzgerald, and in August 2023 we filed a prospectus supplement providing for the issuance and sale, from time to time, of shares of common stock having an aggregate offering price of up to \$75.0 million through Cantor Fitzgerald acting as the sales agent. We sold 1,422,250 shares of common stock under the Sales Agreement for gross proceeds of \$8.8 million in 2023. In March 2024 we filed a sales agreement prospectus to offer up to \$150.0 million of shares of common stock under the Sales Agreement (exclusive of shares previously sold), and we had not sold any shares under the most recent sales agreement prospectus as of March 31, 2024. In January 2024, we completed an underwritten public offering of common stock in which we sold 11,500,000 shares of common stock for gross proceeds of \$241.5 million before deducting underwriting discounts and commissions and offering expenses. In March 2024, we completed a private placement of 2,850,000 shares of non-voting common stock for gross proceeds of \$59.9 million. If we sell additional common stock, convertible securities or other equity securities, investors may be materially diluted by subsequent sales. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights, preferences and privileges senior to the holders of our common stock.

Pursuant to our 2021 Equity Incentive Plan (2021 Plan), our management is authorized to grant stock options to our employees, directors and consultants. Additionally, the number of shares of our common stock reserved for issuance under our 2021 Plan automatically increases on January 1 of each year, beginning on January 1, 2022, and continuing through and including January 1, 2031, by 5% of the total number of shares of our capital stock outstanding on December 31 of the preceding calendar year (determined on an as-converted to voting common stock basis, without regard to any limitations on the conversion of the non-voting common stock), or a lesser number of shares determined by our board of directors.

In addition, pursuant to our ESPP, the number of shares of our common stock reserved for issuance automatically increases on January 1 of each calendar year, beginning on January 1, 2022, and continuing through January 1, 2031, by the lesser of (i) 1% of the total number of shares of our common stock outstanding (determined on an as-converted to voting common stock basis, without regard to any limitations on the conversion of the non-voting common stock) on the last day of the fiscal year before the date of the automatic increase and (ii) such number of shares of common stock that would cause the aggregate number of shares of common stock then reserved for issuance under the ESPP to equal 1,060,017 shares, or a lesser number of shares determined by our board of directors.

Unless our board of directors elects not to increase the number of shares available for future grant pursuant to our 2021 Plan and ESPP each year, our stockholders may experience additional dilution, which could cause our stock price to fall.

We are an emerging growth company and a smaller reporting company, and the reduced reporting requirements applicable to emerging growth companies and smaller reporting companies may make our common stock less attractive to investors.

We are an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 (JOBS Act). For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002 (the Sarbanes-Oxley Act), reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding nonbinding advisory votes on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could be an emerging growth company until December 31, 2026, although circumstances could cause us to lose that status earlier, including if we become a “large accelerated filer” as defined in Rule 12b-2 under the Exchange Act or if we have total annual gross revenue of \$1.235 billion or more during any fiscal year before that time, in which cases we would no longer be an emerging growth company as of the following December 31 or, if we issue more than \$1.0 billion in non-convertible debt during any three-year period before that time, we would cease to be an emerging growth company immediately. 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 not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. Investors may 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 price may be 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 provision allows an emerging growth company to delay the adoption of accounting standards that have different effective dates for public and private companies until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption from new or revised accounting standards, and therefore we will not be subject to the same requirements to adopt new or revised accounting standards as other public companies that are not emerging growth companies.

We are also a “smaller reporting company” as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as our voting common stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than \$100.0 million during the most recently completed fiscal year and our voting common stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter.

Delaware law and provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make a merger, tender offer or proxy contest difficult, thereby depressing the trading price of our common stock.

Provisions of our amended and restated certificate of incorporation and amended and restated bylaws may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in which

stockholders might otherwise receive a premium for their shares or transactions that our stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our common stock. Among other things, our amended and restated certificate of incorporation and amended and restated bylaws:

- permit our board of directors to issue up to 10,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate (including the right to approve an acquisition or other change in our control);
- provide that the authorized number of directors may be changed only by resolution of the board of directors;
- provide that our board of directors or any individual director may only be removed with cause and the affirmative vote of the holders of at least 66-2/3% of the voting power of all of our then-outstanding common stock;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- divide our board of directors into three classes;
- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide notice in writing in a timely manner and also specify requirements as to the form and content of a stockholder's notice;
- do not provide for cumulative voting rights (therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose);
- provide that special meetings of our stockholders may be called only by the chair of our board of directors, our Chief Executive Officer or by the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors; and
- provide that the Court of Chancery of the State of Delaware is the sole and exclusive forum for substantially all disputes between us and our stockholders, as described below.

The amendment of any of these provisions, with the exception of the ability of our board of directors to issue shares of preferred stock and designate any rights, preferences and privileges thereto, would require approval by the holders of at least 66-2/3% of our then-outstanding common stock.

In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time. A Delaware corporation may opt out of this provision by express provision in its original certificate of incorporation or by amendment to its certificate of incorporation or bylaws approved by its stockholders. However, we have not opted out of this provision.

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

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America are the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees.

Our amended and restated certificate of incorporation provides that, to the fullest extent permitted by law and subject to the court's having personal jurisdiction over the indispensable parties named as defendants, the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- any derivative action or proceeding brought on our behalf;
- any action or proceeding asserting a breach of fiduciary duty owed by any of our current or former directors, officers or other employees to us or our stockholders;

- any action or proceeding asserting a claim against us or any of our current or former directors, officers or other employees arising out of or pursuant to any provision of the Delaware General Corporation Law, our certificate of incorporation or bylaws;
- any action or proceeding to interpret, apply, enforce or determine the validity of our amended and restated certificate of incorporation or our amended and restated bylaws;
- any action or proceeding as to which the Delaware General Corporation Law confers jurisdiction to the Court of Chancery of the State of Delaware; and
- any action asserting a claim against us or any of our directors, officers or other employees that is governed by the internal affairs doctrine.

This provision does not apply to suits brought to enforce a duty or liability created by the Exchange Act. Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated certificate of incorporation further provides that the federal district courts of the United States of America is the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated certificate of incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find either exclusive forum provision in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could seriously harm our business.

General Risk Factors

We have incurred, and expect to continue to incur, significant 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.

As a public company, we have incurred and expect to continue to incur significant legal, accounting, and other expenses that we did not incur as a private company. We are subject to the reporting requirements of the Exchange Act, which require, among other things, that we file with the SEC annual, quarterly, and current reports with respect to our business and financial condition. In addition, the Sarbanes-Oxley Act, as well as rules subsequently adopted by the SEC and Nasdaq to implement provisions of the Sarbanes-Oxley Act, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, in July 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) was enacted. There are significant corporate governance and executive compensation related provisions in the Dodd-Frank Act that require the SEC to adopt additional rules and regulations in these areas such as "say on pay" and proxy access. Emerging growth companies and smaller reporting companies are exempted from certain of these requirements, but we may be required to implement these requirements sooner than budgeted or planned and thereby incur unexpected expenses. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

We expect the rules and regulations applicable to public companies to continue to substantially increase our legal and financial compliance costs and to make some activities more time-consuming and costly. If these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition, and results of operations. The increased costs will continue to decrease our net income or increase our net loss, and may require us to reduce costs in other areas of our business or increase the prices of our products or services. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain the same or similar coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers.

If we fail to maintain proper and effective internal control over financial reporting, our ability to produce accurate and timely financial statements could be impaired, investors may lose confidence in our financial reporting and the trading price of our common stock may decline.

Pursuant to Section 404 of the Sarbanes-Oxley Act, our management is required to report upon the effectiveness of our internal control over financial reporting. When we lose our status as an “emerging growth company,” if we do not qualify as a non-accelerated filer our independent registered public accounting firm will be required to attest to the effectiveness of our internal control over financial reporting. The rules governing the standards that must be met for our management to assess our internal control over financial reporting are complex and require significant documentation, testing and possible remediation. To comply with the requirements of being a reporting company under the Exchange Act, we will need to upgrade our information technology systems; implement additional financial and management controls, reporting systems and procedures; and hire additional accounting and finance staff. If we or, if required, our auditors are unable to conclude that our internal control over financial reporting is effective, investors may lose confidence in our financial reporting and the trading price of our common stock may decline.

We cannot assure you that there will not be material weaknesses or significant deficiencies in our internal control over financial reporting in the future. Any failure to maintain effective internal control over financial reporting could severely inhibit our ability to accurately report our financial condition, results of operations or cash flows. If we are unable to conclude that our internal control over financial reporting is effective, or if our independent registered public accounting firm determines we have a material weakness in our internal control over financial reporting once that firm begin its Section 404 reviews, investors may lose confidence in the accuracy and completeness of our financial reports, the market price of our common stock could decline, and we could be subject to sanctions or investigations by Nasdaq, the SEC or other regulatory authorities. Failure to remedy any material weakness in our internal control over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

Our business could be negatively affected as a result of actions of activist stockholders, and such activism could impact the trading value of our securities.

Stockholders may, from time to time, engage in proxy solicitations or advance stockholder proposals, or otherwise attempt to effect changes and assert influence on our board of directors and management. Activist campaigns that contest or conflict with our strategic direction or seek changes in the composition of our board of directors could have an adverse effect on our operating results and financial condition. A proxy contest would require us to incur significant legal and advisory fees, proxy solicitation expenses and administrative and associated costs and require significant time and attention by our board of directors and management, diverting their attention from the pursuit of our business strategy. Any perceived uncertainties as to our future direction and control, our ability to execute on our strategy, or changes to the composition of our board of directors or senior management team arising from a proxy contest could lead to the perception of a change in the direction of our business or instability which may result in the loss of potential business opportunities, make it more difficult to pursue our strategic initiatives, or limit our ability to attract and retain qualified personnel and business partners, any of which could adversely affect our business and operating results. If individuals are ultimately elected to our board of directors with a specific agenda, it may adversely affect our ability to effectively implement our business strategy and create additional value for our stockholders. We may choose to initiate, or may become subject to, litigation as a result of the proxy contest or matters arising from the proxy contest, which would serve as a further distraction to our board of directors and management and would require us to incur significant additional costs. In addition, actions such as those described above could cause significant fluctuations in our stock price based upon temporary or speculative market perceptions or other factors that do not necessarily reflect the underlying fundamentals and prospects of our business.

Our failure to meet Nasdaq’s continued listing requirements could result in a delisting of our common stock.

If we fail to satisfy the continued listing requirements of Nasdaq, such as the corporate governance requirements or the minimum closing bid price requirement, Nasdaq may take steps to delist our common stock. Such a delisting would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. In the event of a delisting, we can provide no assurance that any action taken by us to restore compliance with listing requirements would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the Nasdaq minimum bid price requirement or prevent future non-compliance with the listing requirements of Nasdaq.

If securities or industry analysts publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. If one or more of the analysts who covers us downgrades our stock or publishes inaccurate or unfavorable

research about our business, our stock price may decline. If one or more of these analysts discontinues coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

Artificial intelligence presents new risks and challenges to our business.

AI generally refers to the application of technology to perform tasks resembling human cognitive function. As with many technological innovations, AI presents risks and challenges that could impact our business.

AI uses algorithms to enable continuous learning from new input data and development of new or adjusted output based on the learnings. Data therefore plays a critical role in the training and success of any AI application. If an AI tool is permitted to access our proprietary, confidential, or personal data, these data could be at risk of improper use or disclosure. For example, our vendors may incorporate generative AI tools into the products or services that we use. If the providers of these generative AI tools do not meet existing or rapidly evolving regulatory or industry standards with respect to privacy and data protection, or if our vendors or third-party partners experience an actual or perceived breach or privacy or security incident because of the use of generative AI, we may lose valuable intellectual property and other sensitive information, become subject to government action or lawsuits from third parties, and our reputation could be harmed. Further, malicious third parties around the world use increasingly sophisticated methods, including AI, to engage in illegal activities such as the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering and other means to affect service reliability and threaten the confidentiality, integrity and availability of information. Any of these outcomes could damage our reputation, result in the loss of valuable property and information, and otherwise adversely impact our business.

We may also face increased competition from other companies that are using AI, some of which may develop more effective methods than we and any of our business partners have, which could have a material adverse effect on our business, results of operations, or financial condition. In addition, uncertainties regarding developing legal and regulatory requirements and standards may require significant resources to modify and maintain business practices to comply with U.S. and non-U.S. laws concerning the use of AI, the nature of which cannot be determined at this time.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

Use of Proceeds

On March 16, 2021, we completed our initial public offering (IPO) and sold 5,298,360 shares of our common stock (inclusive of 298,360 shares sold in April 2021 pursuant to the underwriters' option to purchase additional shares) at a public offering price of \$16.00 per share. The offer and sale of the shares of common stock in the IPO were registered pursuant to a Registration Statement on Form S-1, as amended (File No. 333-253329), that was declared effective on March 11, 2021.

The net proceeds from the IPO are held in cash, cash equivalents and short-term investments. As of March 31, 2024, we have used approximately \$74.8 million of the proceeds from our IPO for general corporate purposes, including to fund the research and development of bexicaserin, LP659 and other preclinical programs. There has been no material change in the planned use of such proceeds from that described in the prospectus for our IPO, except that we are currently focused on developing bexicaserin (LP352), LP659, and other early stage research.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

None.

Item 5. Other Information.

None.

Item 6. Exhibits.

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Form 10-Q (File No. 001-40192) filed with the SEC on May 10, 2021).
3.2*	Amended and Restated Bylaws of the Registrant.
4.1	Form of Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-253329), filed with the SEC on March 8, 2021).
10.1*	Non-Voting Common Stock Purchase Agreement, dated March 26, 2024, by and between the Registrant and the Purchaser named therein.
31.1*	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as amended, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as amended, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*#	Certification of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document with Embedded Linkbase Documents
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Filed herewith.

+ Indicates management contract or compensatory plan.

The information in Exhibit 32.1 shall not be deemed “filed” for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act or the Exchange Act (including this Quarterly Report), unless the Registrant specifically incorporates the foregoing information into those documents by reference.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Longboard Pharmaceuticals, Inc.

Date: May 2, 2024

By: _____
/s/ Kevin R. Lind
Kevin R. Lind
President and Chief Executive Officer
(Principal Executive Officer)

Date: May 2, 2024

By: _____
/s/ Brandi L. Roberts
Brandi L. Roberts
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

AMENDED AND RESTATED BYLAWS
OF
LONGBOARD PHARMACEUTICALS, INC.

September 21, 2023

ARTICLE I
OFFICES

Section 1. Registered Office. The registered office of the corporation in the State of Delaware shall be in the City of Wilmington, County of New Castle.

Section 2. Other Offices. The corporation shall also have and maintain an office or principal place of business at such place as may be fixed by the corporation's Board of Directors (the "**Board of Directors**"), and may also have offices at such other places, both within and without the State of Delaware as the Board of Directors may from time to time determine or the business of the corporation may require.

ARTICLE II
CORPORATE SEAL

Section 3. Corporate Seal. The Board of Directors may adopt a corporate seal. The corporate seal shall consist of a die bearing the name of the corporation and the inscription, "Corporate Seal-Delaware." Said seal may be used by causing it or a facsimile thereof to be impressed or affixed or reproduced or otherwise.

ARTICLE III
STOCKHOLDERS' MEETINGS

Section 4. Place of Meetings. Meetings of the stockholders of the corporation may be held at such place, either within or without the State of Delaware, as may be determined from time to time by the Board of Directors. The Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as provided under the Delaware General Corporation Law (the "**DGCL**").

Section 5. Annual Meetings.

(a) The annual meeting of the stockholders of the corporation, for the purpose of election of directors and for such other business as may properly come before it, shall be held on such date and at such time as may be designated from time to time by the Board of Directors. Any annual meeting of stockholders previously scheduled by the Board of Directors may be postponed,

rescheduled or cancelled by the Board of Directors, or any director or officer of the corporation to whom the Board of Directors delegates such authority, at any time before or after notice of such meeting has been given to stockholders. Nominations of persons for election to the Board of Directors of the corporation and the proposal of business to be considered by the stockholders may be made at an annual meeting of stockholders: (i) pursuant to the corporation's notice of meeting of stockholders (with respect to business other than nominations); (ii) brought specifically by or at the direction of the Board of Directors; or (iii) by any stockholder of the corporation who was a stockholder of record at the time of giving the stockholder's notice provided for in Section 5(b) of these Amended and Restated Bylaws (the "**Bylaws**") and who is a stockholder of record at the time of the meeting of stockholders, who is entitled to vote at the meeting and who complied with the notice procedures set forth in this Section 5. For the avoidance of doubt, clause (iii) above shall be the exclusive means for a stockholder to make nominations and submit other business (other than matters properly included in the corporation's notice of meeting of stockholders and proxy statement under Rule 14a-8 under the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder (the "**1934 Act**")) before an annual meeting of stockholders.

(b) At an annual meeting of the stockholders, only such business shall be conducted as is a proper matter for stockholder action under Delaware law and as shall have been properly brought before the meeting.

(i) For nominations for the election to the Board of Directors to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of Section 5(a) of these Bylaws, the stockholder must deliver written notice to the Secretary at the principal executive offices of the corporation on a timely basis as set forth in Section 5(b)(iii) of these Bylaws and must update and supplement the information contained in such written notice on a timely basis as set forth in Section 5(c) of these Bylaws. Such stockholder's notice shall set forth: (A) as to each nominee such stockholder proposes to nominate at the meeting: (1) the name, age, business address and residence address of such nominee; (2) the principal occupation or employment of such nominee; (3) the class and number of shares of each class of capital stock of the corporation which are owned of record and beneficially by such nominee and a list of any pledge of or encumbrances on such shares; (4) the date or dates on which such shares were acquired and the investment intent of such acquisition; (5) with respect to each nominee for election or re-election to the Board of Directors, include a completed and signed questionnaire, representation and agreement required by Section 5(e) of these Bylaws; and (6) all other information concerning such nominee as would be required to be disclosed in a proxy statement soliciting proxies for the election of such nominee as a director in an election contest (even if an election contest is not involved and whether or not proxies are being or will be solicited), or that is otherwise required to be disclosed or provided to the corporation pursuant to Section 14 of the 1934 Act and the rules and regulations promulgated thereunder (including such person's written consent to being named in a proxy statement, associated proxy card and other filings as a nominee and to serving as a director if elected); and (B) the information required by Section 5(b)(iv) of these Bylaws. The corporation may require any proposed nominee to furnish such other information as it may reasonably require to determine the eligibility of such proposed nominee to serve as a director of the corporation and to determine the independence (as such term is used in any applicable stock exchange listing requirements or applicable law) of such proposed nominee or to determine the eligibility of such proposed nominee to serve on any committee or subcommittee of the Board of Directors under any applicable stock exchange listing requirements or applicable law, or that the Board of Directors determines could be material to a reasonable stockholder's understanding of the background, qualifications, experience, independence, or lack thereof, of such proposed nominee. The number of nominees a stockholder may nominate for election at an annual meeting on its own behalf (or in the case of a stockholder giving the notice on behalf of a beneficial owner, the number of nominees a stockholder may nominate for election at an annual meeting on

behalf of such beneficial owner) shall not exceed the number of directors to be elected at such annual meeting. A stockholder may not designate any substitute nominees unless the stockholder provides timely notice of such substitute nominee(s) in accordance with this Section 5, in the case of an annual meeting, or Section 6, in the case of a special meeting (and such notice contains all of the information, representations, questionnaires and certifications with respect to such substitute nominee(s) that are required by the Bylaws with respect to nominees for director).

(ii) Other than proposals sought to be included in the corporation's proxy materials pursuant to Rule 14(a)-8 under the 1934 Act, for business other than nominations for the election to the Board of Directors to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of Section 5(a) of these Bylaws, the stockholder must deliver written notice to the Secretary at the principal executive offices of the corporation on a timely basis as set forth in Section 5(b)(iii) of these Bylaws, and must update and supplement such written notice on a timely basis as set forth in Section 5(c) of these Bylaws. Such stockholder's notice shall set forth: (A) as to each matter such stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the text of the proposal or business (including the text of any resolutions proposed for consideration and in the event that such business includes a proposal to amend the Bylaws, the language of the proposed amendment), the reasons for conducting such business at the meeting, and any material interest (including any anticipated benefit of such business to any Proponent (as defined below) other than solely as a result of its ownership of the corporation's capital stock, that is material to any Proponent individually, or to the Proponents in the aggregate) in such business of any Proponent; and (B) the information required by Section 5(b)(iv) of these Bylaws.

(iii) To be timely, the written notice required by Section 5(b)(i) or 5(b)(ii) of these Bylaws must be received by the Secretary at the principal executive offices of the corporation not later than the close of business on the 90th day nor earlier than the close of business on the 120th day prior to the first anniversary of the preceding year's annual meeting; *provided, however*, that, subject to the last sentence of this Section 5(b)(iii), in the event that the date of the annual meeting is advanced more than 30 days prior to or delayed by more than 70 days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be timely must be so received no earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the later of the 90th day prior to such annual meeting or the 10th day following the day on which public announcement of the date of such meeting is first made. In no event shall an adjournment or a postponement of an annual meeting (or the public announcement thereof) for which notice has been given, or for which a public announcement of the date of the meeting has been made by the corporation, commence a new time period (or extend any time period) for the giving of a stockholder's notice as described above.

(iv) The written notice required by Section 5(b)(i) or 5(b)(ii) of these Bylaws shall also set forth, as of the date of the notice and as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made and any affiliate who controls either of the foregoing stockholder or beneficial owner, directly or indirectly (each, a "**Proponent**" and collectively, the "**Proponents**"): (A) the name and address of each Proponent, including, if applicable, such name and address as they appear on the corporation's books and records; (B) the class, series and number of shares of each class or series of capital stock of the corporation that are, directly or indirectly, owned of record or beneficially (within the meaning of Rule 13-d under the 1934 Act) by each Proponent (provided, that for purposes of this Section 5(b)(iv), such Proponent shall in all events be deemed to beneficially own all shares of any class or series of capital stock of the corporation as to which such Proponent or any of its affiliates or associates has a right to acquire beneficial ownership at any time in the future); (C) a description

of any agreement, arrangement or understanding (whether oral or in writing) with respect to such nomination or proposal (and/or the voting of shares of any class or series of capital stock of the corporation) between or among any Proponent and any of its affiliates or associates, and/or any other persons (including their names) including without limitation any agreements, arrangements or understandings required to be disclosed pursuant to Item 5 or Item 6 of 1934 Act Schedule 13D, regardless of whether the requirement to file a Schedule 13D is applicable; (D) a representation that the stockholder is a holder of record of shares of the corporation at the time of giving notice, that such stockholder will be entitled to vote at the meeting, and that such stockholder (or a qualified representative thereof) intends to appear at the meeting to nominate the person or persons specified in the notice (with respect to a notice under Section 5(b)(i) of these Bylaws) or to propose the business that is specified in the notice (with respect to a notice under Section 5(b)(ii) of these Bylaws); (E) a representation whether any Proponent or any other participant (as defined in Item 4 of Schedule 14A under the 1934 Act) will engage in a solicitation with respect to such nomination or proposal and, if so, the name of each participant in such solicitation and the amount of the cost of solicitation that has been and will be borne, directly or indirectly, by each participant in such solicitation, and a representation as to whether the Proponents intend or are part of a group which intends (x) to deliver, or make available, a proxy statement and/or form of proxy to holders of at least the percentage of the corporation's voting shares required to approve or adopt the proposal or elect the nominee, (y) to otherwise solicit proxies or votes from stockholders in support of such proposal or nomination and/or (z) to solicit proxies in support of any proposed nominee in accordance with Rule 14a-19 promulgated under the 1934 Act; (F) to the extent known by any Proponent, the name and address of any other stockholder supporting the proposal on the date of such stockholder's notice; (G) a description of all Derivative Transactions (as defined below) by each Proponent during the previous 12 month period, including the date of the transactions and the class, series and number of securities involved in, and the material economic or voting terms of, such Derivative Transactions; (H) a certification regarding whether each Proponent has complied with all applicable federal, state and other legal requirements in connection with such Proponent's acquisition of shares of capital stock or other securities of the corporation and/or such Proponent's acts or omissions as a stockholder or beneficial owner of the corporation; and (I) any other information relating to each Proponent required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for, as applicable, the proposal and/or for the election of directors in an election contest pursuant to and in accordance with Section 14 of the 1934 Act and the rules and regulations promulgated thereunder.

For purposes of Sections 5 and 6 of these Bylaws, a "***Derivative Transaction***" means any agreement, arrangement, interest or understanding entered into by, or on behalf or for the benefit of, any Proponent or any of its affiliates or associates, whether record or beneficial:

- (w) the value of which is derived in whole or in part from the value of any class or series of shares or other securities of the corporation;
- (x) which otherwise provides any direct or indirect opportunity to gain or share in any gain derived from a change in the value of securities of the corporation;
- (y) the effect or intent of which is to mitigate loss, manage risk or benefit of security value or price changes; or
- (z) which provides the right to vote or increase or decrease the voting power of, such Proponent, or any of its affiliates or associates, with respect to any securities of the corporation,

which agreement, arrangement, interest or understanding may include, without limitation, any option, warrant, debt position, note, bond, convertible security, swap, stock appreciation right, short position, profit interest, hedge, right to dividends, voting agreement, performance-related fee or arrangement to borrow or lend shares (whether or not subject to payment, settlement, exercise or conversion in any such class or series), and any proportionate interest of such Proponent in the securities of the corporation held by any general or limited partnership, or any limited liability company, of which such Proponent is, directly or indirectly, a general partner or managing member.

(c) A stockholder providing written notice required by Section 5(b)(i) or (ii) of these Bylaws shall update and supplement such notice in writing, if necessary, so that the information provided or required to be provided in such notice is true and correct in all material respects as of (i) the record date for the determination of stockholders entitled to notice of the meeting and (ii) the date that is five business days prior to the meeting and, in the event of any adjournment or postponement thereof, five business days prior to such adjourned or postponed meeting; provided, that no such update or supplement shall cure or affect the accuracy (or inaccuracy) of any representations made by any Proponent, any of its affiliates or associates, or a nominee or the validity (or invalidity) of any nomination or proposal that failed to comply with this Section 5 or is rendered invalid as a result of any inaccuracy therein. In the case of an update and supplement pursuant to clause (i) of this Section 5(c), such update and supplement must be received by the Secretary at the principal executive offices of the corporation not later than five business days after the later of the record date for the determination of stockholders entitled to notice of the meeting or the public announcement of such record date. In the case of an update and supplement pursuant to clause (ii) of this Section 5(c), such update and supplement shall be received by the Secretary at the principal executive offices of the corporation not later than two business days prior to the date for the meeting, and, in the event of any adjournment or postponement thereof, two business days prior to such adjourned or postponed meeting.

(d) Notwithstanding anything in Section 5(b)(iii) of these Bylaws to the contrary, in the event that the number of directors in an Expiring Class (as defined below) is increased and there is no public announcement of the appointment of a director to such class, or, if no appointment was made, of the vacancy in such class, made by the corporation at least 10 days before the last day a stockholder may deliver a notice of nomination in accordance with Section 5(b)(iii) of these Bylaws, a stockholder's notice required by this Section 5 and which complies with the requirements in Section 5(b)(i) of these Bylaws, other than the timing requirements in Section 5(b)(iii) of these Bylaws, shall also be considered timely, but only with respect to nominees for any new positions in such Expiring Class created by such increase, if it shall be received by the Secretary at the principal executive offices of the corporation not later than the close of business on the 10th day following the day on which such public announcement is first made by the corporation. For purposes of this Section 5, an "**Expiring Class**" shall mean a class of directors whose term shall expire at the next annual meeting of stockholders.

(e) To be eligible to be a nominee for election or re-election as a director of the corporation pursuant to a nomination under clause (iii) of Section 5(a) or clause (ii) of Section 6(c), of these Bylaws, each Proponent must deliver (in accordance with the time periods prescribed for delivery of notice under Section 5(b)(iii), 5(d) or 6(c) of these Bylaws, as applicable) to the Secretary at the principal executive offices of the corporation a written questionnaire with respect to the background, qualifications, stock ownership and independence of such proposed nominee and the background of any other person or entity on whose behalf the nomination is being made (in the form provided by the Secretary within 10 days following written request therefor by a stockholder of record) and a written representation and agreement (in the form provided by the Secretary within 10 days following written request therefor by a stockholder of record) that such person (i) is not and will

not become a party to (A) any agreement, arrangement or understanding (whether oral or in writing) with, and has not given any commitment or assurance to, any person or entity as to how such person, if elected as a director of the corporation, will act or vote on any issue or question (a “**Voting Commitment**”) that has not been disclosed to the corporation in the questionnaire or (B) any Voting Commitment that could limit or interfere with such person’s ability to comply, if elected as a director of the corporation, with such person’s fiduciary duties under applicable law; (ii) is not and will not become a party to any agreement, arrangement or understanding (whether oral or in writing) with any person or entity other than the corporation with respect to any direct or indirect compensation, reimbursement or indemnification in connection with service or action as a director of the corporation that has not been disclosed in such questionnaire; (iii) would be in compliance, if elected as a director of the corporation, and will comply with, all applicable publicly disclosed corporate governance, conflict of interest, confidentiality and stock ownership and trading policies and guidelines of the corporation; and (iv) if elected as a director of the corporation, intends to serve the entire term until the next meeting at which such candidate would face re-election.

(f) A person shall not be eligible for election or re-election as a director unless the person is nominated, in the case of an annual meeting in accordance with clause (ii) or (iii) of Section 5(a) of these Bylaws, and in accordance with the procedures set out in Section 5(b), Section 5(c), Section 5(d), Section 5(e) and Section 5(f) of these Bylaws, as applicable, or in the case of a special meeting, in accordance with Section 6(c) of these Bylaws and the requirements thereof. Only such business shall be conducted at any annual meeting of the stockholders of the corporation as shall have been brought before the meeting in accordance with Section 5(a) of these Bylaws and in accordance with the procedures set forth in Section 5(b), Section 5(c) and Section 5(f) of these Bylaws, as applicable. Notwithstanding anything to the contrary in the Bylaws, unless otherwise required by applicable law, in the event that any Proponent (i) provides notice pursuant to Rule 14a-19(b) promulgated under the 1934 Act with respect to one or more proposed nominees and (ii) subsequently (x) fails to comply with the requirements of Rule 14a-19 promulgated under the 1934 Act (or fails to timely provide reasonable evidence sufficient to satisfy the corporation that such Proponent has met the requirements of Rule 14a-19(a)(3) promulgated under the 1934 Act in accordance with the next sentence) or (y) fails to inform the corporation that they no longer plan to solicit proxies in accordance with the requirements of Rule 14a-19 under the 1934 Act by delivering a written notice to the Secretary at the principal executive offices of the corporation within two business days after the occurrence of such change, then the nomination of each such proposed nominee shall be disregarded (and such nominee disqualified from standing for election or re-election), notwithstanding that the nominee is included (as applicable) as a nominee in the corporation’s proxy statement, notice of meeting or other proxy materials for any stockholder meeting (or any supplement thereto) and notwithstanding that proxies or votes in respect of the election of such proposed nominees may have been received by the corporation (which proxies and votes shall be disregarded). If any Proponent provides notice pursuant to Rule 14a-19(b) promulgated under the 1934 Act, such Proponent shall deliver to the corporation, no later than five business days prior to the applicable meeting, reasonable evidence that it has met the requirements of Rule 14a-19(a)(3) promulgated under the 1934 Act. Notwithstanding anything to the contrary set forth herein, and for the avoidance of doubt, the nomination of any person whose name is included (as applicable) as a nominee in the corporation’s proxy statement, notice of meeting or other proxy materials for any stockholder meeting (or any supplement thereto) as a result of any notice provided by any Proponent pursuant to Rule 14a-19(b) promulgated under the 1934 Act with respect to such proposed nominee and whose nomination is not made by or at the direction of the Board of Directors or any authorized committee thereof shall not be deemed (for purposes of clause (i) of Section 5(a) of these Bylaws or otherwise) to have been made pursuant to the corporation’s notice of meeting (or any supplement thereto) and any such nominee may only be nominated by a Proponent pursuant to clause (iii) of Section 5(a) of these Bylaws and, in the case of a special meeting of stockholders, pursuant to and to

the extent permitted under Section 6(c) of these Bylaws. Except as otherwise required by law, the chairman of the meeting shall have the power and duty to determine whether a nomination or any business proposed to be brought before the meeting was made, or proposed, as the case may be, in accordance with the procedures and requirements set forth in these Bylaws (including, without limitation, compliance with Rule 14a-19 promulgated under the 1934 Act) and, if any proposed nomination or business is not in compliance with these Bylaws, or the Proponent does not act in accordance with the representations required in this Section 5 of these Bylaws, to declare that such proposal or nomination shall not be presented for stockholder action at the meeting and shall be disregarded (and such nominee disqualified from standing for election or re-election), or that such business shall not be transacted, notwithstanding that such proposal or nomination is set forth in (as applicable) the corporation's proxy statement, notice of meeting or other proxy materials and notwithstanding that proxies or votes in respect of such nomination or such business may have been solicited or received. Notwithstanding the foregoing provisions of this Section 5, unless otherwise required by applicable law, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual meeting of stockholders of the corporation to present a nomination or proposed business, such nomination shall be disregarded (and such nominee disqualified from standing for election or re-election) and such proposed business shall not be transacted, notwithstanding that such nomination or proposed business is set forth in (as applicable) the corporation's proxy statement, notice of meeting or other proxy materials and notwithstanding that proxies or votes in respect of such vote may have been solicited or received by the corporation. For purposes of this Section 5, to be considered a qualified representative of the stockholder, a person must be a duly authorized officer, manager, trustee or partner of such stockholder or must be authorized by a writing executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the meeting of stockholders, and such writing or electronic transmission, or a reliable reproduction of such writing or electronic transmission, shall be provided to the Secretary of the corporation at least five business days prior to the meeting of stockholders.

(g) Notwithstanding the foregoing provisions of this Section 5, in order to include information with respect to a stockholder proposal in the proxy statement and form of proxy for a stockholders' meeting, a stockholder must also comply with all applicable requirements of the 1934 Act and the rules and regulations thereunder. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation's proxy statement pursuant to Rule 14a-8 under the 1934 Act; *provided, however*, that any references in these Bylaws to the 1934 Act or the rules and regulations thereunder are not intended to and shall not limit the requirements applicable to proposals and/or nominations to be considered pursuant to Section 5(a)(iii) of these Bylaws.

(h) For purposes of Sections 5 and 6 of these Bylaws,

(i) "**public announcement**" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the 1934 Act or by such other means reasonably designed to inform the public or security holders in general of such information, including, without limitation, posting on the corporation's investor relations website; and

(ii) "**affiliates**" and "**associates**" shall have the meanings set forth in Rule 405 under the Securities Act of 1933, as amended (the "**1933 Act**").

Section 6. Special Meetings.

(a) Special meetings of the stockholders of the corporation may be called, for any purpose as is a proper matter for stockholder action under Delaware law, by (i) the Chairman of the Board of Directors, (ii) the Chief Executive Officer, or (iii) the Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exist any vacancies in previously authorized directorships at the time any such resolution is presented to the Board of Directors for adoption). Any special meeting of stockholders previously scheduled by the Board of Directors may be postponed, rescheduled or cancelled by the Board of Directors, or any director or officer to whom the Board of Directors has delegated such authority, at any time before or after notice of such meeting has been given to stockholders.

(b) The Board of Directors shall determine the time and place, if any, of such special meeting. Upon determination of the time and place, if any, of the meeting, the Secretary shall cause a notice of meeting to be given to the stockholders entitled to vote, in accordance with the provisions of Section 7 of these Bylaws. No business may be transacted at such special meeting otherwise than specified in the notice of meeting.

(c) Nominations of persons for election to the Board of Directors may be made at a special meeting of stockholders at which directors are to be elected (i) by or at the direction of the Board of Directors or (ii) by any stockholder of the corporation who is a stockholder of record at the time of giving notice provided for in this paragraph and who is a stockholder of record at the time of the special meeting, who is entitled to vote at the meeting and who complies with Sections 5(b)(i), 5(b)(iv), 5(c), 5(e) and 5(f) of these Bylaws. The number of nominees a stockholder may nominate for election at a special meeting on its own behalf (or in the case of a stockholder giving the notice on behalf of a beneficial owner, the number of nominees a stockholder may nominate for election at a special meeting on behalf of such beneficial owner) shall not exceed the number of directors to be elected at such special meeting. In the event the corporation calls a special meeting of stockholders for the purpose of electing one or more directors to the Board of Directors, any such stockholder of record entitled to vote in such election of directors may nominate a person or persons (as the case may be), for election to such position(s) as specified in the corporation's notice of meeting, if written notice setting forth the information required by Section 5(b)(i) of these Bylaws shall be received by the Secretary at the principal executive offices of the corporation not earlier than the 120th day prior to such special meeting and not later than the close of business on the later of (i) the 90th day prior to such meeting or (ii) the 10th day following the day on which public announcement is first made of the date of the special meeting and of the nominees proposed by the Board of Directors to be elected at such meeting. The stockholder shall also update and supplement such information as required under Section 5(c) of these Bylaws. In no event shall an adjournment or a postponement of a special meeting for which notice has been given, or the public announcement thereof has been made, commence a new time period (or extend any time period) for the giving of a stockholder's notice as described above.

(d) A person shall not be eligible for election or re-election as a director at the special meeting unless the person is nominated either in accordance with clause (i) or clause (ii) of Section 6(c) of these Bylaws. Except as otherwise required by applicable law, the chairperson of the meeting shall have the power and duty to determine whether a nomination was made in accordance with the procedures and requirements set forth in the Bylaws and, if any proposed nomination is not in compliance with the Bylaws (including, without limitation, compliance with Rule 14a-19 under the 1934 Act), or if the Proponent does not act in accordance with the representations required in Section 5 of these Bylaws, to declare that such nomination shall not be presented for stockholder action at the meeting and shall be disregarded (and such nominee disqualified from standing for

election or re-election), notwithstanding that such nomination is set forth in (as applicable) the corporation's proxy statement, notice of meeting or other proxy materials and notwithstanding that proxies or votes in respect of such nomination may have been solicited or received. Notwithstanding the foregoing provisions of this Section 6 of these Bylaws, unless otherwise required by applicable law, if the stockholder (or a qualified representative of the stockholder (meeting the requirements specified in Section 5(f) of these Bylaws) does not appear at the special meeting of stockholders of the Corporation to present a nomination, such nomination shall be disregarded (and such nominee disqualified from standing for election or re-election), notwithstanding that the nomination is set forth (as applicable) in the Corporation's proxy statement, notice of meeting or other proxy materials and notwithstanding that proxies or votes in respect of such nomination may have been solicited or received by the Corporation.

(e) Notwithstanding the foregoing provisions of this Section 6, a stockholder must also comply with all applicable requirements of the 1934 Act and the rules and regulations thereunder with respect to matters set forth in this Section 6. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation's proxy statement pursuant to Rule 14a-8 under the 1934 Act; *provided, however*, that any references in these Bylaws to the 1934 Act or the rules and regulations thereunder are not intended to and shall not limit the requirements applicable to nominations for the election to the Board of Directors to be considered pursuant to Section 6(c) of these Bylaws.

Section 7. Notice of Meetings. Except as otherwise provided by applicable law, the Certificate of Incorporation or the Bylaws, notice of each meeting of stockholders shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting as of the record date for determining the stockholders entitled to notice of such meeting. Such notice shall specify the date, time and place, if any, of the meeting, the record date for determining stockholders entitled to vote at the meeting, if such record date is different from the record date for determining stockholders entitled to notice of the meeting, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at any such meeting, and, in the case of special meetings, the purpose or purposes of the meeting.

Section 8. Quorum. At all meetings of stockholders, except where otherwise provided by statute or by the corporation's Amended and Restated Certificate of Incorporation ("*Certificate of Incorporation*"), or by these Bylaws, the presence, in person, by remote communication, if applicable, or by proxy duly authorized, of the holders of a majority of the outstanding shares of stock entitled to vote shall constitute a quorum for the transaction of business. In the absence of a quorum, any meeting of stockholders may be adjourned, from time to time, either by the chairman of the meeting or by vote of the holders of a majority of the shares represented thereat, but no other business shall be transacted at such meeting. The stockholders present at a duly called or convened meeting, at which a quorum is present, may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum. Except as otherwise provided by statute or by applicable stock exchange rules, or by the Certificate of Incorporation or these Bylaws, in all matters other than the election of directors, the affirmative vote of the majority of shares present in person, by remote communication, if applicable, or represented by proxy at the meeting and entitled to vote generally on the subject matter shall be the act of the stockholders. Except as otherwise provided by statute, the Certificate of Incorporation or these Bylaws, directors shall be elected by a plurality of the votes of the shares present in person, by remote communication, if applicable, or represented by proxy at the meeting and entitled to vote generally on the election of directors. Where a separate vote by a class or classes or series is required, except where otherwise provided by the statute or by the Certificate of Incorporation or these Bylaws, a

majority of the outstanding shares of such class or classes or series, present in person, by remote communication, if applicable, or represented by proxy duly authorized, shall constitute a quorum entitled to take action with respect to that vote on that matter. Except where otherwise provided by statute or by the Certificate of Incorporation or these Bylaws, the affirmative vote of the majority (plurality, in the case of the election of directors) of shares of such class or classes or series present in person, by remote communication, if applicable, or represented by proxy at the meeting shall be the act of such class or classes or series.

Section 9. Adjournment and Notice of Adjourned Meetings. Any meeting of stockholders, whether annual or special, may be adjourned from time to time either by the chairman of the meeting or by the stockholders by the affirmative vote of a majority of the votes cast, voting affirmatively or negatively (excluding abstentions and broker non-votes). When a meeting is adjourned to another time or place, if any, (including an adjournment taken to address a technical failure to convene or continue a meeting using remote communication) notice need not be given of the adjourned meeting if the time and place, if any, thereof and the means of remote communication, if any, by which stockholders and proxyholders may be deemed present in person and may vote at such meeting are announced at the meeting at which the adjournment is taken or are (i) displayed, during the time scheduled for the meeting, on the same electronic network used to enable stockholders and proxy holders to participate in the meeting by means of remote communication or (ii) set forth in the notice of meeting given in accordance with Section 7. At the adjourned meeting, the corporation may transact any business that might have been transacted at the original meeting. If the adjournment is for more than 30 days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for determination of stockholders entitled to vote is fixed for the adjourned meeting, the Board of Directors shall fix as the record date for determining stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote at the adjourned meeting, and shall give notice of the adjourned meeting to each stockholder of record entitled to vote at such adjourned meeting as of the record date so fixed for notice of such adjourned meeting.

Section 10. Voting Rights. For the purpose of determining those stockholders entitled to vote at any meeting of the stockholders or adjournment thereof, except as otherwise provided by applicable law, only persons in whose names shares stand on the stock records of the corporation on the record date, as provided in Section 12 of these Bylaws, shall be entitled to vote at any meeting of stockholders. Every person entitled to vote shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in accordance with Delaware law. An agent so appointed need not be a stockholder. No proxy shall be voted after three years from its date of creation unless the proxy provides for a longer period. Voting at meetings of stockholders need not be by written ballot. Any stockholder directly or indirectly soliciting proxies from other stockholders must use a proxy card color other than white, which shall be reserved for the exclusive use of the Board of Directors.

Section 11. Joint Owners of Stock. If shares or other securities having voting power stand of record in the names of two or more persons, whether fiduciaries, members of a partnership, joint tenants, tenants in common, tenants by the entirety, or otherwise, or if two or more persons have the same fiduciary relationship respecting the same shares, unless the Secretary is given written notice to the contrary and is furnished with a copy of the instrument or order appointing them or creating the relationship wherein it is so provided, their acts with respect to voting shall have the following effect: (a) if only one votes, his act binds all; (b) if more than one votes, the act of the majority so voting binds all; or (c) if more than one votes, but the vote is evenly split on any particular matter, each faction may vote the securities in question proportionally, or may apply to the Delaware Court

of Chancery for relief as provided in the DGCL, Section 217(b). If the instrument filed with the Secretary shows that any such tenancy is held in unequal interests, a majority or even-split for the purpose of clause (c) of this Section 11 shall be a majority or even- split in interest.

Section 12. List of Stockholders. The corporation shall prepare, no later than the 10th day before each meeting of stockholders, a complete list of the stockholders entitled to vote at said meeting, arranged in alphabetical order, showing the address of each stockholder and the number of shares registered in the name of each stockholder; provided, however, if the record date for determining the stockholders entitled to vote is less than 10 days before the meeting date, the list shall reflect all of the stockholders entitled to vote as of the tenth day before the meeting date. Nothing in this Section 12 shall require the corporation to include electronic mail addresses or other electronic contact information on such list. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, for a period of ten days ending on the day before the meeting date: (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during ordinary business hours, at the principal place of business of the corporation. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation.

Section 13. Action Without Meeting. No action shall be taken by the stockholders except at an annual or special meeting of stockholders called in accordance with these Bylaws, and no action shall be taken by the stockholders by written consent or electronic transmission.

Section 14. Delivery to the Corporation. Whenever Section 5 or Section 6 of these Bylaws requires one or more persons (including a record or beneficial owner of capital stock) to deliver a document or information to the corporation or any officer, employee or agent thereof (including any notice, request, questionnaire, revocation, representation or other document or agreement), such document or information shall be in writing exclusively (and not in an electronic transmission) and shall be delivered exclusively by hand (including, without limitation, overnight courier service) or by certified or registered mail, return receipt requested and the corporation shall not be required to accept delivery of any document not in such written form or so delivered.

Section 15. Organization.

(a) At every meeting of stockholders, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the President, or, if the President is absent, a chairman of the meeting chosen by a majority in interest of the stockholders entitled to vote, present in person or by proxy, shall act as chairman. The Secretary, or, in his or her absence, an Assistant Secretary directed to do so by the President, shall act as secretary of the meeting.

(b) The Board of Directors of the corporation shall be entitled to make such rules or regulations for the conduct of meetings of stockholders as it shall deem necessary, appropriate or convenient. Subject to such rules and regulations of the Board of Directors, if any, the chairman of the meeting shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are necessary, appropriate or convenient for the proper conduct of the meeting, including, without limitation, establishing an agenda or order of business for the meeting, rules and procedures for maintaining order at the meeting and the safety of those present, limitations on participation in such meeting to stockholders of record of the corporation and their duly authorized and constituted proxies and such other persons as the chairman shall permit, restrictions on entry to the meeting after the time fixed for the commencement thereof, limitations on the time allotted to questions or comments by participants and regulation of the opening and

closing of the polls for balloting on matters which are to be voted on by ballot. The date and time of the opening and closing of the polls for each matter upon which the stockholders will vote at the meeting shall be announced at the meeting. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure.

ARTICLE IV

DIRECTORS

Section 16. Number and Term of Office. The authorized number of directors of the corporation shall be fixed in accordance with the Certificate of Incorporation. Directors need not be stockholders unless so required by the Certificate of Incorporation. If for any cause, the directors shall not have been elected at an annual meeting, they may be elected as soon thereafter as convenient at a special meeting of the stockholders called for that purpose in the manner provided in these Bylaws.

Section 17. Powers. The business and affairs of the corporation shall be managed by or under the direction of the Board of Directors, except as may be otherwise provided by statute or by the Certificate of Incorporation.

Section 18. Classes of Directors. Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, the directors shall be divided into three classes designated as Class I, Class II and Class III, respectively. The Board of Directors is authorized to assign members of the Board of Directors already in office to such classes at the time the classification becomes effective. At the first annual meeting of stockholders following the initial classification of the Board of Directors, the term of office of the Class I directors shall expire and Class I directors shall be elected for a full term of three years. At the second annual meeting of stockholders following such initial classification, the term of office of the Class II directors shall expire and Class II directors shall be elected for a full term of three years. At the third annual meeting of stockholders following such initial classification, the term of office of the Class III directors shall expire and Class III directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting.

Notwithstanding the foregoing provisions of this Section 18, each director shall serve until his or her successor is duly elected and qualified or until his or her earlier death, resignation or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

Section 19. Vacancies. Unless otherwise provided in the Certificate of Incorporation, and subject to the rights of the holders of any series of Preferred Stock, any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board of Directors, or by a sole remaining director, and not by the stockholders, *provided, however*, that whenever the holders of any class or classes of stock or series thereof are entitled to elect one or more directors by the provisions of the Certificate of Incorporation, vacancies and newly created directorships of such class or classes or series shall, unless the Board of Directors determines by resolution that any such vacancies or newly created

directorships shall be filled by stockholders, be filled by a majority of the directors elected by such class or classes or series thereof then in office, or by a sole remaining director so elected, and not by the stockholders. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified. A vacancy in the Board of Directors shall be deemed to exist under this Bylaw in the case of the death, removal or resignation of any director.

Section 20. Resignation. Any director may resign at any time by delivering his or her notice in writing or by electronic transmission to the Secretary, such resignation to specify whether it will be effective at a particular time. If no such specification is made, it shall be deemed effective at the time of delivery to the Secretary. When one or more directors shall resign from the Board of Directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each director so chosen shall hold office for the unexpired portion of the term of the director whose place shall be vacated and until his successor shall have been duly elected and qualified.

Section 21. Removal.

(a) Subject to the rights of any series of Preferred Stock to elect additional directors under specified circumstances, neither the Board of Directors nor any individual director may be removed without cause.

(b) Subject to any limitation imposed by law, any individual director or directors may be removed with cause by the affirmative vote of the holders of at least 66 2/3% of the voting power of all then outstanding shares of capital stock of the corporation entitled to vote generally at an election of directors.

Section 22. Meetings.

(a) **Regular Meetings.** Unless otherwise restricted by the Certificate of Incorporation, regular meetings of the Board of Directors may be held at any time or date and at any place within or without the State of Delaware which has been designated by the Board of Directors and publicized among all directors, either orally or in writing, by telephone, including a voice-messaging system or other system designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means. No further notice shall be required for regular meetings of the Board of Directors.

(b) **Special Meetings.** Unless otherwise restricted by the Certificate of Incorporation, special meetings of the Board of Directors may be held at any time and place within or without the State of Delaware whenever called by the Chairman of the Board, the Chief Executive Officer or a majority of the authorized number of directors.

(c) **Meetings by Electronic Communications Equipment.** Any member of the Board of Directors, or of any committee thereof, may participate in a meeting by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting by such means shall constitute presence in person at such meeting.

(d) **Notice of Special Meetings.** Notice of the time and place of all special meetings of the Board of Directors shall be orally or in writing, by telephone, including a voice

messaging system or other system or technology designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means, during normal business hours, at least 24 hours before the date and time of the meeting. If notice is sent by U.S. mail, it shall be sent by first class mail, charges prepaid, at least three days before the date of the meeting. Notice of any meeting may be waived in writing, or by electronic transmission, at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends the 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.

(e) **Waiver of Notice.** The transaction of all business at any meeting of the Board of Directors, or any committee thereof, however called or noticed, or wherever held, shall be as valid as though it had been transacted at a meeting duly held after regular call and notice, if a quorum be present and if, either before or after the meeting, each of the directors not present who did not receive notice shall sign a written waiver of notice or shall waive notice by electronic transmission. All such waivers shall be filed with the corporate records or made a part of the minutes of the meeting.

Section 23. Quorum and Voting.

(a) Unless the Certificate of Incorporation requires a greater number, and except with respect to questions related to indemnification arising under Section 46 of these Bylaws for which a quorum shall be one-third of the exact number of directors fixed from time to time, a quorum of the Board of Directors shall consist of a majority of the exact number of directors fixed from time to time by the Board of Directors in accordance with the Certificate of Incorporation; *provided, however*, at any meeting whether a quorum be present or otherwise, a majority of the directors present may adjourn from time to time until the time fixed for the next regular meeting of the Board of Directors, without notice other than by announcement at the meeting.

(b) At each meeting of the Board of Directors at which a quorum is present, all questions and business shall be determined by the affirmative vote of a majority of the directors present, unless a different vote be required by law, the Certificate of Incorporation or these Bylaws.

Section 24. Action Without Meeting. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent thereto in writing or by electronic transmission, and such writing or writings or transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

Section 25. Fees and Compensation. Directors shall be entitled to such compensation for their services as may be approved by the Board of Directors, including, if so approved, by resolution of the Board of Directors, a fixed sum and expenses of attendance, if any, for attendance at each regular or special meeting of the Board of Directors and at any meeting of a committee of the Board of Directors. Nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity as an officer, agent, employee, or otherwise and receiving compensation therefor.

Section 26. Committees.

(a) **Executive Committee.** The Board of Directors may appoint an Executive Committee to consist of one or more members of the Board of Directors. The Executive Committee,

to the extent permitted by law and provided in the resolution of the Board of Directors shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it; but no such committee shall have the power or authority in reference to (i) approving or adopting, or recommending to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopting, amending or repealing any Bylaw of the corporation.

(b) Other Committees. The Board of Directors may, from time to time, appoint such other committees as may be permitted by law. Such other committees appointed by the Board of Directors shall consist of one or more members of the Board of Directors and shall have such powers and perform such duties as may be prescribed by the resolution or resolutions creating such committees, but in no event shall any such committee have the powers denied to the Executive Committee in these Bylaws.

(c) Term. The Board of Directors, subject to any requirements of any outstanding series of Preferred Stock and the provisions of subsections (a) or (b) of this Section 26, may at any time increase or decrease the number of members of a committee or terminate the existence of a committee. The membership of a committee member shall terminate on the date of his death or voluntary resignation from the committee or from the Board of Directors. The Board of Directors may at any time for any reason remove any individual committee member and the Board of Directors may fill any committee vacancy created by death, resignation, removal or increase in the number of members of the committee. 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, and, in addition, in the absence or disqualification of any member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

(d) Meetings. Unless the Board of Directors shall otherwise provide, regular meetings of the Executive Committee or any other committee appointed pursuant to this Section 26 shall be held at such times and places as are determined by the Board of Directors, or by any such committee, and when notice thereof has been given to each member of such committee, no further notice of such regular meetings need be given thereafter. Special meetings of any such committee may be held at any place which has been determined from time to time by such committee, and may be called by any director who is a member of such committee, upon notice to the members of such committee of the time and place of such special meeting given in the manner provided for the giving of notice to members of the Board of Directors of the time and place of special meetings of the Board of Directors. Notice of any special meeting of any committee may be waived in writing or by electronic transmission at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends such special 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. Unless otherwise provided by the Board of Directors in the resolutions authorizing the creation of the committee, a majority of the authorized number of members of any such committee shall constitute a quorum for the transaction of business, and the act of a majority of those present at any meeting at which a quorum is present shall be the act of such committee.

Section 27. Duties of Chairman of the Board of Directors. Although the appointment of a Chairman is not required, if appointed and when present, the Chairman of the Board of Directors shall preside at all meetings of the stockholders and the Board of Directors. The Chairman of the

Board of Directors shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

Section 28. Lead Independent Director. The Chairman of the Board of Directors, or if the Chairman is not appointed, is not present, or is not an independent director, one of the independent directors, may be designated by the Board of Directors as lead independent director (“*Lead Independent Director*”) to serve until replaced by the Board of Directors. The Lead Independent Director will: with the Chairman of the Board of Directors, if one is appointed, establish the agenda for regular Board meetings and serve as chairman of Board of Directors meetings in the absence of the Chairman of the Board of Directors; establish the agenda for meetings of the independent directors; coordinate with the committee chairs regarding meeting agendas and informational requirements; preside over meetings of the independent directors; preside over any portions of meetings of the Board of Directors at which the performance of the Board of Directors is presented or discussed; and perform such other duties as may be established or delegated by the Chairman of the Board of Directors.

Section 29. Organization. At every meeting of the directors, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the Lead Independent Director, or if the Lead Independent Director is absent, the Chief Executive Officer (if a director), or, if a Chief Executive Officer is absent, the President (if a director), or if the President is absent, the most senior Vice President (if a director), or, in the absence of any such person, a chairman of the meeting chosen by a majority of the directors present, shall preside over the meeting. The Secretary, or in his absence, any other officer, director or other person directed to do so by the Chairman, shall act as secretary of the meeting.

ARTICLE V

OFFICERS

Section 30. Officers Designated. The officers of the corporation shall include, if and when designated by the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer, the President, one or more Vice Presidents, the Secretary, the Chief Financial Officer and the Treasurer. The Board of Directors may also appoint one or more Assistant Secretaries and Assistant Treasurers and such other officers and agents with such powers and duties as it shall deem necessary. The Board of Directors may assign such additional titles to one or more of the officers as it shall deem appropriate. Any one person may hold any number of offices of the corporation at any one time unless specifically prohibited therefrom by law. The salaries and other compensation of the officers of the corporation shall be fixed by or in the manner designated by the Board of Directors.

Section 31. Tenure and Duties of Officers.

(a) **General.** All officers shall hold office at the pleasure of the Board of Directors and until their successors shall have been duly elected and qualified, unless sooner removed. Any officer elected or appointed by the Board of Directors may be removed at any time by the Board of Directors. If the office of any officer becomes vacant for any reason, the vacancy may be filled by the Board of Directors.

(b) **Duties of Chief Executive Officer.** The Chief Executive Officer shall preside at all meetings of the stockholders and at all meetings of the Board of Directors, unless the Chairman of the Board of Directors or the Lead Independent Director has been appointed and is present. Unless an officer has been appointed Chief Executive Officer of the corporation, the President shall be the

Chief Executive Officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. To the extent that a Chief Executive Officer has been appointed and no President has been appointed, all references in these Bylaws to the President shall be deemed references to the Chief Executive Officer. The Chief Executive Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(c) Duties of President. The President shall preside at all meetings of the stockholders and at all meetings of the Board of Directors, unless the Chairman of the Board of Directors, the Lead Independent Director, or the Chief Executive Officer has been appointed and is present. Unless another officer has been appointed Chief Executive Officer of the corporation, the President shall be the Chief Executive Officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. The President shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(d) Duties of Vice Presidents. The Vice Presidents may assume and perform the duties of the President in the absence or disability of the President or whenever the office of President is vacant. The Vice Presidents shall perform other duties commonly incident to their office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or, if the Chief Executive Officer has not been appointed or is absent, the President shall designate from time to time.

(e) Duties of Secretary. The Secretary shall attend all meetings of the stockholders and of the Board of Directors and shall record all acts and proceedings thereof in the minute book of the corporation. The Secretary shall give notice in conformity with these Bylaws of all meetings of the stockholders and of all meetings of the Board of Directors and any committee thereof requiring notice. The Secretary shall perform all other duties provided for in these Bylaws and other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time. The President may direct any Assistant Secretary or other officer to assume and perform the duties of the Secretary in the absence or disability of the Secretary, and each Assistant Secretary shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(f) Duties of Chief Financial Officer. The Chief Financial Officer shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the President. The Chief Financial Officer, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the corporation. The Chief Financial Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time. To the extent that a Chief Financial Officer has been appointed and no Treasurer has been appointed, all references in these Bylaws to the Treasurer shall be deemed references to the Chief Financial Officer. The President may direct the Treasurer, if any, or any Assistant Treasurer, or the Controller or any Assistant Controller to assume and perform the duties of the Chief Financial Officer in the absence or disability of the Chief Financial Officer, and each Treasurer and Assistant Treasurer and each Controller and Assistant Controller shall perform other duties commonly incident

to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(g) Duties of Treasurer. Unless another officer has been appointed Chief Financial Officer of the corporation, the Treasurer shall be the chief financial officer of the corporation and shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the President, and, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the corporation. The Treasurer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

Section 32. Delegation of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

Section 33. Resignations. Any officer may resign at any time by giving notice in writing or by electronic transmission to the Board of Directors or to the President or to the Secretary. Any such resignation shall be effective when received by the person or persons to whom such notice is given, unless a later time is specified therein, in which event the resignation shall become effective at such later time. Unless otherwise specified in such notice, the acceptance of any such resignation shall not be necessary to make it effective. Any resignation shall be without prejudice to the rights, if any, of the corporation under any contract with the resigning officer.

Section 34. Removal. Any officer may be removed from office at any time, either with or without cause, by the affirmative vote of a majority of the directors in office at the time, or by the unanimous written consent of the directors in office at the time, or by any committee or by the Chief Executive Officer or by other superior officers upon whom such power of removal may have been conferred by the Board of Directors.

ARTICLE VI

EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION

Section 35. Execution of Corporate Instruments. The Board of Directors may, in its discretion, determine the method and designate the signatory officer or officers, or other person or persons, to execute, sign or endorse on behalf of the corporation any corporate instrument or document, or to sign on behalf of the corporation the corporate name without limitation, or to enter into contracts on behalf of the corporation, except where otherwise provided by applicable law or these Bylaws, and such execution or signature shall be binding upon the corporation.

All checks and drafts drawn on banks or other depositories on funds to the credit of the corporation or in special accounts of the corporation shall be signed by such person or persons as the Board of Directors shall from time to time authorize so to do.

Unless otherwise specifically determined by the Board of Directors or otherwise required by applicable law, the execution, signing or endorsement of any corporate instrument or document by or on behalf of the corporation may be effected manually, by facsimile or (to the extent not prohibited by applicable law and subject to such policies and procedures as the corporation may have in effect from time to time) by electronic signature.

Unless authorized or ratified by the Board of Directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

Section 36. Voting of Securities Owned by the Corporation. All stock and other securities of other corporations owned or held by the corporation for itself, or for other parties in any capacity, shall be voted, and all proxies with respect thereto shall be executed, by the person authorized so to do by resolution of the Board of Directors, or, in the absence of such authorization, by the Chairman of the Board of Directors, the Chief Executive Officer, the President, or any Vice President.

ARTICLE VII SHARES OF STOCK

Section 37. Form and Execution of Certificates. The shares of the corporation shall be represented by certificates, or shall be uncertificated if so provided by resolution or resolutions of the Board of Directors. Certificates for the shares of stock of the corporation, if any, shall be in such form as is consistent with the Certificate of Incorporation and applicable law. Every holder of stock in the corporation represented by certificates shall be entitled to have a certificate signed by or in the name of the corporation by any two authorized officers of the corporation (including, without limitation, the Chairman of the Board of Directors, the Chief Executive Officer, the President, the Chief Financial Officer, the Treasurer, any Assistant Treasurer, the Secretary, and any Assistant Secretary), certifying the number, and the class or series, of shares owned by such holder in the corporation in certificated form. Any or all of the signatures on the certificate may be facsimiles. In case any officer, transfer agent, or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued with the same effect as if he were such officer, transfer agent, or registrar at the date of issue.

Section 38. Lost Certificates. The corporation may issue a new certificate or certificates or uncertificated shares in place of any certificate or certificates theretofore issued by the corporation alleged to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen, or destroyed. The corporation may require, as a condition precedent to the issuance of a new certificate or certificates, the owner of such lost, stolen, or destroyed certificate or certificates, or the owner's legal representative, to give the corporation a bond (or other adequate security) sufficient to indemnify the corporation against any claim that may be made against the corporation with respect to the certificate alleged to have been lost, stolen, or destroyed or the issuance of such new certificate(s) or uncertificated shares.

Section 39. Transfers.

(a) Transfers of record of shares of stock of the corporation shall be made only upon its books by the holders thereof, in person or by attorney duly authorized, and, in the case of stock represented by certificate, upon the surrender of a properly endorsed certificate or certificates for a like number of shares.

(b) The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict

the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

Section 40. Fixing Record Dates.

(a) In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall, subject to applicable law, not be more than 60 nor less than 10 days before the date of such meeting. If the Board of Directors so fixes a record date for determining the stockholders entitled to notice of any meeting of stockholders, such date shall also be the record date for determining the stockholders entitled to vote at such meeting, unless the Board of Directors determines, at the time it fixes the record date for determining the stockholders entitled to notice of such meeting, that a later date on or before the date of the meeting shall be the record date for determining the stockholders entitled to vote at such meeting. If no record date is fixed by the Board of Directors, 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. 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 determining the stockholders entitled to vote at the adjourned meeting, and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determining the stockholders entitled to vote in accordance with the provisions of this Section 40(a).

(b) In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than 60 days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating to such action.

Section 41. Registered Stockholders. The corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VIII

OTHER SECURITIES OF THE CORPORATION

Section 42. Execution of Other Securities. All bonds, debentures and other corporate securities of the corporation, other than stock certificates (covered in Section 37 of these Bylaws), may be signed by the Chairman of the Board of Directors, the Chief Executive Officer, the President or any Vice President, or such other person as may be authorized by the Board of Directors, and the corporate seal impressed thereon or a facsimile of such seal imprinted thereon and attested by the signature of the Secretary or an Assistant Secretary, or the Chief Financial Officer or Treasurer or an Assistant Treasurer; *provided, however*, that where any such bond, debenture or other corporate security shall be authenticated by the manual signature, or where permissible facsimile signature, of a trustee under an indenture pursuant to which such bond, debenture or other corporate security shall

be issued, the signatures of the persons signing and attesting the corporate seal on such bond, debenture or other corporate security may be the imprinted facsimile of the signatures of such persons. Interest coupons appertaining to any such bond, debenture or other corporate security, authenticated by a trustee as aforesaid, shall be signed by the Treasurer or an Assistant Treasurer of the corporation or such other person as may be authorized by the Board of Directors, or bear imprinted thereon the facsimile signature of such person. In case any officer who shall have signed or attested any bond, debenture or other corporate security, or whose facsimile signature shall appear thereon or on any such interest coupon, shall have ceased to be such officer before the bond, debenture or other corporate security so signed or attested shall have been delivered, such bond, debenture or other corporate security nevertheless may be adopted by the corporation and issued and delivered as though the person who signed the same or whose facsimile signature shall have been used thereon had not ceased to be such officer of the corporation.

ARTICLE IX

DIVIDENDS

Section 43. Declaration of Dividends. Dividends upon the capital stock of the corporation, subject to the provisions of the Certificate of Incorporation and applicable law, if any, may be declared by the Board of Directors pursuant to law at any regular or special meeting. Dividends may be paid in cash, in property, or in shares of the capital stock, subject to the provisions of the Certificate of Incorporation and applicable law.

Section 44. Dividend Reserve. Before payment of any dividend, there may be set aside out of any funds of the corporation available for dividends such sum or sums as the Board of Directors from time to time, in their absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the corporation, or for such other purpose as the Board of Directors shall think conducive to the interests of the corporation, and the Board of Directors may modify or abolish any such reserve in the manner in which it was created.

ARTICLE X

FISCAL YEAR

Section 45. Fiscal Year. The fiscal year of the corporation shall be fixed by resolution of the Board of Directors.

ARTICLE XI

INDEMNIFICATION

Section 46. Indemnification of Directors, Officers, Employees and Other Agents.

(a) **Directors and Officers.** The corporation shall indemnify its directors and officers to the extent not prohibited by the DGCL or any other applicable law; *provided, however*, that the corporation may modify the extent of such indemnification by individual contracts with its directors and officers; and, *provided, further*, that the corporation shall not be required to indemnify any director or officer in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized by the Board of Directors of the corporation, (iii) such indemnification is provided by the

corporation, in its sole discretion, pursuant to the powers vested in the corporation under the DGCL or any other applicable law or (iv) such indemnification is required to be made under subsection (d).

(b) Employees and Other Agents. The corporation shall have power to indemnify its employees and other agents as set forth in the DGCL or any other applicable law. The Board of Directors shall have the power to delegate the determination of whether indemnification shall be given to any such person (except for officers) or other persons as the Board of Directors shall determine.

(c) Expenses. The corporation shall advance to any 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 a director or officer, of the corporation, or is or was serving at the request of the corporation as a director or officer of another corporation, partnership, joint venture, trust or other enterprise, prior to the final disposition of the proceeding, promptly following request therefor, all expenses incurred by any director or officer in connection with such proceeding provided, however, that if the DGCL requires, an advancement of expenses incurred by a director or officer in his or her capacity as a director or officer (and not in any other capacity in which service was or is rendered by such indemnitee, including, without limitation, service to an employee benefit plan) shall be made only upon delivery to the corporation of an undertaking (hereinafter an “*undertaking*”), by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal (hereinafter a “*final adjudication*”) that such indemnitee is not entitled to be indemnified for such expenses under this Section 46 or otherwise.

Notwithstanding the foregoing, unless otherwise determined pursuant to paragraph (e) of this Section 46, no advance shall be made by the corporation to an officer of the corporation (except by reason of the fact that such officer is or was a director of the corporation in which event this paragraph shall not apply) in any action, suit or proceeding, whether civil, criminal, administrative or investigative, if a determination is reasonably and promptly made (i) by a majority vote of directors who were not parties to the proceeding, even if not a quorum, or (ii) by a committee of such directors designated by a majority vote of such directors, even though less than a quorum, or (iii) if there are no such directors, or such directors so direct, by independent legal counsel in a written opinion, that the facts known to the decision-making party at the time such determination is made demonstrate clearly and convincingly that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation.

(d) Enforcement. Without the necessity of entering into an express contract, all rights to indemnification and advances to directors and officers under this Section 46 shall be deemed to be contractual rights and be effective to the same extent and as if provided for in a contract between the corporation and the director or officer. Any right to indemnification or advances granted by this Section 46 to a director or officer shall be enforceable by or on behalf of the person holding such right in any court of competent jurisdiction if (i) the claim for indemnification or advances is denied, in whole or in part, or (ii) no disposition of such claim is made within 90 days of request therefor. To the extent permitted by law, the claimant in such enforcement action, if successful in whole or in part, shall be entitled to be paid also the expense of prosecuting the claim. In connection with any claim for indemnification, the corporation shall be entitled to raise as a defense to any such action that the claimant has not met the standards of conduct that make it permissible under the DGCL or any other applicable law for the corporation to indemnify the claimant for the amount claimed. In connection with any claim by an officer of the corporation (except in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such officer is or

was a director of the corporation) for advances, the corporation shall be entitled to raise a defense as to any such action clear and convincing evidence that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation, or with respect to any criminal action or proceeding that such person acted without reasonable cause to believe that his conduct was lawful. Neither the failure of the corporation (including its Board of Directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because the director or officer has met the applicable standard of conduct set forth in the DGCL or any other applicable law, nor an actual determination by the corporation (including its Board of Directors, independent legal counsel or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that claimant has not met the applicable standard of conduct. In any suit brought by a director or officer to enforce a right to indemnification or to an advancement of expenses hereunder, the burden of proving that the director or officer is not entitled to be indemnified, or to such advancement of expenses, under this Section 46 or otherwise shall be on the corporation.

(e) **Non-Exclusivity of Rights.** The rights conferred on any person by this Bylaw shall not be exclusive of any other right which such person may have or hereafter acquire under any applicable statute, provision of the Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding office. The corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advances, to the fullest extent not prohibited by the DGCL, or by any other applicable law.

(f) **Survival of Rights.** The rights conferred on any person by this Bylaw shall continue as to a person who has ceased to be a director or officer, or, if applicable, employee or other agent, and shall inure to the benefit of the heirs, executors and administrators of such a person.

(g) **Insurance.** To the fullest extent permitted by the DGCL or any other applicable law, the corporation, upon approval by the Board of Directors, may purchase insurance on behalf of any person required or permitted to be indemnified pursuant to this Section 46.

(h) **Amendments.** Any repeal or modification of this Section 46 shall only be prospective and shall not affect the rights under this Bylaw in effect at the time of the alleged occurrence of any action or omission to act that is the cause of any proceeding against any agent of the corporation.

(i) **Saving Clause.** If this Bylaw or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the corporation shall nevertheless indemnify each director and officer to the full extent not prohibited by any applicable portion of this Section 46 that shall not have been invalidated, or by any other applicable law. If this Section 46 shall be invalid due to the application of the indemnification provisions of another jurisdiction, then the corporation shall indemnify each director and officer to the full extent under any other applicable law.

(j) **Certain Definitions.** For the purposes of this Bylaw, the following definitions shall apply:

(i) The term "*proceeding*" shall be broadly construed and shall include, without limitation, the investigation, preparation, prosecution, defense, settlement, arbitration and

appeal of, and the giving of testimony in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative.

(ii) The term “*expenses*” shall be broadly construed and shall include, without limitation, court costs, attorneys’ fees, witness fees, fines, amounts paid in settlement or judgment and any other costs and expenses of any nature or kind incurred in connection with any proceeding.

(iii) The term the “*corporation*” shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Section 46 with respect to the resulting or surviving corporation as he would have with respect to such constituent corporation if its separate existence had continued.

(iv) References to a “*director*,” “*officer*,” “*employee*,” or “*agent*” of the corporation shall include, without limitation, situations where such person is serving at the request of the corporation as, respectively, a director, officer, employee, trustee or agent of another corporation, partnership, joint venture, trust or other enterprise.

(v) References to “*other enterprises*” shall include employee benefit plans; references to “*fines*” shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to “*servicing at the request of the corporation*” shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner “*not opposed to the best interests of the corporation*” as referred to in this Section 46.

ARTICLE XII

NOTICES

Section 47. Notices.

(a) **Notice to Stockholders.** Notice to stockholders of stockholder meetings shall be given as provided in Section 7 of these Bylaws. Without limiting the manner by which notice may otherwise be given effectively to stockholders under any agreement or contract with such stockholder, and except as otherwise required by applicable law, written notice to stockholders for purposes other than stockholder meetings may be sent by U.S. mail or courier service, facsimile or by electronic mail or other means of electronic transmission in accordance with Section 232 of the DGCL.

(b) **Notice to Directors.** Any notice required to be given to any director may be given by the method stated in subsection (a), or as otherwise provided in these Bylaws, with notice other than one that is delivered personally to be sent to such address or electronic mail address as such director shall have filed in writing with the Secretary, or, in the absence of such filing, to the last known address or electronic mail address of such director.

(c) **Affidavit of Mailing.** An affidavit of notice, executed by a duly authorized and competent employee of the corporation or its transfer agent appointed with respect to the class of stock affected, or other agent, specifying the name and address or the names and addresses of the stockholder or stockholders, or director or directors, to whom any such notice or notices was or were given, and the time and method of giving the same, shall in the absence of fraud, be prima facie evidence of the facts therein contained.

(d) **Methods of Notice.** It shall not be necessary that the same method of giving notice be employed in respect of all recipients of notice, but one permissible method may be employed in respect of any one or more, and any other permissible method or methods may be employed in respect of any other or others.

(e) **Notice to Person With Whom Communication is Unlawful.** Whenever notice is required to be given, under any provision of law or of the Certificate of Incorporation or Bylaws of the corporation, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under any provision of the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

(f) **Notice to Stockholders Sharing an Address.** Except as otherwise prohibited under the DGCL, any notice given under the provisions of the DGCL, the Certificate of Incorporation or the Bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Such consent shall have been deemed to have been given if such stockholder fails to object in writing to the corporation within 60 days of having been given notice by the corporation of its intention to send the single notice. Any consent shall be revocable by the stockholder by written notice to the corporation.

ARTICLE XIII

AMENDMENTS

Section 48. Amendments. Subject to the limitations set forth in Section 46(h) of these Bylaws or the provisions of the Certificate of Incorporation, the Board of Directors is expressly empowered to adopt, amend or repeal the Bylaws of the corporation. Any adoption, amendment or repeal of the Bylaws of the corporation by the Board of Directors shall require the approval of a majority of the authorized number of directors. The stockholders also shall have power to adopt, amend or repeal the Bylaws of the corporation; *provided, however,* that, in addition to any vote of the holders of any class or series of stock of the corporation required by law or by the Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of the capital stock of the corporation entitled to vote generally in the election of directors, voting together as a single class.

ARTICLE XIV

LOANS TO OFFICERS OR EMPLOYEES

Section 49. Loans to Officers or Employees. Except as otherwise prohibited by applicable law, the corporation may lend money to, or guarantee any obligation of, or otherwise assist any

officer or other employee of the corporation or of its subsidiaries, including any officer or employee who is a director of the corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the corporation. The loan, guarantee, or other assistance may be with or without interest and may be unsecured, or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the corporation. Nothing in these Bylaws shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the corporation at common law or under any statute.

ARTICLE XV

MISCELLANEOUS

Section 50. Forum.

(a) Unless the corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, if and only if the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, any state court located within the State of Delaware or, if and only if all such state courts lack subject matter jurisdiction, the federal district court for the District of Delaware) and any appellate court therefrom shall be the sole and exclusive forum for the following state, statutory and common law claims or causes of action: (A) any derivative claim or cause of action brought on behalf of the corporation; (B) any claim or cause of action for breach of a fiduciary duty owed by any current or former director, officer or other employee of the corporation, to the corporation or the corporation's stockholders; (C) any claim or cause of action against the corporation or any current or former director, officer or other employee of the corporation, arising out of or pursuant to any provision of the DGCL, the Certificate of Incorporation or these Bylaws (as each may be amended from time to time); (D) any claim or cause of action seeking to interpret, apply, enforce or determine the validity of the Certificate of Incorporation or these Bylaws (as each may be amended from time to time, including any right, obligation, or remedy thereunder); (E) any claim or cause of action as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware; and (F) any claim or cause of action against the corporation or any current or former director, officer or other employee of the corporation, governed by the internal-affairs doctrine, in all cases to the fullest extent permitted by law and subject to the court having personal jurisdiction over the indispensable parties named as defendants. This Section 50 of Article XV shall not apply to claims or causes of action brought to enforce a duty or liability created by the 1933 Act or the 1934 Act, or any other claim for which the federal courts have exclusive jurisdiction.

(b) Unless the corporation consents in writing to the selection of an alternative forum, to the fullest extent permitted by law, the federal district courts of the United States of America shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the 1933 Act.

(c) Any person or entity holding, owning or otherwise acquiring any interest in any security of the corporation shall be deemed to have notice of and consented to the provisions of these Bylaws.

NON-VOTING COMMON STOCK PURCHASE AGREEMENT

This Non-Voting Common Stock Purchase Agreement (this “*Agreement*”) is made as of March 26, 2024 by and between Longboard Pharmaceuticals, Inc., a Delaware corporation (the “*Company*”), and Farallon Healthcare Partners Master, L.P., a Cayman Islands exempted limited partnership (“*Purchaser*”).

WHEREAS, subject to the terms and conditions set forth in this Agreement and pursuant to Section 4(a)(2) of the Securities Act of 1933, as amended (the “*Securities Act*”), the Company desires to issue and sell to Purchaser, and Purchaser desires to purchase from the Company, shares of Non-Voting Common Stock of the Company, par value \$0.0001 per share (“*Stock*”), as more fully described in this Agreement.

NOW, THEREFORE, in consideration of the mutual promises and covenants and the terms set forth herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1.Purchase and Sale of Stock. Purchaser agrees to purchase from the Company, and the Company agrees to sell to Purchaser, 2,850,000 shares of Stock (the “*Shares*”) at a purchase price equal to the greater of (i) \$21.00 or (ii) the closing selling price for the Company’s Voting Common Stock as quoted on the Nasdaq on the last day preceding the date of this Agreement for which such quotation exists, per Share, for an aggregate purchase price of \$59,850,000 (the “*Aggregate Purchase Price*”). The closing of the transactions contemplated by this Agreement (the “*Closing*”), including payment for and delivery of the Shares, will take place as soon as reasonably practicable after the date hereof but no later than March 29, 2024 (the date on which the Closing actually occurs, the “*Closing Date*”) and will occur remotely via the electronic exchange of documents and signatures. At the Closing, (i) Purchaser will pay to an account designated by the Company, by wire transfer of immediately available funds, the Aggregate Purchase Price and (ii) the Company will issue a stock certificate or book entry evidencing the Shares to Purchaser.

2.Company Representations. The Company hereby makes the following representations and warranties to Purchaser:

(a) **Organization and Qualification.** The Company has been duly incorporated, is validly existing as a corporation in good standing under the laws of the jurisdiction of its incorporation, has the corporate power and authority to own its property and to conduct its business as described in the reports, schedules, forms, statements and other documents required to be filed by it with the Securities and Exchange Commission (“*SEC*”), pursuant to the reporting requirements of the Securities Exchange Act of 1934, as amended (the “*Exchange Act*”) (all of the foregoing filed since January 1, 2023 and all exhibits included therein and financial statements and schedules thereto and documents (other than exhibits) incorporated by reference therein, the “*SEC Reports*”) and is duly qualified to transact business and is in good standing in each jurisdiction in which the conduct of its business or its ownership or leasing of property requires such qualification, except to the extent that the failure to be so qualified or be in good standing would not reasonably be expected to result in: (i) a material adverse effect on the legality, validity or enforceability of this Agreement, (ii) a material adverse effect on the results of operations, assets, business or condition (financial or otherwise) of the Company, or (iii) a material adverse effect on the Company’s ability to perform in any material respect on a timely basis its obligations under this Agreement (any of (i), (ii) or (iii), a “*Material Adverse Effect*”).

(b) **Authorization of Shares.** The Shares and the shares of Voting Common Stock of the Company, par value \$0.0001 per share (“*Common Stock*”), issuable upon conversion of the Shares (the “*Conversion Shares*” and together with the Shares, the “*Securities*”), have been duly authorized and, when

issued and delivered in accordance with the terms of this Agreement and, with respect to the Conversion Shares, the Company's Certificate of Incorporation, will be validly issued, fully paid and non-assessable, and the issuance of the Shares and Conversion Shares will not be subject to any preemptive or similar rights of stockholders of the Company.

(c) Authorization and Execution of Agreement. This Agreement has been duly authorized, executed and delivered by the Company. The Company has all requisite corporate power and authority to execute, deliver and perform its obligations under this Agreement. Upon the execution and delivery of this Agreement, this Agreement shall constitute a valid and binding obligation of the Company enforceable in accordance with its terms, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' and contracting parties' rights generally and except as enforceability may be subject to general principles of equity and except as rights to indemnity and contribution may be limited by state or federal securities laws or public policy underlying such laws.

(d) No Conflicts. The Company is not (i) in violation of its charter, bylaws or similar incorporation or organizational documents or (ii) in violation or default in the performance or observance of any obligation, agreement, covenant or condition contained in any contract, indenture, mortgage, deed of trust, loan or credit agreement, note, lease or other agreement or instrument to which the Company is a party or by which it may be bound, or to which any of the property or assets of the Company is subject (collectively, "**Agreements and Instruments**"), or (iii) in violation of or in default under any statute, law, rule, ordinance or regulation of any governmental instrumentality, except in the case of clauses (ii) and (iii), for such violations and defaults that would not result in a Material Adverse Effect; and the execution, delivery and performance of this Agreement and the consummation of the transactions contemplated in this Agreement, and compliance by the Company with its obligations under this Agreement, do not and will not, whether with or without the giving of notice or passage of time or both, conflict with, violate, or result in a breach of any of the terms and provisions of, or constitute a default or Repayment Event (as defined below) under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to, the Agreements and Instruments, nor will such action result in any violation of the provisions of the charter, bylaws or similar organizational documents of the Company or any applicable law, statute, rule, regulation, judgment, order, writ or decree of any government, government instrumentality or court, domestic or foreign, having jurisdiction over the Company or any of its assets, properties or operations, except in each case (other than with respect to such charter, bylaws or similar organizational documents of the Company) for such conflicts, violations, breaches or defaults which would not reasonably be expected to result in a Material Adverse Effect. As used herein, a "**Repayment Event**" means any event or condition which gives the holder of any note, debenture or other evidence of indebtedness that is material to the operations or financial results of the Company (or any person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company.

(e) Absence of Further Requirements. No filing with, or authorization, approval, consent, license, order, registration, exemption, qualification or decree of, any court or governmental authority or agency or any sub-division thereof is required for the performance by the Company of its obligations hereunder, in connection with the offering, issuance or sale of the Shares under this Agreement or the consummation of the transactions contemplated by this Agreement, except such as have been already obtained or as may be required under the Securities Act or the rules and regulations of the SEC thereunder, state securities or blue sky laws, or Nasdaq.

(f) SEC Reports; Financial Statements. The Company has timely filed the SEC Reports required to be filed by it with the SEC since January 1, 2023, pursuant to the reporting requirements of the Exchange Act. As of the date of its filing (or, if amended or superseded by a later filing made prior to the date of this Agreement, than as of the date of such later filing), each SEC Report (i) complied in all material

respects with the requirements of the Exchange Act or the Securities Act, as the case may be, and the rules and regulations of the SEC promulgated thereunder applicable to the SEC Reports, and (ii) did not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The financial statements included in the SEC Reports, together with the related schedules and notes, present fairly, in all material respects, the financial position of the Company at the dates indicated and the statement of operations, stockholders' equity and cash flows of the Company for the periods specified; said financial statements have been prepared in conformity with United States generally accepted accounting principles ("**GAAP**") applied on a consistent basis throughout the periods involved except, in the case of unaudited interim financial statements, for normal year-end audit adjustments and the exclusion of footnotes. The summary financial information included in the SEC Reports present fairly, in all material respects, the information shown therein and have been compiled on a basis consistent in all material respects with that of the audited financial statements included in the SEC Reports. Except as set forth in the SEC Reports, there are no off-balance sheet arrangements, outstanding guarantees or other contingent obligations of the Company that would reasonably be expected to have a Material Adverse Effect on the Company.

(g) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the SEC Reports, except as specifically disclosed in a subsequent SEC Report filed prior to the date hereof: (i) there has been no event, occurrence or development that has had or that could reasonably be expected to result in a Material Adverse Effect, (ii) the Company has not incurred any liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice and (B) liabilities not required to be reflected in the Company's financial statements pursuant to GAAP or disclosed in filings made with the SEC, (iii) the Company has not altered its method of accounting, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its stockholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock and (v) the Company has not issued any equity securities to any officer, director or affiliate of the Company, except pursuant to existing Company stock option plans. Except for the issuance of the Shares contemplated by this Agreement, no event, liability, fact, circumstance, occurrence or development has occurred or exists with respect to the Company or its businesses, prospects, properties, operations, assets or financial condition that would be required to be disclosed by the Company under applicable securities laws at the time this representation is made that has not been publicly disclosed prior to the date that this representation is made.

(h) Litigation. There is no action, suit, proceeding or investigation pending or, to the Company's knowledge, currently threatened against the Company, any of its subsidiaries or any of their respective directors and officers that questions the validity of this Agreement or the right of the Company to enter into this Agreement or to consummate the transactions contemplated hereby. There is no action, suit, proceeding or investigation pending or, to the Company's knowledge, currently threatened against the Company or any of its subsidiaries or any of their respective directors and officers which would, if there were an unfavorable decision, reasonably be expected to have, either individually or in the aggregate, a Material Adverse Effect.

(i) No Placement Agent Fees. No person or entity will have, as a result of the transactions contemplated by this Agreement, any valid right, interest or claim against or upon the Company or a Purchaser for any commission, fee or other compensation pursuant to any agreement, arrangement or understanding entered into by or on behalf of the Company.

(j) Not an Investment Company. The Company is not, and will not be, immediately after receipt of payment for the Shares, required to register as an "investment company" under the Investment Company Act of 1940, as amended.

(k) Disclosure. The Company confirms that it has not provided, and none of its officers or directors nor any other person acting on its or their behalf has provided, the Purchaser or its agents or counsel with any information that it believes constitutes material, non-public information except insofar as the existence, provisions and terms of this Agreement and the proposed transactions hereunder may constitute such information, all of which will be disclosed by the Company as contemplated by Section 5(a) hereof. The Company understands and acknowledges that the Purchaser will rely on the foregoing representations in effecting transactions in securities of the Company.

(l) Listing. The Common Stock is registered pursuant to Section 12(b) or Section 12(g) of the Exchange Act and is listed for trading on the Nasdaq Stock Market, and the Company has taken no action designed to terminate the registration of the Common Stock under the Exchange Act, nor has the Company received any notification that the SEC Commission or the Nasdaq Stock Market is contemplating terminating such registration or listing. The Company is, and immediately following the Closing will be, in compliance with all applicable listing requirements of the Nasdaq Stock Market.

(m) Outstanding Shares. As of March 22, 2024, the Company had outstanding 33,596,494 shares of Voting Common Stock and 2,420,755 shares of Non-Voting Common Stock.

3. Investment Representations. In connection with the purchase of the Shares, Purchaser represents to the Company the following:

(a) Purchaser is purchasing the Securities for its own account and not with a present view toward the public sale or distribution thereof and has no intention of selling or distributing any of such Securities or any arrangement or understanding with any other person or entity regarding the sale or distribution of the Securities except as would not result in a violation of the Securities Act. Purchaser will not, directly or indirectly, offer, sell, pledge, transfer or otherwise dispose of (or solicit any offers to buy, purchase or otherwise acquire or take a pledge of) any of the Securities except in accordance with the Securities Act.

(b) Purchaser understands that the Securities have not been registered under the Securities Act by reason of a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of Purchaser's investment intent as expressed in this Agreement.

(c) Purchaser further acknowledges and understands that the Securities must be held indefinitely unless the Securities are subsequently registered under the Securities Act or an exemption from such registration is available. Purchaser further acknowledges and understands that the Company is under no obligation to register the Securities. Purchaser understands that the certificate evidencing the Securities will be imprinted with a legend that prohibits the transfer of the Securities unless the Securities are registered, such registration is not required in the opinion of counsel for the Company, or the Securities are sold or transferred pursuant to Rule 144 under the Securities Act. Purchaser is familiar with the provisions of Rule 144 under the Securities Act as in effect from time to time, that, in substance, permits limited public resale of "restricted securities" acquired, directly or indirectly, from the issuer of such securities (or from an affiliate of such issuer), in a non-public offering subject to the satisfaction of certain conditions. Purchaser further understands that at the time Purchaser wishes to sell the Securities there may be no public market upon which to make such a sale, and that, even if such a public market then exists, the Company may not be satisfying the current public information requirements of Rule 144, and that, in such event, Purchaser may be precluded from selling the Securities under Rule 144 even if the minimum holding period requirement had been satisfied.

(d) Purchaser further warrants and represents that Purchaser (i) is an "accredited investor" within the meaning of Rule 501 of the Securities Act and (ii) has the capacity to protect Purchaser's own

interests in connection with the purchase of the Shares by virtue of the business or financial expertise of Purchaser. Purchaser has been furnished with all relevant materials relating to the business, finances and operations of the Company necessary to make an investment decision, and materials relating to the offer and sale of the Securities, that have been requested by Purchaser, including, without limitation, the SEC Reports, and Purchaser has had the opportunity to review the SEC Reports. Purchaser has been afforded the opportunity to ask questions of the Company. Neither such inquiries nor any other investigation conducted by or on behalf of such Purchaser or its representatives or counsel shall modify, amend or affect such Purchaser's right to rely on the truth, accuracy and completeness of the SEC Reports and the Company's representations and warranties contained in the Agreement.

(e) Purchaser acknowledges Purchaser has had an opportunity to consult Purchaser's own tax, legal and financial advisors regarding the purchase of the Shares under this Agreement.

(f) Purchaser acknowledges and agrees that in making the decision to purchase the Shares under this Agreement, Purchaser has not relied on any statement, whether written or oral, regarding the subject matter of this Agreement, other than the SEC Reports and such representations, warranties, and covenants of the Company as are expressly provided in this Agreement.

(g) Purchaser has the requisite power and authority to enter into this Agreement and to consummate the transactions contemplated hereby. Purchaser has taken all necessary action to authorize the execution, delivery and performance of this Agreement. Upon the execution and delivery of this Agreement, this Agreement shall constitute a valid and binding obligation of Purchaser enforceable in accordance with its terms, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' and contracting parties' rights generally and except as enforceability may be subject to general principles of equity and except as rights to indemnity and contribution may be limited by state or federal securities laws or public policy underlying such laws.

(h) If Purchaser is not a United States person (as defined by Section 7701(a)(30) of the Internal Revenue Code of 1986, as amended), Purchaser has satisfied itself as to the full observance of the laws of its jurisdiction in connection with any invitation to subscribe for the Shares or any use of this Agreement, including (i) the legal requirements within its jurisdiction for the purchase of the Shares, (ii) any foreign exchange restrictions applicable to such purchase, (iii) any governmental or other consents that may need to be obtained and (iv) the income tax and other tax consequences, if any, that may be relevant to the purchase, holding, redemption, sale, or transfer of the Shares. Purchaser's subscription and payment for and continued beneficial ownership of the Shares will not violate any applicable securities or other laws of Purchaser's jurisdiction.

4.Restrictive Legends. All certificates representing the Securities will have endorsed thereon legends in substantially the following forms:

"THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED WITH THE U.S. SECURITIES AND EXCHANGE COMMISSION, OR THE SECURITIES COMMISSION OF ANY STATE UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO (I) AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT, (II) AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS, AS EVIDENCED BY A LEGAL OPINION OF COUNSEL SELECTED BY THE HOLDER TO SUCH EFFECT, THE SUBSTANCE OF WHICH SHALL BE REASONABLY ACCEPTABLE TO THE COMPANY, OR (III) RULE 144 UNDER THE SECURITIES ACT."

Any legend required by applicable blue sky laws.

Purchaser may request that the Company remove, and the Company agrees to authorize the removal of any legend from any Shares or Conversion Shares issued to such Purchaser (i) following any sale, or certification by Purchaser of the expected sale, of such Shares or Conversion Shares pursuant to Rule 144 under the Securities Act, or (ii) if such Shares or Conversion Shares are eligible for sale under Rule 144 under the Securities Act following the expiration of the one-year holding requirement under subparagraphs (b)(1)(i) and (d) thereof and Purchaser is not an affiliate of the Company, in each case, following receipt from Purchaser of an appropriate certification to such effect.

5. Covenants.

(a) **Securities Law Disclosure.** Not later than 9:00 a.m. New York City time on the first business day following the Closing Date, the Company shall issue a press release or file a Current Report on Form 8-K (the “*Disclosure Document*”) describing the material terms of the transactions contemplated by this Agreement. The Company hereby represents and warrants that from and after the issuance of the Disclosure Document, none of the Purchaser and its affiliates and representatives shall be in possession of any material, nonpublic information received from the Company or any of its officers, directors, or employees or agents, that is not disclosed in the Disclosure Document.

(b) **Reservation of Common Stock.** The Company shall reserve and keep available at all times during which the Shares remain convertible, free of preemptive rights, a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue the Conversion Shares pursuant to the Company’s Certificate of Incorporation.

(c) **Nasdaq Qualification.** Promptly following the Closing, the Company shall cause the Conversion Shares to be duly authorized for listing by the Nasdaq Stock Market, subject to official notice of issuance, to the extent required by the rules of the Nasdaq Stock Market.

(d) **Expenses.** Each of the Company and Purchaser shall be liable for, and will pay, its own expenses incurred in connection with the negotiation, preparation, execution and delivery of this Agreement, including, without limitation, attorneys’ and consultants’ fees and expenses.

(e) **Ownership.** Purchaser agrees that neither Purchaser, nor any of its affiliates who are required to aggregate beneficial ownership with Purchaser for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder (“*Section 13 affiliates*”), shall beneficially own more than 19.99% of the Voting Common Stock, calculated as if all shares of Non-Voting Common Stock held by Purchaser and its Section 13 affiliates may be converted without regard to the Beneficial Ownership Limitation (as defined in the Company’s Amended and Restated Certificate of Incorporation in effect as of the date hereof). The foregoing restriction shall lapse at such time as Purchaser and its Section 13 affiliates beneficially own less than 10.00% of the Voting Common Stock, calculated in the manner specified in the preceding sentence.

6. Miscellaneous.

(a) **Notices.** All notices required or permitted hereunder will be in writing and will be deemed effectively given: (i) upon personal delivery to the party to be notified; (ii) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient, and if not sent during normal business hours of the recipient, then on the next business day; (iii) five calendar days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (iv) one business day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written

verification of receipt. All communications will be sent to the other party to this Agreement at such party's address set forth on the signature page hereof, or at such other address as such party may designate by 10 days' advance written notice to the other party hereto.

(b) Successors and Assigns. This Agreement is binding upon and inures to the benefit of the parties and their successors and assigns. The Company will not assign this Agreement or any rights or obligations hereunder without the prior written consent of Purchaser, and Purchaser may not assign this Agreement or any rights or obligations hereunder without the prior written consent of the Company.

(c) Third Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and their respective permitted successors and assigns, and is not for the benefit of, nor may any provision hereof be enforced by, any other person or entity.

(d) Attorneys' Fees. The prevailing party in any suit or action hereunder will be entitled to recover from the losing party all costs incurred by it in enforcing the performance of, or protecting its rights under, any part of this Agreement, including reasonable costs of investigation and attorneys' fees.

(e) Governing Law; Venue. This Agreement will be governed by and construed in accordance with the laws of the State of Delaware. The parties agree that any action brought by either party to interpret or enforce any provision of this Agreement will be brought in, and each party agrees to, and does hereby, submit to the jurisdiction and venue of, the appropriate state or federal court in the State of Delaware.

(f) Further Execution. The parties agree to take all such further actions as may reasonably be necessary to carry out and consummate this Agreement as soon as practicable.

(g) Specific Enforcement. Each party acknowledges and agrees that each party hereto will be irreparably damaged in the event any of the provisions of this Agreement are not performed by the parties in accordance with their specific terms or are otherwise breached. Accordingly, it is agreed that, in addition to any other remedies available at law or in equity, each of the Company and the Purchaser shall be entitled to an injunction to prevent breaches of this Agreement, and to specific enforcement of this Agreement and its terms and provisions in any action instituted in any court having jurisdiction, in each case without proof of actual damages and without a requirement to secure or post any bond in connection therewith.

(h) Construction. The parties agree that each of them and/or their respective counsel have reviewed and had an opportunity to revise this Agreement and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement or any amendments hereto.

(i) Entire Agreement; Amendment. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes and merges all prior agreements or understandings, whether written or oral, with respect to the subject matter hereof. This Agreement may not be amended, modified or revoked, in whole or in part, except by an agreement in writing signed by each of the parties hereto.

(j) Severability. If one or more provisions of this Agreement are held to be unenforceable under applicable law, the parties agree to renegotiate such provision in good faith. In the event that the parties cannot reach a mutually agreeable and enforceable replacement for such provision, then (i) such provision will be excluded from this Agreement, (ii) the balance of the Agreement will be interpreted as if such provision were so excluded and (iii) the balance of the Agreement will be enforceable in accordance with its terms.

(k) Waiver of Conflicts. Purchaser acknowledges that Cooley LLP, outside counsel to the Company, may have in the past performed and may now or in the future represent Purchaser or its affiliates in matters unrelated to the transactions contemplated by this Agreement (the "**Financing**"), including representation of Purchaser or its affiliates in matters of a similar nature to the Financing. The applicable rules of professional conduct require that Cooley LLP inform Purchaser of this representation and obtain their consent. Cooley LLP has served as outside general counsel to the Company and has negotiated the terms of the Financing solely on behalf of the Company. Purchaser hereby (a) acknowledges that it has had an opportunity to ask for and have obtained information relevant to such representation, including disclosure of the reasonably foreseeable adverse consequences of such representation; (b) acknowledges that with respect to the Financing, Cooley LLP has represented solely the Company, and not Purchaser or any stockholder, member, director, or employee of Purchaser; and (c) gives its informed consent to Cooley LLP's representation of the Company in the Financing.

(l) Counterparts. This Agreement (including any schedules and/or exhibits hereto or thereto) may be executed in counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal E-SIGN Act of 2000, Uniform Electronic Transactions Act or other applicable law) or other transmission method and any counterpart so delivered will be deemed to have been duly and validly delivered and be valid and effective for all purposes.

[Signature page follows]

**CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Kevin R. Lind, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Longboard Pharmaceuticals, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 2, 2024

By: _____

/s/ Kevin R. Lind

Kevin R. Lind

President and Chief Executive Officer
(Principal Executive Officer)

**CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Brandi L. Roberts, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Longboard Pharmaceuticals, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal controls over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 2, 2024

By:

/s/ Brandi L. Roberts

Brandi L. Roberts

Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report of Longboard Pharmaceuticals, Inc. (the “Company”) on Form 10-Q for the three months ended March 31, 2024, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: May 2, 2024

By: _____
/s/ Kevin R. Lind
Kevin R. Lind
President and Chief Executive Officer
(Principal Executive Officer)

Date: May 2, 2024

By: _____
/s/ Brandi L. Roberts
Brandi L. Roberts
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)
