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

Form 10-Q

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

For the quarterly period ended June 30, 2017

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: 001-36544

Sage Therapeutics, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**27-4486580**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

215 First Street
Cambridge, Massachusetts 02142
(Address of principal executive office) (Zip Code)

Registrant's telephone number, including area code: (617) 299-8380

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes ☒ No ☐

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☐
Emerging Growth Company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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 July 31, 2017, there were 37,441,084 shares of the registrant's Common Stock, $0.0001 par value per share, outstanding.

Cautionary Note Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q, or Quarterly Report, contains forward-looking statements that involve 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. In some cases, you can identify forward-looking statements by terminology such as “may”, “will”, “should”, “expects”, “intends”, “plans”, “anticipates”, “believes”, “estimates”, “predicts”, “potential”, “continue” or the negative of these terms or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- our plans to develop and commercialize our product candidates in the central nervous system, or CNS, disorders we discuss in this Quarterly Report, and potentially in other indications;
- our ability, within the expected timeframes, to complete our ongoing clinical trials and non-clinical studies; to announce the results of such studies and trials; to advance our product candidates into additional clinical trials, including pivotal clinical trials; and to successfully complete such clinical trials;
- our expectations as to the sufficiency of the planned clinical development programs for our product candidates, if successful, to support regulatory approval; our plans with respect to filing for regulatory approval of our product candidates, if clinical development is successful; and the anticipated review path and potential to obtain regulatory approval and to commercialize any product, if approved;
- our estimates regarding expenses; use of cash; timing of future cash needs; and capital requirements;
- our potential to achieve future revenues;
- our expectations with respect to the availability of supplies of our product candidates, and the expected performance of our third-party manufacturers;
- our expectations with respect to the performance of our contract research organizations and other third parties whose activities are important to our development and future commercialization efforts;
- our ability to obtain and maintain intellectual property protection for our proprietary assets and other forms of exclusivity relevant to our business;
- the estimated number of patients in indications of interest to us; the potential for our product candidates in those indications, if approved; the size of the potential markets for our product candidates; and our ability to serve those markets;
- the anticipated rate and degree of market acceptance, and expectations regarding the availability and level of reimbursement, of our product candidates in any indication if approved;
- our plans for expanding our activities, including outside the U.S., and the potential for future collaborations and other types of contractual relationships, if appropriate, for accomplishing our strategic objectives;
- the level of costs we may incur in connection with our activities, the possible timing and sources of future financings, and our ability to obtain additional financing when needed to fund future operations;
- the potential for success of competing products that are or become available for the indications that we are pursuing or may in the future pursue;
- the potential risk of loss of key scientific or management personnel; and
- other risks and uncertainties, including those listed under Part II, Item 1A, Risk Factors.

Any forward-looking statements in this Quarterly Report reflect our current views with respect to future events and with respect 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 described under Part II, Item 1A, Risk Factors and elsewhere in this Quarterly Report. Given these uncertainties, you should not place undue reliance on these forward-looking statements. 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.

This Quarterly Report contains estimates, projections and other information concerning our industry, the general business environment, and the markets for certain diseases, including estimates regarding the potential size of those markets and the estimated incidence and prevalence of certain medical conditions. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties, and actual events, circumstances or numbers, including actual disease prevalence rates and market size, may differ materially from the information reflected in this Quarterly Report. Unless otherwise expressly stated, we obtained this industry, business information, market data, prevalence information and other data from reports, research surveys, studies and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data, and similar sources, in some cases applying our own assumptions and analysis that may, in the future, prove not to have been accurate.

Sage Therapeutics, Inc.

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PART I — FINANCIAL INFORMATION

Item 1. Financial Statements

Sage Therapeutics, Inc. and Subsidiaries
Condensed Consolidated Balance Sheets
(in thousands, except share and per share data)
(Unaudited)

	June 30, 2017	December 31, 2016
Assets		
Current assets:		
Cash and cash equivalents	$ 133,450	$ 168,517
Marketable securities	152,478	228,962
Prepaid expenses and other current assets	5,192	5,100
Total current assets	291,120	402,579
Property and equipment, net	1,443	1,388
Restricted cash	849	564
Total assets	$ 293,412	$ 404,531
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 6,042	$ 12,817
Accrued expenses	26,239	22,352
Total current liabilities	32,281	35,169
Other liabilities	827	845
Total liabilities	33,108	36,014
Commitments and contingencies (Note 5)		
Stockholders' equity:		
Preferred stock, $0.0001 par value per share; 5,000,000 shares authorized at June 30, 2017 and December 31, 2016; no shares issued or outstanding at June 30, 2017 and December 31, 2016	—	—
Common stock, $0.0001 par value per share; 120,000,000 shares authorized at June 30, 2017 and December 31, 2016; 37,423,464 and 37,222,518 shares issued at June 30, 2017 and December 31, 2016, respectively; 37,423,118 and 37,222,172 shares outstanding at June 30, 2017 and December 31, 2016, respectively	4	4
Treasury stock, at cost, 346 shares at June 30, 2017 and December 31, 2016	(17)	(17)
Additional paid-in capital	707,690	688,959
Accumulated deficit	(447,306)	(320,327)
Accumulated other comprehensive loss	(67)	(102)
Total stockholders' equity	260,304	368,517
Total liabilities and stockholders' equity	$ 293,412	$ 404,531

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

Sage Therapeutics, Inc. and Subsidiaries
Condensed Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share data)
(Unaudited)

	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Operating expenses:				
Research and development	$ 55,900	$ 26,096	$ 101,100	$ 49,677
General and administrative	14,954	8,910	27,234	16,044
Total operating expenses	70,854	35,006	128,334	65,721
Loss from operations	(70,854)	(35,006)	(128,334)	(65,721)
Interest income, net	672	266	1,379	442
Other expense, net	(20)	(7)	(24)	(11)
Net loss	$ (70,202)	$ (34,747)	$ (126,979)	$ (65,290)
Net loss per share—basic and diluted	$ (1.88)	$ (1.08)	$ (3.40)	$ (2.05)
Weighted average common shares outstanding—basic and diluted	37,361,129	32,062,298	37,315,393	31,835,194
Comprehensive loss:				
Net loss	$ (70,202)	$ (34,747)	$ (126,979)	$ (65,290)
Other comprehensive items:				
Unrealized gain on marketable securities	14	39	35	39
Total other comprehensive gain	14	39	35	39
Total comprehensive loss	$ (70,188)	$ (34,708)	$ (126,944)	$ (65,251)

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

Sage Therapeutics, Inc. and Subsidiaries
Condensed Consolidated Statements of Cash Flows
(in thousands)
(Unaudited)

	Six months ended June 30,	
	2017	**2016**
Cash flows from operating activities		
Net loss	$ (126,979)	$ (65,290)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	15,558	8,179
Premium on marketable securities	—	(269)
Amortization of premium on marketable securities	5	13
Depreciation	260	116
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(93)	(74)
Accounts payable	(6,768)	941
Accrued expenses and other liabilities	3,731	2,278
Net cash used in operating activities	(114,286)	(54,106)
Cash flows from investing activities		
Proceeds from sales and maturities of marketable securities	110,436	—
Purchases of marketable securities	(33,922)	(82,997)
Purchases of property and equipment	(321)	(835)
Increase in restricted cash	(285)	(525)
Net cash provided by (used in) investing activities	75,908	(84,357)
Cash flows from financing activities		
Proceeds from stock option exercises and employee stock purchase plan issuances	3,311	312
Payments of offering costs	—	(599)
Proceeds from public offerings of common stock, net of commissions and underwriting discounts	—	141,000
Net cash provided by financing activities	3,311	140,713
Net increase (decrease) in cash and cash equivalents	(35,067)	2,250
Cash and cash equivalents at beginning of period	168,517	186,753
Cash and cash equivalents at end of period	$ 133,450	$ 189,003

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

1. Nature of Operations

Sage Therapeutics, Inc. ("Sage" or the "Company") is a clinical-stage biopharmaceutical company committed to developing and commercializing novel medicines to treat life-altering central nervous system, or CNS, disorders, where there are no approved therapies or existing therapies are inadequate. The Company has a portfolio of product candidates with a current focus on modulating two critical CNS receptor systems, GABA and NMDA. The GABA receptor family, which is recognized as the major inhibitory neurotransmitter in the CNS, mediates downstream neurologic and bodily function via activation of $GABA_A$ receptors. The NMDA-type receptors of the glutamate receptor system are a major excitatory receptor system in the CNS. Dysfunction in these systems is implicated in a broad range of CNS disorders. The Company is targeting CNS indications where patient populations are easily identified, clinical endpoints are well-defined, and development pathways are feasible.

The Company was incorporated under the laws of the State of Delaware on April 16, 2010, and commenced operations on January 19, 2011 as Sterogen Biopharma, Inc. On September 13, 2011, the Company changed its name to Sage Therapeutics, Inc.

The Company is subject to risks and uncertainties common to companies in the biotech industry, including, but not limited to, the risks associated with developing product candidates at each stage of non-clinical and clinical development; the challenges associated with gaining regulatory approval of such product candidates; the risks associated with commercializing pharmaceutical products, if approved for marketing and sale; the potential for development by third parties of new technological innovations that may compete with the Company's products; the dependence on key personnel; the challenges of protecting proprietary technology; the need to comply with government regulations; the high costs of drug development; and the uncertainty of being able to secure additional capital when needed to fund operations.

The Company has incurred losses and negative cash flows from operations since its inception. As of June 30, 2017, the Company had an accumulated deficit of $447.3 million. From its inception through June 30, 2017, the Company received net proceeds of $643.3 million from the sales of redeemable convertible preferred stock, the issuance of convertible notes, and the proceeds from its initial public offering ("IPO") in July 2014 and follow-on underwritten public offerings in April 2015, January 2016 and September 2016. Until such time, if ever, as the Company can generate substantial product revenue, the Company expects to finance its cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other sources of funding. If the Company is unable to raise additional funds through equity or debt financings when needed, the Company may be required to delay, limit, reduce or terminate product development or future commercialization efforts or grant rights to develop and market products or product candidates that the Company would otherwise prefer to develop and market itself.

Based on its current operating plans, the Company believes its cash, cash equivalents and marketable securities of $285.9 million as of June 30, 2017 will be sufficient to fund its anticipated level of operations and capital expenditures into the second quarter of 2018.

Under Accounting Standards Update, or ASU, 2014-15, *Presentation of Financial Statements—Going Concern* (Subtopic 205-40), or ASC 205-40, the Company has the responsibility to evaluate whether conditions and/or events raise substantial doubt about its ability to meet its future financial obligations as they become due within one year after the date that the financial statements are issued. As required by ASC 205-40, this evaluation shall initially not take into consideration the potential mitigating effects of plans that have not been fully implemented as of the date the financial statements are issued.

The Company anticipates that its current capital resources will enable it to meet its anticipated operational expenses and capital expenditures into the second quarter of calendar year 2018. As of June 30, 2017, management has assessed the Company's ability to continue as a going concern in accordance with the requirements of ASC 205-40. Management has determined that the Company's accumulated deficit, history of losses, and future expected losses meet the ASC 205-40 standard for raising substantial doubt about the Company's ability to continue as a going concern within one year of the issuance date of these condensed consolidated financial statements. As of June 30, 2017, the Company had an accumulated deficit of $447.3 million and cash, cash equivalents and short-term investments on hand of $285.9 million. The Company is currently forecasting a significant increase in expenditures to support potential filings of New Drug Applications, or NDAs, for brexanolone in super-refractory status epilepticus, or SRSE, and in postpartum depression, or PPD, in the U.S. and future potential regulatory filings in the European Union, or EU, continued preparations for a potential future commercial launch of brexanolone, and spending on other clinical programs in development. The Company's current financial resources would not be sufficient to fund the Company's currently forecasted operating plan for a one year period from the issuance of these condensed consolidated financial statements. The Company has developed plans to mitigate this risk, which primarily consist of raising additional capital through a combination of equity or debt financings, and, depending on the availability and level of additional financings, potentially new collaborations and reducing cash expenditures.

The Company currently expects to seek additional funding. While the Company has raised capital in the past, the ability to raise capital in future periods is not considered probable, as defined under the accounting standards. As such, under the requirements of ASC 205-40, management may not consider the potential for future capital raises in their assessment of the Company's ability to meet its obligations for the next 12 months.

If the Company is not able to secure adequate additional funding, the Company plans to make reductions in spending. In that event, the Company may have to delay, reduce the scope of, suspend or eliminate one or more research and development programs or reduce spending and hiring in connection with the Company's commercialization efforts. The actions necessary to reduce spending under this plan at a level that mitigates the factors described above is not considered probable, as defined in the accounting standards; as such, under the requirements of ASC 205-40, the full extent to which management may extend the Company's funds through these actions may not be considered in management's assessment of the Company's ability to continue as a going concern for the next 12 months as defined by ASC-205-40.

As a result, in accordance with the requirements of ASC 205-40, management has concluded that it is required to disclose that substantial doubt exists about the Company's ability to continue as a going concern for one year from the date these financial statements are issued. While management has plans in place to mitigate these actions, they are not considered probable, as defined in the accounting standards, and a failure to raise the additional funding or to effectively implement cost reductions could harm the Company's business, results of operations and future prospects.

The accompanying unaudited interim condensed consolidated financial statements of the Company have been prepared on a going-concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. The accompanying unaudited interim condensed consolidated financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from uncertainty related to the ability to continue as a going concern.

2. Summary of Significant Accounting Policies

Basis of Presentation

The unaudited interim condensed consolidated financial statements of the Company included herein have been prepared pursuant to the rules and regulations of the Securities and Exchange Commission (the "SEC"). Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") have been condensed or omitted from this report, as is permitted by such rules and regulations. Accordingly, these condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements as of and for the year ended December 31, 2016.

The unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements. In the opinion of the Company's management, the accompanying unaudited condensed consolidated financial statements contain all adjustments, consisting of only normal recurring adjustments, necessary for a fair statement of its financial position as of June 30, 2017, its results of operations and comprehensive loss for the three and six months ended June 30, 2017 and 2016, and its cash flows for the six months ended June 30, 2017 and 2016. The consolidated balance sheet at December 31, 2016 was derived from audited financial statements, but does not include all disclosures required by GAAP. The results for the three and six months ended June 30, 2017 are not necessarily indicative of the results for the year ending December 31, 2017, or for any future period.

Principles of Consolidation

The unaudited interim condensed consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries as disclosed in Note 2, Summary of Significant Accounting Policies, within the "Notes to Consolidated Financial Statements" accompanying its Annual Report on Form 10-K for the fiscal year ended December 31, 2016. Intercompany accounts and transactions have been eliminated.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Research and Development

Research and development expenses are comprised of costs incurred in performing research and development activities, including salaries and benefits, overhead costs, depreciation, contract services and other related costs. Research and development costs are expensed to operations as the related obligation is incurred.

The Company has entered into various research and development contracts with research institutions and other companies both inside and outside of the United States. These agreements are generally cancelable, and related payments are recorded as research and development expenses as incurred. The Company records accruals for estimated ongoing research costs. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the studies, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates may be made in determining the accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates. The Company's historical accrual estimates have not been materially different from the actual costs.

Stock-Based Compensation

The Company recognizes compensation expense for stock-based awards made to employees and nonemployee directors, including grants of stock options and restricted stock, based on the estimated fair value on the date of grant, over the requisite service period.

For stock-based options and restricted stock units with time-based vesting, issued to nonemployee consultants, the Company recognizes the fair value of the award as an expense over the period in which the related services are received. The fair value of the awards and measurement of related stock-based compensation is subject to periodic adjustments as the awards vest.

For awards that vest upon achievement of a performance condition, the Company recognizes compensation expense when achievement of the performance condition is deemed probable over the implicit service period.

The fair value of each option grant is estimated using the Black-Scholes option-pricing model. Through December 31, 2015, the Company lacked sufficient Company-specific historical and implied volatility information, and as a result, the Company used the volatility of a group of publicly traded peer companies in the Black-Scholes calculations. Beginning in 2016, the Company estimated its expected volatility using a weighted average of the historical volatility of publicly traded peer companies and the volatility of its common stock, and expects to continue to do so until such time as it has adequate historical data regarding the volatility of its traded stock price for the duration of the expected term. The expected term of the Company's options has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options, while the expected term of its options granted to consultants and nonemployees has been determined based on the contractual term of the options. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. The expected dividend yield is based on the fact that the Company never paid cash dividends and does not expect to pay any cash dividends in the foreseeable future.

The Company also applies a forfeiture rate in order to calculate stock-based compensation expense. Expected forfeitures are based on the Company's historical experience and management's expectations of future forfeitures. To the extent actual forfeitures differ from the estimates, the difference will be recorded as a cumulative adjustment in the period in which the estimates are revised. The Company recognizes stock-based compensation expense for only the portion of awards that are expected to vest.

Marketable securities

Marketable securities consist of investments with original maturities greater than 90 days. The Company considers its investment portfolio of investments to be available-for-sale. Accordingly, these investments are recorded at fair value, which is based on quoted market prices. Unrealized gains and losses are reported as a component of accumulated other comprehensive items in stockholders' equity. Realized gains and losses and declines in value judged to be other than temporary are included as a component of other expense, net, based on the specific identification method. When determining whether a decline in value is other than temporary, the Company considers various factors, including whether the Company has the intent to sell the security, and whether it is more likely than not that the Company will be required to sell the security prior to recovery of its amortized cost basis. No declines in value were deemed to be other than temporary during the three and six months ended June 30, 2017.

Fair Value Measurements

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Financial assets and liabilities carried at fair value are classified and disclosed in one of the following three categories:

Level 1 — Quoted market prices in active markets for identical assets or liabilities.

Level 2 — Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 — Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The Company's cash equivalents and marketable securities at June 30, 2017 and December 31, 2016 were carried at fair value, determined according to the fair value hierarchy.

The carrying amounts reflected in the unaudited consolidated balance sheets for accounts payable and accrued expenses approximate their fair values due to their short-term maturities at June 30, 2017 and December 31, 2016, respectively.

Recently Issued Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (the "FASB") issued ASU No. 2014-09, *Revenue from Contracts with Customers* (Topic 606), which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. The FASB has continued to issue accounting standards updates to clarify and provide implementation guidance related to Revenue from Contracts with Customers, including ASU 2016-08, *Revenue from Contract with Customers: Principal versus Agent Considerations*, ASU 2016-10, *Revenue from Contracts with Customers: Identifying Performance Obligations and Licensing*, and ASU 2016-12, *Revenue from Contracts with Customers: Narrow-Scope Improvements and Practical Expedients.* These amendments address a number of areas, including the entity's identification of its performance obligations in a contract, collectability, non-cash consideration, presentation of sales tax and an entity's evaluation of the nature of its promise to grant a license of intellectual property and whether or not that revenue is recognized over time or at a point in time. These new standards will be effective for the Company beginning January 1, 2018. The Company had the option to early adopt the standard for the year ending December 31, 2017. The Company early adopted the standard as of January 1, 2017, although there is no impact of this new guidance on its consolidated financial statements as it does not currently have any revenue generating arrangements.

In February 2016, the FASB issued ASU No. 2016-02, *Leases*, which will replace the existing guidance in ASC 840, "Leases." The updated standard aims to increase transparency and comparability among organizations by requiring lessees to recognize leased assets and leased liabilities on the consolidated balance sheets and requiring disclosure of key information about leasing arrangements. The standard will be effective on January 1, 2019, with early adoption permitted. The Company is in the process of evaluating the impact that this new guidance will have on its consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-09, *Improvements to Employee Share-Based Payment Accounting*, which intends to simplify several aspects of accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, an option to recognize gross stock compensation expense with actual forfeitures recognized as they occur, as well as certain classifications on the statement of cash flows. The standard is effective for annual periods beginning after December 15, 2016 and for interim periods within those fiscal years. The Company adopted ASU 2016-09 on the required effective date of January 1, 2017. The Company elected to maintain its existing policy to estimate forfeitures when determining periodic stock-based compensation expense. The adoption of the other provisions of ASU 2016-09 had no impact on the Company's financial position, results of operations or cash flows.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which introduces a new methodology for accounting for credit losses on financial instruments, including available-for-sale debt securities. The guidance establishes a new "expected loss model" that requires entities to estimate current expected credit losses on financial instruments by using all practical and relevant information. Any expected credit losses are to be reflected as allowances rather than reductions in the amortized cost of available-for-sale debt securities. Early adoption is permitted for annual periods beginning after December 15, 2018, and interim periods therein. The Company is in the process of evaluating the impact that this new guidance will have on its consolidated financial statements.

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments*. The standard reduces the diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The standard will be effective on January 1, 2018. The Company is in the process of evaluating the impact that this new guidance will have on its consolidated financial statements.

In November 2016, the FASB issued ASU No. 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash* that changes the presentation of restricted cash and cash equivalents in the statement of cash flows. Restricted cash and restricted cash equivalents will be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. This standard is effective for the Company in the fiscal year beginning January 1, 2018, but early adoption is permissible. After adopting the standard, the amounts of restricted cash shown on the consolidated balance sheets of the Company would be included in cash and cash equivalents in the statement of cash flows. The Company is in the process of evaluating the impact that this new guidance will have on its consolidated financial statements.

In May 2017, the FASB issued ASU No. 2017-09, *Compensation—Stock Compensation (Topic 718) — Scope of Modification Accounting*, which applies to entities that change the terms or conditions of a share-based payment award. The amendments in this standard include guidance on determining whether changes to the terms and conditions of share-based payment awards require an entity to apply modification accounting under Topic 718 unless all of the following conditions are met: (1) the fair value of the modified award is the same as the fair value of the original award immediately before the original award is modified. If the modification does not affect any of the inputs to the valuation technique that the entity uses to value the award, the entity is not required to estimate the value immediately before and after the modification; (2) the vesting conditions of the modified award are the same as the vesting conditions of the original award immediately before the original award is modified; and (3) the classification of the modified award as an equity instrument or a liability instrument is the same as the classification of the original award immediately before the original award is modified. The amendments are effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2017 and should be applied prospectively to an award modified on or after the adoption date. The Company is in the process of evaluating the impact that this new guidance will have on its consolidated financial statements.

Other accounting standards that have been issued or proposed by the FASB or other standards-setting bodies that do not require adoption until a future date are not expected to have a material impact on the Company’s consolidated financial statements upon adoption.

3. Fair Value Measurements

The Company’s cash equivalents are classified within Level 1 of the fair value hierarchy. The Company’s investments in marketable securities are classified within Level 2 of the fair value hierarchy.

The fair values of the Company’s marketable securities are based on prices obtained from independent pricing sources. Consistent with the fair value hierarchy described above, securities with validated quotes from pricing services are reflected within Level 2, as they are primarily based on observable pricing for similar assets or other market observable inputs. Typical inputs used by these pricing services include, but are not limited to, reported trades, benchmark yields, issuer spreads, bids, offers or estimates of cash flow, prepayment spreads and default rates.

The following tables summarize the Company's money market funds and marketable securities as of June 30, 2017 and December 31, 2016:

	June 30, 2017			
	Total	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	(in thousands)			
Cash equivalents:				
Money market funds	$ 133,450	$ 133,450	$ —	$ —
Total cash equivalents	133,450	133,450	—	—
Marketable securities:				
U.S. government securities	75,959	—	75,959	—
U.S. corporate bonds	30,812	—	30,812	—
International corporate bonds	6,000	—	6,000	—
U.S. commercial paper	27,222	—	27,222	—
International commercial paper	12,485	—	12,485	—
Total marketable securities	152,478	—	152,478	—
Total cash equivalents and marketable securities	$ 285,928	$ 133,450	$ 152,478	$ —

	December 31, 2016			
	Total	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	(in thousands)			
Cash equivalents:				
Money market funds	$ 168,517	$ 168,517	$ —	$ —
Total cash equivalents	168,517	168,517	—	—
Marketable securities:				
U.S. government securities	100,031	—	100,031	—
U.S. corporate bonds	58,452	—	58,452	—
International corporate bonds	24,190	—	24,190	—
U.S. commercial paper	30,351	—	30,351	—
International commercial paper	15,938	—	15,938	—
Total marketable securities	228,962	—	228,962	—
Total cash equivalents and marketable securities	$ 397,479	$ 168,517	$ 228,962	$ —

During the six months ended June 30, 2017 and 2016, there were no transfers among the Level 1, Level 2 and Level 3 categories.

Marketable Securities

The following tables summarize the gross unrealized gains and losses of the Company's marketable securities as of June 30, 2017 and December 31, 2016:

	June 30, 2017			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(in thousands)			
Assets:				
U.S. government securities	$ 76,015	$ —	$ (56)	$ 75,959
U.S. corporate bonds	30,823	—	(11)	30,812
International corporate bonds	6,000	—	—	6,000
U.S. commercial paper	27,222	—	—	27,222
International commercial paper	12,485	—	—	12,485
	$ 152,545	$ —	$ (67)	$ 152,478

	December 31, 2016			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(in thousands)			
Assets:				
U.S. government securities	$ 100,055	$ 2	$ (26)	$ 100,031
U.S. corporate bonds	58,508	—	(56)	58,452
International corporate bonds	24,212	—	(22)	24,190
U.S. commercial paper	30,351	—	—	30,351
International commercial paper	15,938	—	—	15,938
	$ 229,064	$ 2	$ (104)	$ 228,962

As of June 30, 2017, all marketable securities held by the Company had remaining contractual maturities of one year or less.

There have been no impairments of the Company's assets measured and carried at fair value during the three and six months ended June 30, 2017 and the year ended December 31, 2016.

4. Accrued Expenses

Accrued expenses consist of the following:

	June 30, 2017	December 31, 2016
	(in thousands)	
Development costs	$ 19,305	$ 14,541
Employee-related expenses	4,142	5,948
Professional services	2,792	1,751
Other accrued expenses	—	112
	$ 26,239	$ 22,352

5. Commitments and contingencies

Operating Leases

In May 2017, the Company entered into the Sixth Amendment to the Lease with ARE-MA Region No. 38 ("Sixth Amendment") to increase the square feet of office space the Company leases in a multi-tenant building located at 215 First Street, Cambridge, Massachusetts. Prior to entering into the Sixth Amendment, the Company rented 22,067 square feet of office space in this building under an operating lease that was scheduled to expire in February 2022. The Sixth Amendment increases the amount of leased space at this location by 32,876 square feet, with the additional space consisting of (i) 8,200 square feet beginning on or around August 15, 2017, and (ii) 24,676 square feet beginning on or around January 1, 2018. The term for this additional space will expire no later than 84 months after the date on which the Company begins to rent the portion of the lease that is approximately 8,200 square feet. Additionally, the term of the existing lease will be extended from March 1, 2022 until the expiration date of the Sixth Amendment, which is anticipated to be on or around August 15, 2024.

In May 2016, the Company entered into an operating lease with Jamestown Premier 245 First, LLC under which, beginning in September 2016, the Company rents 19,805 square feet of office space in a multi-tenant building located at 245 First St., Cambridge, Massachusetts. The lease has been assigned by the lessor to CLPF-Cambridge Science Center, LLC. The lease is accounted for as an operating lease and is scheduled to expire in February 2022.

Future minimum lease payments under non-cancelable operating leases are as follows at June 30, 2017:

Years Ending December 31,	(in thousands)
2017	$ 1,505
2018	4,444
2019	4,537
2020	4,632
2021	4,728
Thereafter	8,935
	$ 28,781

CyDex License Agreement

In September 2015, the Company and CyDex Pharmaceuticals, Inc. ("CyDex") amended and restated their existing commercial license agreement. Under the terms of the commercial license agreement as amended and restated, CyDex has granted to the Company an exclusive license to CyDex's Captisol drug formulation technology and related intellectual property for the manufacture of pharmaceutical products incorporating the Company's compounds known as brexanolone (SAGE-547) and SAGE-689, and the development and commercialization of the resulting products in the treatment, prevention or diagnosis of any disease or symptom in humans or animals other than (i) the ocular treatment of any disease or condition with a formulation, including a hormone; (ii) topical ocular treatment of inflammatory conditions; (iii) treatment and prophylaxis of fungal infections in humans; and (iv) any ocular treatment for retinal degeneration. As consideration for the inclusion of SAGE-689 in the license granted by CyDex, the Company paid to CyDex $0.1 million, which was recorded as research and development expense for the three months ended September 30, 2015 in connection with the execution of the amended and restated license agreement.

The Company is obligated to make milestone payments under the amended and restated license agreement with CyDex based on the achievement of clinical development and regulatory milestones in the amount of up to $0.8 million in clinical milestones and up to $3.8 million in regulatory milestones for each of the first two fields with respect to brexanolone; up to $1.3 million in clinical milestones and up to $8.5 million in regulatory milestones for each of the third and fourth fields with respect to brexanolone; and up to $0.8 million in clinical milestones and up to $1.8 million in regulatory milestones for one field with respect to SAGE-689.

During the year ended December 31, 2015, clinical development milestones were met for the brexanolone program under the license agreement with CyDex, and accordingly, the Company recorded research and development expense for the year ended December 31, 2015 of $0.8 million.

In August 2016, an additional clinical development milestone was met for the brexanolone program under the license agreement with CyDex, and accordingly, the Company recorded research and development expense for the three months ended September 30, 2016 of $0.3 million.

In December 2016, an additional clinical development milestone was met for the brexanolone program under the license agreement with CyDex, and accordingly, the Company recorded research and development expense for the three months ended December 31, 2016 of $0.5 million.

For the three and six months ended June 30, 2017, the Company did not record any expense or make any milestone payments under the license agreement with CyDex.

University of California License Agreements

In October 2013, the Company entered into a non-exclusive license agreement with The Regents of the University of California whereby the Company was granted a non-exclusive license to certain clinical data and clinical material for use in the development and commercialization of biopharmaceutical products in the licensed field, including status epilepticus and postpartum depression. In May 2014, the license agreement was amended to add the treatment of essential tremor to the licensed field of use, materials and milestone fee provisions of the agreement. As of December 31, 2015, the Company paid to The Regents of the University of California clinical development milestones of $0.1 million and will be required to pay royalties of less than 1% on net sales for a period of fifteen years following the sale of the first product developed using the data and materials. The license will terminate on the earlier to occur of (i) 27 years after the effective date or (ii) 15 years after the last-derived product is first commercially sold.

In June 2015, the Company entered into an exclusive license agreement with The Regents of the University of California whereby the Company was granted an exclusive license to certain patent rights related to the use of allopregnanolone to treat various diseases. In exchange for such license, the Company paid an upfront payment of $50,000 and will make payments of $15,000 for annual maintenance fees until the calendar year following the first sale, if any, of a licensed product. The Company is obligated to make milestone payments following the achievement of specified regulatory and sales milestones of up to $0.7 million and $2.0 million in the aggregate, respectively, of which none have been paid to date. Following the first sale, if any, of a licensed product, the Company is obligated to pay royalties at a low single digit percentage of net sales, if any, of licensed products, subject to specified minimum annual royalty amounts. Unless terminated by operation of law or by acts of the parties under the terms of the agreement, the license agreement will terminate when the last-to-expire patents or last-to-be abandoned patent applications expire, whichever is later.

For the year ended December 31, 2016 and for the three and six months ended June 30, 2017, the Company did not record any expense or make any milestone or royalty payments under either license agreement with The Regents of the University of California.

Consulting Agreement

In January 2014, the Company entered into a consulting agreement with a non-employee advisor whereby the Company is obligated to make cash payments of up to $2.0 million and to issue up to 126,984 shares of common stock upon attainment of certain clinical development and regulatory milestones, of which $0.5 million has been paid and 39,681 shares of common stock have been issued to date.

For the year ended December 31, 2016 and the three and six months ended June 30, 2017, the Company did not record any expense or make any milestone payments under the consulting agreement with the non-employee advisor.

6. Sale of Equity Securities

On January 12, 2016, the Company completed the sale of 3,157,894 shares of its common stock at a price to the public of $47.50 per share, resulting in net proceeds to the Company of $140.4 million after deducting underwriting discounts and commissions and offering expenses paid by the Company.

On September 14, 2016, the Company completed the sale of 5,062,892 shares of its common stock at a price to the public of $39.75 per share, resulting in net proceeds to the Company of $189.2 million after deducting underwriting discounts and commissions paid by the Company.

7. Stock-Based Compensation

Stock Option Plans

On December 15, 2016, the Board of Directors of the Company approved the 2016 Inducement Equity Plan (the “2016 Stock Option Plan”). The 2016 Stock Option Plan provides for the grant of equity awards to individuals who have not previously been an employee or a non-employee director of the Company to induce them to accept employment and to provide them with a proprietary interest in the Company.

As of June 30, 2017, the total number of shares reserved under the 2016 Stock Option Plan and the 2014 Stock Option and Incentive Plan (the “2014 Stock Option Plan”) was 8,184,406, and the Company had 2,153,933 shares available for future issuance under such plans.

The 2014 Stock Option Plan provides for an annual increase, to be added on the first day of each year, by up to 4% of the Company's issued and outstanding shares of common stock on the last day of the prior year. On January 1, 2017, 1,488,886 shares of common stock, representing 4% of the Company's issued and outstanding shares of common stock as of December 31, 2016, were added to the 2014 Stock Option Plan.

During the six months ended June 30, 2017 and 2016, the Company granted 449,208 and 74,039 options, respectively, to employees to purchase shares of common stock that contain performance-based vesting criteria, primarily related to the achievement of certain clinical and regulatory development milestones related to product candidates. Recognition of stock-based compensation expense associated with these performance-based stock options commences when the performance condition is considered probable of achievement, using management's best estimates.

During the six months ended June 30, 2017 and 2016, the achievement of the remaining milestones that are the criteria for vesting of performance-based stock options was considered not probable, nor met, and therefore no expense has been recognized related to these awards for the six months ended June 30, 2017 and 2016.

Stock-based compensation expense for stock options and restricted stock units recognized during the three and six months ended June 30, 2017 and 2016 was as follows:

	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
	(in thousands)			
Research and development	$ 5,245	$ 2,037	$ 8,840	$ 3,649
General and administrative	4,105	2,428	6,718	4,530
	$ 9,350	$ 4,465	$ 15,558	$ 8,179

The weighted average grant date fair value per share relating to outstanding stock options granted under the Company's stock option plans during the six months ended June 30, 2017 and 2016 was $39.62 and $22.23, respectively.

The table below summarizes activity related to stock options:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Life (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2016	4,231,807	$ 29.99	8.24	$ 92,843
Granted	2,070,550	57.10		
Exercised	(196,402)	15.99		
Forfeited	(105,882)	39.06		
Outstanding as of June 30, 2017	6,000,073	$ 39.64	8.41	$ 239,974
Exercisable as of June 30, 2017	2,155,432	$ 25.22	7.29	$ 117,295

At June 30, 2017, the Company had unrecognized stock-based compensation expense related to its unvested service-based stock option awards of $82.8 million, which is expected to be recognized over the remaining weighted average vesting period of 2.99 years. The total fair value of options vested for the six months ended June 30, 2017 and 2016 was $12.8 million and $9.7 million, respectively. In addition, the Company granted 686,252 performance-based stock options that are both outstanding and unvested, and the total unrecognized stock-based compensation expense related to those awards was $14.8 million at June 30, 2017.

Restricted Stock Units

During the six months ended June 30, 2017, the Company granted 32,500 restricted stock units to employees of the Company. The Company did not grant restricted stock units prior to January 1, 2017. During the three and six months ended June 30, 2017, the Company recorded $0.2 million and $0.3 million, respectively, of stock-based compensation expense related to its restricted stock units. These restricted stock units vest ratably over two years, with cliff vesting of 50% at both the one year and two year anniversary of the grant.

8. Net Loss Per Share

Basic and diluted net loss per share was calculated as follows for the three and six months ended June 30, 2017 and 2016:

	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Basic net loss per share:				
Numerator:				
Net loss (in thousands)	$ (70,202)	$ (34,747)	$ (126,979)	$ (65,290)
Denominator:				
Weighted average common stock outstanding—basic	37,361,129	32,062,298	37,315,393	31,835,194
Dilutive effect of shares of common stock equivalents resulting from common stock options and restricted stock units	—	—	—	—
Weighted average common stock outstanding—diluted	37,361,129	32,062,298	37,315,393	31,835,194
Net loss per share—basic and diluted	$ (1.88)	$ (1.08)	$ (3.40)	$ (2.05)

The following common stock equivalents outstanding as of June 30, 2017 and 2016 were excluded from the computation of diluted net loss per share for the periods presented because including them would have been anti-dilutive:

	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Stock options	5,313,821	3,445,537	5,313,821	3,445,537
Restricted stock units	30,400	—	30,400	—
Employee stock purchase plan	8,697	7,192	8,697	7,192
Restricted stock awards	—	11,236	—	11,236
	5,352,918	3,463,965	5,352,918	3,463,965

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our unaudited condensed consolidated financial statements and related notes appearing elsewhere in this Quarterly Report on Form 10-Q, or Quarterly Report, and our Annual Report on Form 10-K for the year ended December 31, 2016, or Annual Report, and the audited financial information and the notes thereto.

We caution you that forward-looking statements are not guarantees of future performance, and that our actual results of operations, financial condition and liquidity, and the developments in our business and the industry in which we operate, may differ materially from the results discussed or projected in the forward-looking statements contained in this Quarterly Report. In addition, even if our results of operations, financial condition and liquidity, and the developments in our business and the industry in which we operate are consistent with the forward-looking statements contained in this Quarterly Report, they may not be predictive of results or developments in future periods. We caution readers not to place undue reliance on any forward-looking statements made by us, which speak only as of the date they are made.

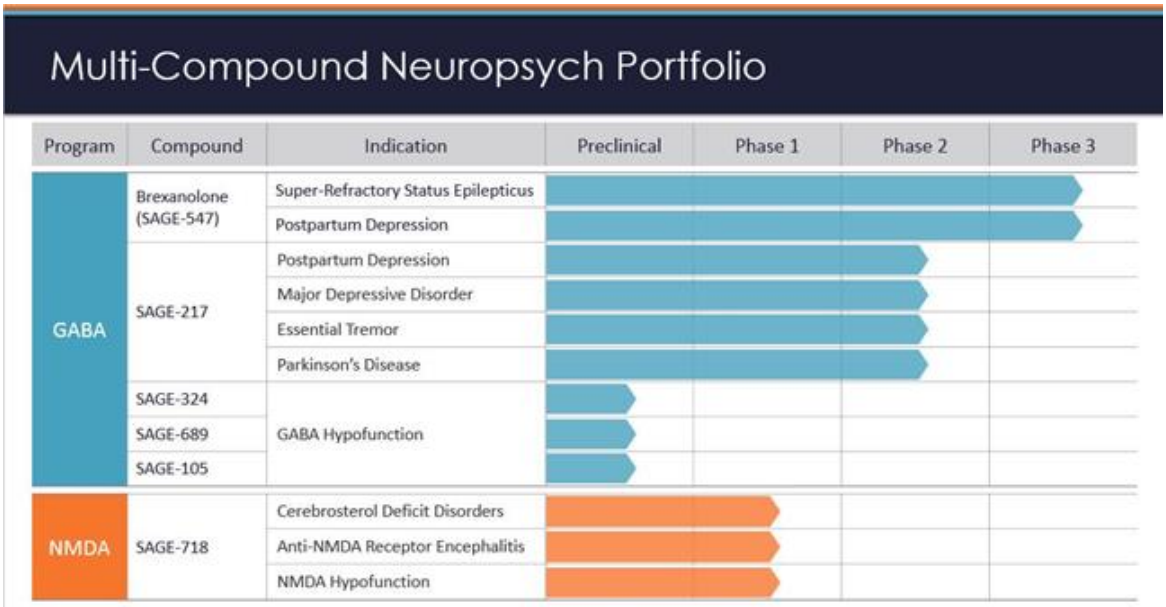
The following information and any forward-looking statements should be considered in light of factors discussed elsewhere in this Quarterly Report, including those risks identified under Part II, Item 1A, Risk Factors, and in the Annual Report.

We disclaim any obligation, except as specifically required by law and the rules of the SEC, to publicly update or revise any such forward-looking statements to reflect any change in our expectations or in events, conditions or circumstances under which any such statements may be based, or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements.

Overview

We are a clinical-stage biopharmaceutical company committed to developing and commercializing novel medicines to treat life-altering central nervous system, or CNS, disorders, where there are no approved therapies or existing therapies are inadequate. We have a portfolio of product candidates with a current focus on modulating two critical CNS receptor systems, GABA and NMDA. The GABA receptor family, which is recognized as the major inhibitory neurotransmitter in the CNS, mediates downstream neurologic and bodily function via activation of $GABA_A$ receptors. The NMDA-type receptors of the glutamate receptor system are a major excitatory receptor system in the CNS. Dysfunction in these systems is implicated in a broad range of CNS disorders. We are targeting CNS indications where patient populations are easily identified, clinical endpoints are well-defined, and development pathways are feasible.

The following table summarizes the status of our development programs as of the date of this Quarterly Report.



Our lead product candidate, SAGE-547, (brexanolone, USAN), is a proprietary intravenous, or IV, formulation of allopregnanolone, a naturally occurring neuroactive steroid that acts as a positive allosteric modulator of $GABA_A$ receptors, including both synaptic and extrasynaptic populations. We have recently completed enrollment of our Phase 3 clinical trial of brexanolone in super-refractory status epilepticus, or SRSE. We have two ongoing Phase 3 clinical trials of brexanolone in the treatment of postpartum depression, or PPD.

Our Phase 3 clinical trial in SRSE, known as the STATUS Trial, is evaluating brexanolone as a potential adjunctive therapy in the treatment of SRSE. SRSE is a rare and life-altering condition in which a patient experiences a state of continuous seizure called status epilepticus, or SE, that continues or recurs despite standard treatment regimens normally sufficient to stop the seizure activity. We have completed enrollment in the STATUS trial, and expect to report top-line results in the third quarter of 2017 after completion of data analysis. If successful, we believe the results from this Phase 3 clinical trial, together with other data from the brexanolone development program will be sufficient to form the basis of a New Drug Application, or NDA, submission to the U.S. Food and Drug Administration, or FDA, seeking approval for brexanolone in SRSE in the U.S. Based on scientific advice we received in the fourth quarter of 2016 from the European Medicines Agency, or EMA, we also believe our current Phase 3 clinical program in SRSE, if successful, will be sufficient to support submission of a marketing authorization application, or MAA, to the EMA seeking approval of brexanolone for SRSE in the European Union, or EU.

Our Phase 3 clinical program in PPD is evaluating brexanolone as a potential treatment for PPD. PPD is a distinct and readily identified depressive disorder that is a biological complication of childbirth, affecting a subset of women typically commencing in the third trimester of pregnancy or within four weeks after giving birth. We anticipate announcing top-line data from the Phase 3 clinical program, known as the Hummingbird Study, encompassing two placebo-controlled trials, in the second half of 2017. We have received Breakthrough Therapy designation from the FDA for brexanolone as a potential treatment for PPD. Based on input we received from the FDA during a Breakthrough Therapy meeting, we believe that, if successful, the results of the Phase 3 clinical program, together with the results of prior clinical studies of brexanolone in PPD, and ongoing non-clinical studies, will be sufficient to support the submission of an NDA to the FDA seeking approval for brexanolone in PPD in the U.S. We have also received **PRI**ority **ME**dicines (PRIME) designation from the EMA for brexanolone in the treatment of PPD in the EU. Incorporating scientific advice we recently received from the EMA, we believe our current Phase 3 clinical program in PPD, if successful, will be sufficient to support submission of an MAA to the EMA seeking approval of brexanolone for PPD in the EU. We anticipate that the outcome of the ongoing Phase 3 clinical trials in PPD, if supportive of an MAA filing, will inform any future regulatory discussions and potential post-marketing clinical development obligations.

Our most advanced next-generation product candidate is SAGE-217, a novel neuroactive steroid that, like brexanolone, is a positive allosteric modulator of $GABA_A$ receptors, targeting both synaptic and extrasynaptic $GABA_A$ receptors. We are currently conducting Phase 2 clinical trials of SAGE-217 in two mood disorders, major depressive disorder, or MDD, and PPD, and in two movement disorders, Parkinson's disease and essential tremor. In February 2017, we announced top-line results from the open-label, proof-of-concept portion (Part A) of our Phase 2 clinical trial of SAGE-217 in MDD, which met our criteria for advancing SAGE-217 into the blinded, placebo-controlled portion (Part B) of the Phase 2 clinical trial. We initiated dosing of Part B of the MDD Phase 2 clinical trial in April of 2017, and expect to report top-line results from this trial in the second half of 2017. In May 2017, we reported top-line results from a small open-label Phase 2 clinical trial exploring the safety, tolerability, pharmacokinetics and activity of SAGE-217 in 12 Parkinson's disease patients with moderate severity disease who were on stable doses of the anti-parkinsonian agent, levodopa/carbidopa. Based on the results of this clinical trial, we have initiated an additional open-label (Part B) clinical trial evaluating SAGE-217 as an adjunctive treatment to anti-Parkinsonian agents in tremor-predominant patients, and intend to further evaluate non-motor symptoms of Parkinson's disease, including depression, anxiety, cognition and sleep. We expect to report top-line results from the open-label Part B clinical trial of SAGE-217 in Parkinson's disease in the second half of 2017. We also anticipate reporting top-line results from the blinded, placebo-controlled Phase 2 clinical trials of SAGE-217 in essential tremor and PPD in the second half of 2017.

We have a portfolio of other novel compounds that target $GABA_A$ receptors, including SAGE-324 and SAGE-689, which are at earlier stages of development with a focus on both acute and chronic CNS disorders.

Our second area of focus is the development of novel compounds that target the NMDA receptor. The first product candidate selected for development from this program is SAGE-718, an oxysterol-based positive allosteric modulator of the NMDA receptor. Our initial areas of focus for development of SAGE-718 is expected to be cerebrosterol deficit disorders, Anti-NMDA Receptor Encephalitis, and other indications involving NMDA receptor hypofunction. We believe measuring levels of anti-NMDA receptor antibodies or decreased levels of cerebrosterol, a naturally occurring oxysterol, may represent a biomarker to identify, for future study, broader patient populations characterized by cognitive dysfunction and neuropsychiatric symptoms resulting from NMDA receptor dysfunction or hypofunction. Examples of these potential areas for future evaluation include certain types, aspects or subpopulations of a number of diseases such as depression, Alzheimer's disease, attention deficit hyperactivity disorder, schizophrenia, Huntington's disease, and neuropathic pain. We commenced the Phase 1 clinical program for SAGE-718 in the second quarter of 2017. We expect

to report top-line results from a Phase 1 single ascending dose (SAD) trial of SAGE-718 in healthy volunteers in the second half of 2017.

We expect to continue our focus on allosteric modulation of the $GABA_A$ and NMDA receptor systems in the brain. The $GABA_A$ and NMDA receptor systems are broadly accepted as impacting many psychiatric and neurological disorders, spanning disorders of mood, seizure, cognition, anxiety, sleep, pain, epilepsy, and movement disorders, among others. We believe that we will have the opportunity to develop molecules from our internal portfolio with the goal of addressing a number of these disorders in the future. Our ability to identify and develop such novel CNS therapies is enabled by our proprietary chemistry platform that is centered, as a starting point, on knowledge of the chemical scaffolds of certain endogenous neuroactive steroids. We believe our knowledge of the chemistry and activity of allosteric modulators allows us to efficiently design molecules with different characteristics. This diversity enables us to regulate important properties such as half-life, brain penetration and receptor pharmacology, and to select for development product candidates that have the potential for better selectivity, increased tolerability, and fewer off-target side effects than either current CNS therapies or previous therapies which have failed in development.

We have not generated any revenue to date. We have incurred net losses in each year since our inception, and we have an accumulated deficit of $447.3 million as of June 30, 2017. Our net losses were $127.0 million for the six months ended June 30, 2017 and $159.0 million for the year ended December 31, 2016. These losses have resulted principally from costs incurred in connection with research and development activities and general and administrative costs associated with our operations. We expect to incur significant expenses and increasing operating losses for the foreseeable future.

We expect that our expenses will increase substantially in connection with our ongoing activities, as we:

- complete the ongoing Phase 3 clinical trials for brexanolone in SRSE and PPD, as well as additional clinical trials and non-clinical studies of brexanolone required for regulatory approval in SRSE and PPD;
- complete the ongoing and currently planned Phase 2 clinical trials of SAGE-217 in MDD, essential tremor, Parkinson’s disease, and PPD, and advance SAGE-217 further in development depending on the outcome of the ongoing trials;
- continue to advance SAGE-718, our early-stage novel allosteric modulator for NMDA, including completing the ongoing Phase 1 clinical program;
- continue non-clinical studies of SAGE-324 with a focus on orphan epilepsies and indications involving GABA hypofunction;
- continue our research and development efforts to evaluate the potential for our product candidates in the treatment of additional indications or in new formulations, and to identify new drug candidates in the treatment of CNS disorders;
- advance regulatory activities focused on potential filings of NDAs for brexanolone in SRSE and in PPD in the U.S., if the results of our Phase 3 clinical trials are positive, and future potential regulatory filings in the EU, and seek regulatory approvals for any other product candidates that successfully complete clinical development;
- continue preparations for a potential future commercial launch of brexanolone, if our development efforts are successful;
- complete validation work and other supply chain activities related to brexanolone to be ready for commercial supply if our development efforts are successful, and continue to improve the manufacturing process for our other product candidates and manufacture clinical supplies as development progresses;
- add personnel, including personnel to support our product development and future commercialization efforts and potential expansion of EU activities, and incur increases in stock compensation expense related to existing and new personnel with respect to both service-based and performance-based awards;
- add operational, financial and management information systems; and
- maintain, leverage and expand our intellectual property portfolio.

As a result, we will need additional financing in the future to support our continuing operations. Until such time that we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of public or debt financings or other sources, which may include collaborations with third parties. Arrangements with collaborators or others may require us to relinquish rights to certain of our technologies or product candidates. In addition, we may never successfully complete development of any of our product candidates; obtain adequate patent protection or other exclusivity for our product candidates; obtain necessary regulatory approval for our product candidates; or achieve commercial viability for any approved product. Adequate additional financing may not be available to us on acceptable terms, or at all. Our inability to raise capital as and when needed would have a negative impact on our financial condition and on our ability to pursue our business strategy. We will need to generate significant revenue to achieve profitability, and we may never do so.

We expect that our existing cash, cash equivalents and marketable securities as of June 30, 2017 will enable us to fund our operating expenses and capital expenditure requirements, based on our current operating plan, into the second quarter of 2018. See "—Liquidity and Capital Resources".

Financial Operations Overview

Revenue

We have not generated any revenue from product sales since our inception, and do not expect to generate any revenue from the sale of products in the near future. If our development efforts result in clinical success and regulatory approval or collaboration agreements with third parties for our product candidates, we may generate revenue from those product candidates.

Operating Expenses

Our operating expenses since inception have consisted primarily of costs associated with research and development activities and general and administrative activities.

Research and Development Expenses

Research and development expenses, which consist primarily of costs associated with our product research and development efforts, are expensed as incurred. Research and development expenses consist primarily of:

- personnel costs, including salaries, benefits, stock-based compensation and travel expenses, for employees engaged in research and development functions;
- expenses incurred under agreements with contract research organizations, or CROs, and sites that conduct our non-clinical studies and clinical trials;
- expenses associated with manufacturing materials for use in clinical trials, developing external manufacturing capabilities and validating our manufacturing processes;
- costs of outside consultants engaged in research and development activities, including their fees, stock-based compensation and travel expenses;
- other expenses related to our non-clinical studies and clinical trials and expenses related to our regulatory activities; and
- payments made under our third-party license agreements.

Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors and our clinical sites.

We have been developing our product candidates and focusing on other research and development programs, including exploratory efforts to identify new compounds, target validation for identified compounds and lead optimization for our earlier-validated programs. Our direct research and development expenses are tracked on a program-by-program basis, and consist primarily of external costs, such as fees paid to investigators, central laboratories, CROs and contract manufacturing organizations, or CMOs, in connection with our non-clinical studies and clinical trials; third-party license fees related to our product candidates; and fees paid to outside consultants who perform work on our programs. We do not allocate employee-related costs and other indirect costs to specific research and development programs because these costs are deployed across multiple product programs under research and development and, as such, are separately classified as unallocated research and development expenses.

Research and development activities are central to our business. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect that our research and development expenses will continue to increase in the foreseeable future as we continue or initiate clinical trials and non-clinical studies for certain product candidates, pursue later stages of clinical development of our product candidates and continue our earlier stage exploratory efforts.

We cannot determine with certainty the duration and costs of the current or future clinical trials of our product candidates or if, when, or to what extent we will generate revenue from the commercialization and sale of any of our product candidates, if approved for marketing and sale. The duration, costs, and timing of clinical trials and development of our product candidates will depend on a variety of factors, including:

- the scope, size, rate of progress, and expense of our ongoing as well as any additional clinical trials, non-clinical studies, and other research and development activities;
- future clinical trial and non-clinical study results;
- decisions by regulatory authorities related to our product candidates;
- uncertainties in clinical trial enrollment rate or design;
- significant and changing government regulation; and
- the receipt and timing of any regulatory approvals, if any.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the FDA or another regulatory authority were to require us to conduct clinical trials beyond those that we currently anticipate will be required for the completion of clinical development of a product candidate for a particular indication, or if we experience significant delays in enrollment in any of our clinical trials or need to enroll additional patients, we could be required to expend significant additional financial resources and time on the completion of clinical development.

General and Administrative Expenses

General and administrative expenses include personnel costs, consisting of salaries, benefits, stock-based compensation and travel expenses of our executive, finance, business, commercial, corporate development and other administrative functions. General and administrative expenses also include expenses incurred under agreements with third parties relating to evaluation, planning and preparation for a potential commercial launch; facilities and other related expenses, including rent, depreciation, maintenance of facilities, insurance and supplies; and professional fees for audit, tax and legal services, including legal expenses to pursue patent protection of our intellectual property.

We anticipate that our general and administrative expenses will increase in the future as we increase our headcount to support the expected growth in our business and the potential commercialization of our product candidates. We also anticipate increased expenses associated with general operations, including costs related to audit and tax services, director and officer insurance premiums, investor relations and legal costs, including legal expenses to pursue patent protection of our intellectual property. Additionally, we anticipate an increase in payroll and related expenses as we continue to build our organizational capabilities, expand our operations, and prepare for possible future commercial operations, including sales and marketing of our product candidates, if approved.

Results of Operations

Comparison of Three Months Ended June 30, 2017 and 2016

The following table summarizes our results of operations for the three months ended June 30, 2017 and 2016:

	Three Months Ended June 30,		Increase
	2017	2016	(Decrease)
	(in thousands)		
Operating expenses:			
Research and development	$ 55,900	$ 26,096	$ 29,804
General and administrative	14,954	8,910	6,044
Total operating expenses	$ 70,854	$ 35,006	$ 35,848
Loss from operations	(70,854)	(35,006)	(35,848)
Interest income, net	672	266	406
Other expense, net	(20)	(7)	(13)
Net loss	$ (70,202)	$ (34,747)	$ (35,455)

Research and development expenses

	Three Months Ended June 30,		Increase (Decrease)
	2017	2016	
	(in thousands)		
SAGE-547 (brexanolone)	$ 22,242	$ 12,007	$ 10,235
SAGE-217	12,163	3,896	8,267
SAGE-718	1,505	1,555	(50)
Other research and development programs	3,483	2,262	1,221
Unallocated expenses	16,507	6,376	10,131
Total research and development expenses	$ 55,900	$ 26,096	$ 29,804

Research and development expenses for the three months ended June 30, 2017 were $55.9 million, compared to $26.1 million for the three months ended June 30, 2016. The increase of $29.8 million was primarily due to the following:

- an increase of $10.2 million in expenses related to our brexanolone program, due to the continued advancement of the program in clinical development, including ongoing enrollment in the Phase 3 clinical trials in SRSE and PPD; conduct of supporting clinical pharmacology studies; and an increase in chemistry, manufacturing and control, or CMC, work in preparation for a potential filing for regulatory approval. No expenses related to payments to consultants and licensors upon achievement of certain clinical development milestones were incurred in the three months ended June 30, 2017 or 2016;
- an increase of $8.3 million in expenses related to conduct of our Phase 2 clinical trials of SAGE-217 in MDD, essential tremor, Parkinson's disease and PPD, and production of clinical supply to support these clinical trials;
- an increase of $1.2 million in expenses related to research and development programs and discovery efforts focused on identifying new clinical candidates and additional indications of interest, and on our back-up programs; and
- an increase of $10.1 million in unallocated expenses, mainly due to the hiring of additional full-time employees to support the growth of our operations, including an increase of $3.2 million of non-cash stock-based compensation.

General and administrative expenses

	Three Months Ended June 30,		Increase (Decrease)
	2017	2016	
	(in thousands)		
Personnel-related	$ 8,073	$ 4,815	$ 3,258
Professional fees	2,928	1,663	1,265
Commercial planning	2,525	1,219	1,306
Other	1,428	1,213	215
Total general and administrative expenses	$ 14,954	$ 8,910	$ 6,044

General and administrative expenses for the three months ended June 30, 2017 and 2016 were $15.0 million and $8.9 million, respectively. The increase of $6.0 million was primarily due to the following:

- an increase of $3.3 million in personnel-related costs in connection with the hiring of additional full-time employees to support operations, finance, human resources, legal and early commercial planning activities;
- an increase of $1.3 million in professional fees associated with expanding operations, including costs related to audit, legal, and tax-related services, as well as investor relations costs;
- an increase of $1.3 million in costs related to preparations for a potential commercial launch, if our development efforts are successful; and
- an increase of $0.2 million in other expenses due to increased costs associated with facilities, mainly due to the increase in the amount of rented square feet of office space to accommodate our increased number of employees.

Interest Income, net and Other expense, net

Interest income, net, and other expense, net, for the three months ended June 30, 2017 and 2016 were $0.7 million and $0.3 million, respectively. The primary reason for the increase was that we owned marketable securities for the entirety of the three months ended June 30, 2017, but only for a portion of the three months ended June 30, 2016.

Comparison of Six Months Ended June 30, 2017 and 2016

The following table summarizes our results of operations for the six months ended June 30, 2017 and 2016:

	Six Months Ended June 30,		Increase (Decrease)
	2017	2016	
	(in thousands)		
Operating expenses:			
Research and development	$ 101,100	$ 49,677	$ 51,423
General and administrative	27,234	16,044	11,190
Total operating expenses	128,334	65,721	62,613
Loss from operations	(128,334)	(65,721)	(62,613)
Interest income, net	1,379	442	937
Other income, net	(24)	(11)	(13)
Net loss	$ (126,979)	$ (65,290)	$ (61,689)

Research and development expenses

	Six Months Ended June 30,		Increase (Decrease)
	2017	2016	
	(in thousands)		
SAGE-547 (brexanolone)	$ 42,167	$ 22,386	$ 19,781
SAGE-217	21,130	9,002	12,128
SAGE-718	2,811	2,602	209
Other research and development programs	6,161	4,068	2,093
Unallocated expenses	28,831	11,619	17,212
Total research and development expenses	$ 101,100	$ 49,677	$ 51,423

Research and development expenses for the six months ended June 30, 2017 were $101.1 million, compared to $49.7 million for the six months ended June 30, 2016. The increase of $51.4 million was primarily due to the following:

- an increase of $19.8 million in expenses related to our brexanolone program, due to the continued advancement of the program in clinical development, including ongoing enrollment in the Phase 3 clinical trials in SRSE and PPD; conduct of supporting clinical pharmacology studies; and an increase in chemistry, manufacturing and control, or CMC, work in preparation for a potential filing for regulatory approval. No expenses related to payments to consultants and licensors upon achievement of certain clinical development milestones were incurred in the six months ended June 30, 2017 or 2016;
- an increase of $12.1 million in expenses related to conduct of our Phase 2 clinical trials of SAGE-217 in MDD, essential tremor, Parkinson's disease and PPD, and production of clinical supply to support these clinical trials;
- an increase of $0.2 million in expenses related to our SAGE-718 program due to the completion of IND-enabling non-clinical development and CMC activities in preparation for the IND filing, and expenses related to preparations for commencement of the Phase 1 clinical program;
- an increase of $2.1 million in expenses related to research and development programs and discovery efforts focused on identifying new clinical candidates and additional indications of interest, and on our back-up programs; and
- an increase of $17.2 million in unallocated expenses, mainly due to the hiring of additional full-time employees to support the growth of our operations, including an increase of $5.2 million of non-cash stock-based compensation.

General and administrative expenses

	Six Months Ended June 30,		Increase (Decrease)
	2017	2016	
		(in thousands)	
Personnel-related	$ 14,284	$ 9,002	$ 5,282
Professional fees	5,261	3,235	2,026
Commercial planning	4,910	1,727	3,183
Other	2,779	2,080	699
Total general and administrative expenses	$ 27,234	$ 16,044	$ 11,190

General and administrative expenses for the six months ended June 30, 2017 and 2016 were $27.2 million and $16.0 million, respectively. The increase of $11.2 million was primarily due to the following:

- an increase of $5.3 million in personnel-related costs in connection with the hiring of additional full-time employees to support operations, finance, human resources, legal and early commercial planning activities;
- an increase of $2.0 million in professional fees associated with expanding operations, including costs related to audit, legal, and tax-related services, as well as investor relations costs;
- an increase of $3.2 million in costs related to preparations for a potential commercial launch; and
- an increase of $0.7 million in other expenses due to increased costs associated with facilities, mainly due to the increase in the amount of rented square feet of office space to accommodate our increased number of employees.

Interest Income, net and Other expense, net

Interest income, net, and other expense, net, for the six months ended June 30, 2017 and 2016 were $1.4 million and $0.4 million, respectively. The primary reason for the increase was that we owned marketable securities for the entirety of the six months ended June 30, 2017, but only for a portion of the six months ended June 30, 2016.

Liquidity and Capital Resources

Since our inception in April 2010, we have not generated any revenue, and have incurred recurring net losses. As of June 30, 2017, we had an accumulated deficit of $447.3 million. From our inception through June 30, 2017, we received net proceeds of $643.3 million from the sales of redeemable convertible preferred stock, the issuance of convertible notes and the sales of common stock in our IPO in July 2014 and follow-on offerings in April 2015, January 2016 and September 2016.

On January 12, 2016, we completed the sale of 3,157,894 shares of our common stock in an underwritten public offering at a price to the public of $47.50 per share, resulting in net proceeds of $140.4 million after deducting commissions and underwriting discounts and offering costs paid by us.

On September 14, 2016, we completed the sale of 5,062,892 shares of our common stock in an underwritten public offering at a price to the public of $39.75 per share, resulting in net proceeds of $189.2 million after deducting commissions and underwriting discounts paid by us.

As of June 30, 2017, our primary sources of liquidity were our cash, cash equivalents and marketable securities, which totaled $285.9 million. We invest our cash in money market funds, U.S. government securities, corporate bonds and commercial paper, with the primary objectives to preserve principal, provide liquidity and maximize income without significantly increasing risk.

The following table summarizes the primary sources and uses of cash for the six months ended June 30, 2017 and 2016:

	Six Months Ended June 30,	
	2017	2016
	(in thousands)	
Net cash provided by (used in):		
Operating activities	$ (114,286)	$ (54,106)
Investing activities	75,908	(84,357)
Financing activities	3,311	140,713
Net increase (decrease) in cash and cash equivalents	$ (35,067)	$ 2,250

Operating activities

Cash used in operating activities for the six months ended June 30, 2017 was $114.3 million as compared to $54.1 million for the six months ended June 30, 2016. The increase of $60.2 million was primarily due to the following:

- An increase of $61.7 million in cash used related to our net loss, primarily due to increased research and development activities related to our lead programs in development along with increased headcount in related functions, and increased general and administrative expenses due to increased headcount to support our operations; and
- An increase of $6.3 million in cash used by changes in our operating assets and liabilities, primarily due to the growth of the business and the timing of vendor invoicing and payments.

Investing activities

During the six months ended June 30, 2017, net cash provided by investing activities was $75.9 million and during the six months ended June 30, 2016, net cash used by investing activities was $84.4 million. During the six months ended June 30, 2017, we received proceeds of $110.4 million from sales and maturities of marketable securities and used $33.9 million to purchase marketable securities. During the six months ended June 30, 2016, we used $83.0 million to purchase marketable securities, and sold no marketable securities.

Financing activities

During the six months ended June 30, 2017 and 2016, net cash provided by financing activities was $3.3 million and $140.7 million, respectively. Net cash provided by financing activities in the six months ended June 30, 2017 consisted of $3.3 million of proceeds from stock option exercises and employee stock purchase plan issuances. Net cash provided by financing activities in the six months ended June 30, 2016 consisted of $140.4 million of net proceeds from a follow-on underwritten public offering of our common stock in January 2016 after deducting commissions and underwriting discounts and offering costs.

Operating Capital Requirements

To date, we have not generated any revenue from product sales. We do not know when, or if, we will generate any revenue from product sales. We do not expect to generate significant revenue from product sales unless and until we successfully develop, obtain regulatory approval of and commercialize one of our current or future product candidates. We anticipate that we will continue to generate losses for the foreseeable future, and we expect the losses to increase as we continue the development of, and seek regulatory approvals for, our product candidates; continue preparations for potential future commercialization; begin to commercialize any products, if successfully developed and approved; and continue our efforts to identify and develop new product candidates. We also expect to incur additional costs associated with general operations. In addition, subject to obtaining regulatory approval of any of our product candidates, we expect to incur significant commercialization expenses for product sales, marketing and outsourced manufacturing. Accordingly, we anticipate that we will need substantial additional funding in connection with our continuing operations.

Based on our current operating plans, we expect that our existing cash, cash equivalents and marketable securities as of June 30, 2017, will enable us to fund our operating expenses and capital expenditure requirements into the second quarter of 2018. During that time, we expect that our expenses will increase substantially as we:

- complete the ongoing Phase 3 clinical trials for brexanolone in SRSE and PPD, as well as additional clinical trials and non-clinical studies of brexanolone required for regulatory approval in SRSE and PPD;
- complete the ongoing and currently planned Phase 2 clinical trials of SAGE-217 in MDD, essential tremor, Parkinson's disease, and PPD, and advance SAGE-217 further in development depending on the outcome of the ongoing trials;
- continue to advance SAGE-718, our early-stage novel allosteric modulator for NMDA, including completing the ongoing Phase 1 clinical program;
- continue non-clinical studies of SAGE-324 with a focus on orphan epilepsies and indications involving GABA hypofunction;
- continue our research and development efforts to evaluate the potential for our product candidates in the treatment of additional indications or in new formulations, and the identification of new drug candidates in the treatment of CNS disorders;
- advance regulatory activities focused on potential filings of NDAs for brexanolone in SRSE and in PPD in the U.S., if the results of our Phase 3 clinical trials are positive, and future potential regulatory filings in the EU, and seek regulatory approvals for any other product candidates that successfully complete clinical development;
- continue preparations for a potential future commercial launch of brexanolone, if our development efforts are successful;
- complete validation work and other supply chain activities related to brexanolone to be ready for commercial supply if our development efforts are successful, and continue to improve the manufacturing process for our other product candidates and manufacture clinical supplies as development progresses;
- add personnel, including personnel to support our product development and future commercialization efforts, and potential expansion of EU activities, and incur increases in stock compensation expense related to existing and new personnel with respect to both service-based and performance-based awards;
- add operational, financial and management information systems; and
- maintain, leverage and expand our intellectual property portfolio.

Our current operating plan does not contemplate other development activities that we may pursue or that all of our currently planned activities will proceed at the same pace, or that all of these activities will be fully initiated or completed during that time. We have based our estimates on assumptions that could change, and we may use our available capital resources sooner than we currently expect. We may also choose to change or increase our development or other efforts. Because of the numerous risks and uncertainties associated with the development and commercialization of our product candidates, we are unable to estimate the amounts of increased capital outlays and operating expenditures necessary to complete the development and commercialization of our product candidates.

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

- the ability of our product candidates to progress through clinical development successfully;
- the initiation, progress, timing, costs, and results of non-clinical studies and clinical trials for our existing and future product candidates; the number and length of clinical trials required by regulatory authorities to support regulatory approval; and the costs of preparing regulatory filings;
- the cost, timing, and outcome of regulatory reviews and approvals;
- the level, timing and amount of costs associated with preparing for a potential future commercial launch in the near term, and if we are successful in our development efforts and in obtaining regulatory approval of any of our product candidates, the cost of executing a commercial launch of the approved product, including manufacturing-related costs;
- the rate and degree of market acceptance for our products, if successfully developed and approved, and the availability and level of reimbursement for such products;
- the number and characteristics of the product candidates we pursue and the nature and scope of our discovery and development programs;
- the scope and timing of potential expansion of our activities outside the U.S.;

- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- the extent to which we acquire or in-license other products and technologies; and
- our ability to establish any future collaboration arrangements on favorable terms, if at all.

Until such time, if ever, as we can generate substantial product revenue and achieve profitability, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other sources of funding. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or in light of specific strategic considerations. 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 diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt 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 and may require the issuance of warrants, which could potentially dilute the ownership interest of our stockholders. If we raise additional funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams or research programs or to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market products or product candidates that we would otherwise prefer to develop and market ourselves.

As discussed in Note 1 of the Notes to the Unaudited Condensed Consolidated Financial Statements under Accounting Standards Update, or ASU, 2014-15, *Presentation of Financial Statements—Going Concern* (Subtopic 205-40), or, ASC 205-40, we have the responsibility to evaluate whether conditions or events raise substantial doubt about our ability to meet our future financial obligations as they become due within one year after the date the financial statements are issued. Under ASC 205-40, this evaluation initially cannot take into consideration the potential mitigating effects of plans that have not been fully implemented as of the date the financial statements are issued. Since we currently anticipate that our existing capital resources will enable us to meet our planned operational expenses and capital expenditures, based on our current operating plans, only into the second quarter of calendar year 2018, we have determined that this cash runway of less than 12 months along with our accumulated deficit, history of losses, and future expected losses meet the ASC 205-40 standard for raising substantial doubt about our ability to continue as a going concern within one year of the issuance date of these unaudited condensed consolidated financial statements. While we have plans in place to mitigate this risk, which primarily consist of raising additional capital through a combination of equity or debt financings, and, depending on the availability and level of additional financings, potentially new collaborations and reducing cash expenditures, there is no guarantee that we will be successful in these mitigation efforts.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations at June 30, 2017 and the effect such obligations are expected to have on our liquidity and cash flow in future periods:

	Payments Due by Period				
	Total	Less Than 1 year	1-3 Years	3-5 Years	More Than 5 years
			(in thousands)		
Operating lease commitments (1)	$ 28,781	$ 3,720	$ 9,075	$ 8,923	$ 7,063
Total (1)(2)(3)(4)	$ 28,781	$ 3,720	$ 9,075	$ 8,923	$ 7,063

Amounts related to contingent milestone payments are not considered contractual obligations as they are contingent on the successful achievement of certain milestones. These contingent milestones may not be achieved. We have not included any of these amounts in the table as we cannot estimate or predict when, or if, these amounts will become due.

(1) We lease 22,067 square feet of office space in a multi-tenant building located at 215 First Street, Cambridge, Massachusetts under an operating lease that will expire in August 2022. In May 2017, we entered into the Sixth Amendment to the Lease with ARE-MA Region No. 38 (“Sixth Amendment”) under which we increased the amount of square feet of office space we lease in this building by 32,876 square feet, consisting of (i) 8,200 rentable square feet beginning on or around August 15, 2017, and (ii) 24,676 rentable square feet beginning on or around January 1, 2018. The term for this additional space will expire no later than 84 months after the date on which the Company begins to rent the portion of the lease that is approximately 8,200 square feet. Additionally, the term of the existing lease will be extended from March 1, 2022 until the expiration date of the Sixth Amendment, which is anticipated to be on or around August 15, 2024. The increase in future expected payments under the Sixth Amendment will be approximately $15.8 million. In May 2016, we entered into a lease under which, beginning in

September 2016, we rent 19,805 square feet of additional office space, also in Cambridge, Massachusetts, in a separate multi-tenant building. The lease for the additional space will expire in February 2022. The minimum lease payments in the table do not include related common area maintenance charges or real estate taxes, because those costs are variable.

(2) We have acquired exclusive and non-exclusive rights to use, research, develop and offer for sale certain products and patents under license agreements with Washington University, CyDex Pharmaceuticals, Inc. and two license agreements with The Regents of the University of California. The license agreements obligate us to make payments to the licensors for license fees, milestones, license maintenance fees and royalties. We are obligated to make future remaining milestone payments under these agreements of up to an aggregate of $33.4 million upon achieving certain milestones, related to clinical development, regulatory approvals and sales. For the three and six months ended June 30, 2017, we recorded no research and development expense under these license agreements.

(3) We enter into contracts in the normal course of business with CROs for clinical trials, non-clinical research studies and testing, manufacturing and other services and products as part of general operations. These contracts generally provide for termination upon notice, and we believe that our non-cancelable obligations under these agreements are not material.

(4) Under a January 2014 consulting agreement, we are obligated to make remaining milestone payments of up to $1.5 million and to issue up to 87,303 shares of our common stock to a nonemployee consultant upon achieving certain clinical development milestones and regulatory approval milestones. For the three and six months ended June 30, 2017, we did not record any expense or make any milestone payments under this consulting agreement.

Off-Balance Sheet Arrangements

We do not currently have, nor did we have during the periods presented, any off-balance sheet arrangements as defined by SEC rules.

Application of Critical Accounting Policies

We have prepared our consolidated financial statements in accordance with accounting principles generally accepted in the United States. Our preparation of these consolidated financial statements requires us to make estimates, assumptions, and judgments that affect the reported amounts of assets, liabilities, expenses, and related disclosures at the date of the consolidated financial statements, as well as revenue and expenses recorded during the reporting periods. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results could therefore differ materially from these estimates under different assumptions or conditions.

There have been no material changes to our critical accounting policies from those described in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in our Annual Report on Form 10-K filed by us with the SEC on February 24, 2017.

Recently Issued Accounting Pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is set forth in Note 2, "Summary of Significant Accounting Policies," in the accompanying Notes to Condensed Consolidated Financial Statements included in Item 1 of Part I of this Quarterly Report.

Item 3. Quantitative and Qualitative Disclosure about Market Risk

We had cash, cash equivalents and marketable securities of approximately $285.9 million at June 30, 2017. The primary objectives of our investment activities are to preserve principal, provide liquidity and maximize income without significantly increasing risk. Our primary exposure to market risk relates to fluctuations in interest rates, which are affected by changes in the general level of U.S. interest rates. Given the short-term nature of our cash, cash equivalents and marketable securities and the conservative nature of our investments, we believe that a sudden change in market interest rates would not be expected to have a material impact on our financial condition and/or results of operations. We do not own any foreign currency or other derivative financial instruments.

We do not believe that our cash, cash equivalents and marketable securities have significant risk of default or illiquidity. While we believe our cash, cash equivalents and marketable securities do not contain excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value. In addition, we maintain significant amounts of cash and cash equivalents at one or more financial institutions that are in excess of federally insured limits.

Inflation generally affects us by increasing our cost of labor and clinical trial costs. We do not believe that inflation had a material effect on our results of operations during the six months ended June 30, 2017.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Securities and Exchange Act of 1934 is (1) recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms and (2) accumulated and communicated to our management, including to our President and Chief Executive Officer, who is our principal executive officer, and to our Chief Financial Officer, who is also our principal financial and accounting officer, as appropriate, to allow timely decisions regarding required disclosure.

As of June 30, 2017, our management, with the participation of our principal executive officer and principal financial and accounting officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities and Exchange Act of 1934). 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 management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Our principal executive officer and principal financial and accounting officer have concluded, based upon the evaluation described above, that, as of June 30, 2017, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control Over Financial Reporting

There were no changes to our internal control over financial reporting that occurred during the period covered by this Quarterly Report 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

In the ordinary course of our business we may, from time to time, be involved in lawsuits, claims, and other legal proceedings related to contracts, employment arrangements, operating activities, intellectual property or other matters. While the outcome of any such proceedings cannot be predicted with certainty, as of June 30, 2017, we were not party to any legal proceedings that we would expect to have a material adverse impact on our financial position, results of operation or cash flow.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this Quarterly Report and in our other public filings before making an investment decision. Our business, prospects, financial condition, or operating results could be harmed by any of these risks, as well as other risks not currently known to us or that we currently consider immaterial. If any such risks or uncertainties actually occur, our business, financial condition or operating results could differ materially from the plans, projections and other forward-looking statements included in the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere in this report and in our other public filings and public statements. The trading price of our common stock could decline due to any of these risks, and as a result, our stockholders may lose all or part of their investment.

Risks Related to Product Development, Regulatory Approval and Commercialization

We depend heavily on the success of our current product candidates, of which brexanolone is in Phase 3 clinical development for super-refractory status epilepticus, or SRSE, and postpartum depression, or PPD; SAGE 217 is in Phase 2 clinical development for PPD, essential tremor, Parkinson's disease and major depressive disorder, or MDD; and other product candidates are at earlier stages. We cannot be certain that we will be able to complete, within the expected time-frames, our non-clinical studies or clinical trials, or to announce results on the time-lines we expect. We cannot be certain that we will be able to advance our product candidates into additional trials, or to successfully develop, or obtain regulatory approval for, or successfully commercialize, any of our product candidates.

We currently have no drug products for sale, and may never be able to successfully develop marketable drug products. Our business depends heavily on our ability to successfully complete non-clinical and clinical development of our current product candidates, and to obtain regulatory approval and successfully commercialize those product candidates. Before obtaining regulatory approvals for the commercial sale of any product candidate, we must demonstrate through non-clinical studies and clinical trials that the product candidate is safe and effective for use in each target indication. Our lead product candidate, SAGE-547 (brexanolone USAN), is currently in Phase 3 clinical development for the treatment of SRSE and PPD; SAGE-217 is in Phase 2 clinical development for MDD, essential tremor, Parkinson's disease, and PPD; and other product candidates are at earlier stages.

Drug development involves a high degree of risk. We may not be able to complete our clinical trials or announce results from our clinical trials on the time-lines we expect. For example, we may experience slower than expected enrollment and randomization of patients in our clinical trials, particularly in clinical trials where an in-patient stay or frequent site visits are required or where the patient population is small. These types of delays can lead to delays in completion of a trial and announcement of results. Similarly, there is also the potential for slower than expected clinical site initiation, delays or problems in analyzing data, and the potential need for additional analysis or data or the need to enroll additional patients in any of our clinical trials. We may also encounter delays arising from unexpected adverse events in a trial or other unexpected hurdles or issues in the conduct of any trial.

We may not be able to demonstrate the efficacy and safety of our current product candidates or any other product candidate at each stage of clinical development. Changes in formulations of our product candidates may occur such as we have done during the development of both brexanolone and SAGE-217. Changes in formulation of product candidates could delay development or require us to conduct additional clinical trials or non-clinical studies or could lead to different results than achieved with the earlier formulation. The results of clinical trials or non-clinical studies of our product candidates at any stage may not support further development or may not be sufficient to obtain regulatory approval. Clinical trials of our product candidates are, and the manufacturing and marketing of our product candidates will be, subject to extensive and rigorous review and regulation by numerous government authorities in the U.S. and in other countries where we intend to test and, if approved, market any product candidate. Drug development is a long, expensive and uncertain process, and delay or failure can occur at any stage of our clinical trials. Success in non-clinical studies or in earlier stage clinical trials may not be repeated or observed in ongoing or future studies involving the same compound or other product candidates. The drug development process can take many years, and may include post-marketing studies and surveillance, which will require the expenditure of substantial resources. Of the large number of drugs in development in the U.S., only a small percentage will successfully complete the U.S. Food and Drug Administration, or FDA, regulatory approval process and will be commercialized. Accordingly, even if we have the requisite financial resources, when needed, to continue to fund our development efforts, we cannot assure you that any of our product candidates will be successfully developed or commercialized.

We are not permitted to market our product candidates in the U.S. until we receive approval of a New Drug Application, or an NDA, from the FDA, or in any foreign countries until we receive the requisite marketing approval from such countries. Obtaining approval of an NDA in the U.S. or marketing approval in any country outside the U.S. is a complex, lengthy, expensive and uncertain process, and the FDA and regulatory authorities outside the U.S. may delay, limit or deny approval of any of our product candidates for many reasons, including, among others:

- we may not be able to demonstrate, to the satisfaction of the FDA or other regulatory authorities that our product candidates are safe and effective in any indication and that the benefits outweigh the safety risks;
- the results of our non-clinical studies and clinical trials may be negative, or may not meet the level of statistical or clinical significance required by the FDA or regulatory authorities outside the U.S. for marketing approval, or the FDA or regulatory authorities outside the U.S. may disagree with our interpretation of data from our non-clinical studies and clinical trials, or may not accept data generated at our non-clinical studies and clinical trial sites;
- the FDA or regulatory authorities outside the U.S. may determine that the number, design, size, conduct, or implementation of our non-clinical studies or clinical trials are inadequate for regulatory approval or that changes in drug formulation used in our non-clinical studies or clinical trials require additional trials or studies, even if the regulatory authorities have previously reviewed and commented on the design and details of our plans;
- the FDA or regulatory or other government authorities outside the U.S. may require that we conduct additional non-clinical studies and clinical trials prior to approval or post-approval;
- the FDA or applicable foreign regulatory authorities may not approve the formulation, labeling or specifications of any of our product candidates;
- if our NDA, if and when submitted, is reviewed by an advisory committee, the advisory committee may recommend against approval of our application or may recommend that the FDA require, as a condition of approval, additional non-clinical studies or clinical trials, limitations on approved labeling or distribution and use restrictions;
- if an NDA for one of our product candidates is submitted, the FDA may approve the product candidate for a more limited patient population than we expect;
- the FDA may require development of a Risk Evaluation and Mitigation Strategy, or REMS, as a condition of approval or post-approval;
- the FDA or applicable foreign regulatory authorities may determine that the manufacturing processes or facilities of third-party contract manufacturers with which we contract do not conform to applicable requirements, including current Good Manufacturing Practices, or cGMPs; or
- the FDA or applicable foreign regulatory agencies may change their approval policies or adopt new regulations.

Even if we receive marketing approval for our product candidates, regulatory or other governmental authorities may still impose significant restrictions on our products, including restrictions on indicated uses or marketing, or may impose ongoing requirements for potentially costly post-approval studies. For example, if we are successful in our efforts to obtain approval of brexanolone and other product candidates, we expect that, prior to product launch, the U.S. Drug Enforcement Agency, or DEA, will need to determine the controlled substance schedule of brexanolone and possibly such other product candidates, taking into account the recommendation of the FDA. The process may delay our ability to market any such product if it is approved. Any of these factors, many of which are beyond our control, could jeopardize or delay our ability to obtain regulatory approval for and successfully market our product candidates. Any such setback would have a material adverse effect on our business and prospects.

We cannot be certain that the results of our ongoing Phase 3 clinical trials of brexanolone in SRSE and PPD will be sufficient to support the submission of an NDA or marketing authorization application, or MAA, for this product candidate in SRSE and PPD, and in any event we must obtain additional clinical and non-clinical data before an NDA or MAA may be submitted.

In general, the FDA requires two pivotal trials to support approval of an NDA, but in certain circumstances, will approve an NDA based on only one pivotal trial. The trial design, endpoints and statistical analysis approach for our Phase 3 clinical trial of brexanolone in SRSE are based on an agreement we reached with the FDA under a Special Protocol Assessment. As a result, if we are successful, we believe the results from the Phase 3 clinical trial, together with other safety and efficacy data from the brexanolone development program, could form the basis of an NDA submission with the FDA for brexanolone in the treatment of SRSE. Based on scientific advice we received from the European Medicines Agency, or EMA, we also believe our current Phase 3 clinical program in SRSE, if successful, will be sufficient to support a MAA submission to the EMA seeking approval of brexanolone for SRSE in the EU. However, depending upon the outcome of the Phase 3 clinical program and the other development activities under the current program, the FDA or EMA may, despite the earlier input and advice on our study design, require that we conduct additional clinical trials or additional non-clinical studies before we can submit an NDA or MAA for brexanolone in SRSE or in order to gain approval of an NDA or MAA.

Based on input we received from the FDA during a Breakthrough Therapy meeting for brexanolone in PPD, we also believe that, if successful, the results of the Phase 3 clinical program in PPD, together with the results of prior clinical studies and ongoing non-clinical studies, will be sufficient to support the submission of an NDA with the FDA seeking marketing approval for brexanolone in PPD. We have also received **PRI**ority **ME**dicines (PRIME) designation from the EMA for brexanolone in the treatment of PPD in the EU. Incorporating scientific advice we recently received from the EMA, we believe our current Phase 3 clinical program in PPD, if successful, will be sufficient to support submission of a MAA to the EMA seeking approval of brexanolone for PPD in the EU. We anticipate that the outcome of the ongoing Phase 3 clinical trials in PPD, if supportive of an MAA filing, will inform any future regulatory discussions and potential post-marketing clinical development obligations. In either case, depending on the outcome of the Phase 3 clinical trials in PPD and the other development activities under the current program, the FDA or EMA may require that we conduct additional clinical trials or non-clinical studies before we can submit an NDA or MAA for brexanolone in PPD or in order to gain approval of the NDA or MAA in PPD, despite the input we received at the Breakthrough Designation meeting with the FDA or scientific advice from the EMA and despite our current expectations.

In any case, we will need to complete certain other clinical and non-clinical studies prior to submitting applications for regulatory approval. If the results of these additional clinical and non-clinical studies are delayed or yield unanticipated results, it may delay or prevent the submission or approval of regulatory applications for brexanolone for both SRSE and PPD.

Even if the results of our clinical trials are sufficient for us to file an NDA or MAA with respect to brexanolone in SRSE or PPD, we expect to have post-approval obligations which are likely to include additional clinical trials.

A Fast Track designation or Breakthrough Therapy designation by the FDA or PRIME designation by the EMA may not actually lead to a faster development or regulatory review or approval process.

We have received Fast Track designation for our investigational new drug application, or IND, for brexanolone in the treatment of SRSE and for SAGE-217 in the treatment of MDD. If a product is intended for the treatment of a serious or life-altering condition and the product demonstrates the potential to address unmet medical needs for this condition, the sponsor may apply for the FDA Fast Track designation. We have also received Breakthrough Therapy designation in the U.S. and PRIME designation in the EU for brexanolone in the treatment of PPD. In the future, we may seek Fast Track, Breakthrough Therapy or PRIME designations for our other product candidates as well. These designations do not necessarily lead to a faster development pathway or regulatory review process, and do not increase the likelihood of regulatory approval. The FDA may withdraw Fast Track designation or Breakthrough Therapy designation, and the EMA may withdraw PRIME designation, if the relevant agency believes that the designation is no longer supported by data from our clinical development programs.

The number of patients with the diseases and disorders for which we are developing our product candidates has not been established with precision. If the actual number of patients with the diseases or disorders we elect to pursue with our product candidates is smaller than we anticipate, we may encounter difficulties in enrolling patients in our clinical trials, thereby delaying or preventing development of our product candidates, and even if such product candidates are approved, our revenue and ability to achieve profitability may be materially adversely affected.

Our lead product, brexanolone, is currently in Phase 3 development for the treatment of patients with SRSE and PPD. The number of patients suffering from these disorders is small. We also have Phase 2 clinical programs of our next generation product candidate, SAGE-217 in MDD, essential tremor, PPD, and Parkinson's disease. There is no precise method of establishing the actual number of patients with any of these disorders in any geography over any time period. With respect to many of the indications in which we are conducting trials or plan to develop our product candidates, we have or will provide estimates of the prevalence of the disease or disorder. Our estimates as to prevalence may not be accurate, and the actual prevalence or addressable patient population for some or all of those indications, or any other indication that we elect to pursue, may be significantly smaller than our estimates. In estimating the potential prevalence of indications we are pursuing, or may in the future pursue, including our estimates as to the prevalence of SRSE, PPD, MDD, essential tremor and Parkinson's disease, we apply assumptions to available information that may not prove to be accurate. In each case, there is a range of estimates in the published literature which include estimates within the range that are lower than our estimates. For example, there are estimates in the literature on the prevalence of SRSE, particularly from studies outside the U.S., that are significantly lower than our estimates. We believe that differences in prevalence rates for SRSE among studies in the published literature may be the result of: differences from country-to-country in the prevalence or rate of occurrence of the underlying conditions and disorders that cause SRSE; challenges in making an accurate diagnosis of SRSE, particularly in a patient population with multiple complications; limitations and variations in the diagnosis coding for these conditions; the small size of the populations studied in the literature; and differences and limitations in the analytical plans underlying the various published studies. Similarly, our estimates of the prevalence of PPD are higher than estimates reported in some of the published literature or results obtained from certain studies analyzing limited claims databases. We believe this difference is due to under-diagnosis of PPD as a result of lack of screening and under-reporting, and patients being reluctant to seek treatment in clinical practice. The actual number of patients with SRSE, PPD, essential tremor, Parkinson's disease, MDD or any other indication in which we elect to pursue development of our product candidates may, however, be significantly lower than we believe. If the actual number

of patients with SRSE, PPD, essential tremor, Parkinson's disease, MDD or any other indication in which we elect to pursue development of our product candidates is lower than our estimates, we may experience difficulty in enrolling patients in our clinical trials, thereby delaying development of our product candidates. A prevalence calculation is an estimate of the total number of patients with a disease or disorder or the rate of occurrence of a disease or disorder in a population. Even if our prevalence estimates are correct, our products, if approved, may be indicated for only a subset of patients with a particular disease or condition. In addition, the intravenous, or IV, infusion mode of administration for brexanolone may further limit the number of PPD patients who will be treated with the product if it is ultimately approved. If any of our product candidates are approved and our prevalence estimates with respect to any indication or our market assumptions are not accurate, the markets for our product candidates for these indications may be smaller than we anticipate, which could limit our revenues and our ability to achieve profitability.

If serious adverse events or other undesirable side effects are identified during the use of brexanolone, SAGE-217, SAGE-718 or any of our other product candidates in clinical trials, emergency-use cases, investigator sponsored trials, expanded access programs, or non-clinical studies, it may adversely affect our development of such product candidates.

Undesirable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt non-clinical studies and clinical trials, or could make it more difficult for us to enroll patients in our clinical trials. If serious adverse events or other undesirable side effects, or unexpected characteristics of brexanolone, SAGE-217, SAGE-718 or of any of our other product candidates are observed in clinical trials, emergency-use cases, investigator sponsored clinical trials, or non-clinical studies, further clinical development of such product candidate may be delayed or we may not be able to continue development of such product candidates at all or we may also need to discontinue development of other product candidates, and the occurrence of these events could have a material adverse effect on our business. Undesirable side effects caused by our product candidates could also result in the delay or denial of regulatory approval by the FDA or other regulatory authorities or in a more restrictive label than we expect.

Positive results from early non-clinical studies and clinical trials of our product candidates are not necessarily predictive of the results of later non-clinical studies and clinical trials of our product candidates. If we cannot replicate the positive results from our earlier non-clinical studies and clinical trials of our product candidates in our later non-clinical studies and clinical trials, we may be unable to successfully develop, obtain regulatory approval for and commercialize our product candidates.

Positive results from non-clinical studies and clinical trials, including proof-of-concept trials, of our product candidates may not necessarily be predictive of the results we may obtain from subsequent non-clinical studies or clinical trials using the same product candidate or other product candidates. For example, the positive results from our Phase 1/2 clinical trial of brexanolone in SRSE and results from earlier emergency use cases, may not be replicated in our Phase 3 clinical trial. Our Phase 3 clinical trial of brexanolone differs in important ways from the Phase 1/2 clinical trial, which could cause the outcome of the Phase 3 clinical trial to differ from the earlier stage clinical trial. The Phase 3 clinical trial of brexanolone is a placebo-controlled trial, while our Phase 1/2 clinical trial was open-label, and in our Phase 3 clinical trial an intent-to-treat statistical analysis, which is a more rigorous statistical analysis, will be employed in evaluating the Phase 3 data. In addition, the formulation of brexanolone we are using in our Phase 3 trial is somewhat different than the formulation used in the Phase 1/2 trial. We do not believe the change in formulation will negatively affect trial results, but we cannot be sure. Similarly, the results from our Phase 2 clinical trials of brexanolone in severe PPD may not be replicated in our ongoing Phase 3 clinical trials of brexanolone in PPD, which involve a greater number of patients and, in one of the trials, includes patients with moderate PPD, or in the Phase 2 clinical trial of SAGE-217 in PPD. Similarly, results of the open-label proof-of-concept clinical trial of SAGE-217 in MDD using the oral solution form may not be replicated in the ongoing Part B placebo-controlled trial of SAGE-217 using the capsule form or in later clinical trials and proof-of-concept data generated with brexanolone in essential tremor may not be replicated in the Phase 2 clinical trial of SAGE-217 in essential tremor. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in later-stage clinical trials after achieving positive results in early-stage development, and we cannot be certain that we will not face similar setbacks. These setbacks have been caused by, among other things, non-clinical findings made while clinical trials were underway or safety or efficacy observations made in non-clinical studies and clinical trials that are different than in earlier trials or studies, including previously unreported or otherwise unexpected adverse events. For example, we may observe safety issues in clinical studies of our product candidates that we did not observe or appreciate in earlier stage clinical studies or in non-clinical studies. The results from non-clinical animal models may not be replicated in clinical trials. Many drug candidates, including many targeting central nervous system, or CNS, disorders, with promising non-clinical profiles have failed to demonstrate similar safety, non-toxicity and efficacy in humans. Moreover, non-clinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that believed their product candidates performed satisfactorily in non-clinical studies and clinical trials nonetheless failed to obtain FDA approval. If we fail to produce positive results in our planned non-clinical studies or clinical trials of any of our product candidates, the development timeline and regulatory approval and commercialization prospects for our product candidates, and, correspondingly, our business and financial prospects, would be materially adversely affected.

Failures or delays in the commencement or completion of our ongoing and planned clinical trials of our product candidates could cause us not to meet our expected timelines or result in increased costs to us, and could delay, prevent or limit our ability to gain regulatory approval of any product candidate and generate revenue and continue our business.

Successful completion of clinical trials at each applicable stage of development is a prerequisite to submitting an NDA to the FDA and, consequently, the ultimate approval and commercial marketing of brexanolone for SRSE or PPD and SAGE-217 or any of our other product candidates for the indications in which we develop them. We do not know whether any of our clinical trials will begin or be completed, and results announced, as planned or expected, if at all, as the commencement and completion of clinical trials and announcement of results can be delayed or prevented for a number of reasons, including, among others:

- the FDA may deny permission to proceed with our planned clinical trials or any other clinical trials we may initiate, or may place a clinical trial on hold;
- delays in filing or receiving approvals of additional INDs that may be required;
- negative results from our ongoing non-clinical studies or clinical trials;
- challenges in identifying, recruiting and enrolling patients to participate in clinical trials, including, in some cases, due to: the small size of the patient population being studied; the lack of proximity of some patients to trial sites; challenges in meeting regulatory and material requirements to commence clinical trials in countries outside the U.S.; eligibility criteria for the clinical trial; challenges associated with the nature of the clinical trial protocol; the availability of existing treatments for the relevant disease, the requirement for in-patient stays with respect to some of our trials; and competition from other clinical trial programs for similar indications, any of which could delay enrollment of patients in existing or future clinical trials of our product candidates;
- delays in reaching or failing to reach agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- inadequate quantity or quality of a product candidate or other materials necessary to conduct clinical trials, for example delays in the manufacturing of sufficient supply of finished drug product;
- difficulties obtaining Institutional Review Board, or IRB, approval, and equivalent approval for sites outside the U.S., to conduct a clinical trial at a prospective site or sites;
- delays or problems in analyzing data, or the need for additional analysis or data or the need to enroll additional patients;
- the occurrence of serious adverse events or unexpected drug-related side effects experienced by patients in a clinical trial or unexpected results in ongoing non-clinical studies;
- delays in validating endpoints utilized in a clinical trial;
- our inability to satisfy the requirements of the FDA to commence clinical trials, including chemistry, manufacturing and control, or CMC, requirements, or other FDA requirements prior to the initiation of a clinical trial;
- the FDA or applicable regulatory authorities outside the U.S. disagreeing with our clinical trial design and our interpretation of data from clinical trials, or changing the requirements for approval even after the regulatory authority has reviewed and commented on the design for our clinical trials;
- reports from non-clinical or clinical testing of other CNS therapies that raise safety or efficacy concerns; and
- difficulties retaining patients who have enrolled in a clinical trial but may be prone to withdraw due to rigors of the clinical trials, lack of efficacy, side effects, personal issues or loss of interest.

Clinical trials may also be delayed or terminated as a result of ambiguous or negative interim results. For example, in 2015, in response to an IND filed with respect to SAGE-689, the FDA requested additional non-clinical study data prior to commencement of a Phase 1 clinical trial. We are in the process of evaluating possible alternative formulations of SAGE-689, but there is no guarantee that we will be able to identify an alternative formulation for SAGE-689 or be able to continue development. In addition, a clinical trial may be suspended or terminated by us, the FDA, the IRBs at the sites where the IRBs are overseeing a clinical trial, a data and safety monitoring board, or DSMB, overseeing the clinical trial at issue or other regulatory authorities due to a number of factors, including, among others:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities that reveals deficiencies or violations that require us to undertake corrective action, including the imposition of a partial or full clinical hold;

- unforeseen safety issues, including any that could be identified in our ongoing non-clinical studies, or adverse side effects or lack of effectiveness identified in ongoing clinical trials;
- changes in government regulations or administrative actions;
- problems with clinical supply materials; and
- lack of adequate funding to continue clinical trials.

Changes in regulatory requirements or FDA guidance or unanticipated events during our non-clinical studies and clinical trials of our product candidates may occur, which may result in changes to non-clinical studies and clinical trial protocols or the need for additional non-clinical studies and clinical trials, which could result in increased costs to us and could delay our development timeline.

Changes in regulatory requirements or FDA guidance or unanticipated events during our non-clinical studies and clinical trials may force us to amend non-clinical studies and clinical trial protocols or the FDA or applicable regulatory authorities outside the U.S. may impose additional non-clinical studies and clinical trial requirements. Amendments or changes to our clinical trial protocols would require resubmission to the FDA and IRBs for review and approval, which may adversely impact the cost, timing or successful completion of clinical trials. Similarly, amendments to our non-clinical studies may adversely impact the cost, timing, or successful completion of those non-clinical studies. If we experience delays completing, or if we terminate, any of our non-clinical studies or clinical trials, or if we are required to conduct additional non-clinical studies or clinical trials, the commercial prospects for our product candidates may be harmed and our ability to generate product revenue will be delayed.

We rely, and expect that we will continue to rely, on third parties to conduct any clinical trials for our product candidates. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our products, if approved, and our business could be substantially harmed.

We do not have the ability to independently conduct clinical trials. We rely on medical institutions, clinical investigators, contract laboratories and other third parties, such as CROs, to conduct clinical trials of our product candidates. We enter into agreements with third-party CROs to provide monitors for and to manage data for our ongoing clinical trials. We rely heavily on these parties for execution of clinical trials for our product candidates and control only certain aspects of their activities. As a result, we have less direct control over the conduct, timing and completion of these clinical trials and the management of data developed through clinical trials than would be the case if we were relying entirely upon our own staff. Communicating with outside parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. Outside parties may:

- have staffing difficulties;
- fail to comply with contractual obligations;
- experience regulatory compliance issues;
- undergo changes in priorities or become financially distressed; or
- form relationships with other entities, some of which may be our competitors.

These factors may materially adversely affect the willingness or ability of third parties to conduct our clinical trials, and may subject us to unexpected cost increases that are beyond our control. Nevertheless, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the applicable protocol, legal, regulatory and scientific requirements and standards, and our reliance on CROs does not relieve us of our regulatory responsibilities. We and our CROs are required to comply with regulations and guidelines, including current Good Clinical Practices, or cGCPs, for conducting, monitoring, recording and reporting the results of clinical trials to ensure that the data and results are scientifically credible and accurate, and that the trial patients are adequately informed of the potential risks of participating in clinical trials. These regulations are enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area and comparable foreign regulatory authorities for any products in clinical development. The FDA enforces cGCP regulations through periodic inspections of clinical trial sponsors, principal investigators and trial sites. If we or our CROs or clinical sites fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, the FDA or applicable regulatory authorities outside the U.S. will determine that our clinical trials comply with cGCPs. In addition, our clinical trials must be conducted with product candidates produced under cGMPs regulations. Our failure or the failure of our CROs or contract manufacturers to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process, and could also subject us to enforcement action up to and including civil and criminal penalties.

If any of our relationships with these third-party CROs terminate, we may not be able to enter into arrangements with alternative CROs. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced 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 other reasons, and we are unable to rely on clinical data collected, we could be required to repeat, extend the duration of, or increase the size of our clinical trials and this could significantly delay commercialization and require significantly greater expenditures. In such an event, we believe that our financial results and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenue could be delayed.

We rely completely on third-party suppliers to manufacture our clinical drug supplies for our product candidates, and we intend to rely on third parties to produce non-clinical, clinical and commercial supplies of our product candidates in the future.

We do not currently have, nor do we plan to acquire, the infrastructure or capability internally to manufacture supplies of our product candidates, or any future product candidates, for use in the conduct of our non-clinical studies and clinical trials, or for future commercial use, and we rely completely on third-party suppliers for both active drug substances and finished drug products.

We will rely on our contract manufacturers to manufacture registration batches of both active drug substances and finished drug products required for regulatory approval as well as validation batches required for commercial manufacture. We expect our contract manufacturers to comply with cGMPs in the manufacture of our products. The facilities used by our contract manufacturers to manufacture the active pharmaceutical ingredient and final drug product must typically complete a pre-approval inspection by the FDA and other comparable foreign regulatory agencies to assess compliance with applicable requirements, including cGMPs, after we submit our NDA or equivalent foreign regulatory submission to the applicable regulatory agency. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or applicable foreign regulatory agencies, and pass regulatory inspections, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no direct control over our contract manufacturers' ability to maintain adequate quality control, quality assurance and qualified personnel. Furthermore, all of our third-party contract manufacturers are engaged with other companies to supply and/or manufacture materials or products for such companies, which exposes our third-party contract manufacturers to regulatory risks for the production of such materials and products. As a result, failure to satisfy the regulatory requirements for the production of those materials and products may affect the regulatory clearance of our contract manufacturers' facilities generally. If the FDA or an applicable foreign regulatory agency determines now or in the future that these facilities for the manufacture of our product candidates are noncompliant, we may need to find alternative manufacturing facilities, which would adversely impact our ability to develop and obtain regulatory approval for our product candidates and to market any approved products in the future. Our reliance on contract manufacturers also exposes us to the possibility that they, or third parties with access to their facilities, will have access to and may appropriate our trade secrets or other proprietary information.

We do not have long-term supply agreements in place with our contract manufacturers, and each batch of our product candidates is individually contracted under a quality agreement, service agreement and purchase order. If our existing contract manufacturers are not willing to enter into long-term supply agreements, or are not willing or are unable to supply drug substance or drug product to us, and we engage new contract manufacturers, such contractor manufacturers must scale up the manufacturing process, complete validation batches, pass an inspection by the FDA and other applicable foreign regulatory agencies, and be approved by regulatory authorities as our manufacturer before we are able to use drug product or drug substance they manufacture for commercial purposes which could result in significant delays or gaps in product availability. We plan to continue to rely upon contract manufacturers to manufacture commercial quantities of our products, if approved. If we are unable to maintain arrangements for third-party manufacturing, or are unable to do so on commercially reasonable terms, or are unable to obtain timely regulatory approvals in connection with our contract manufacturers, we may not be able to successfully complete development of our product candidates or commercialize our products, if approved.

Even if we receive marketing approval for our product candidates in the U.S., we may never receive regulatory approval to market our product candidates outside of the U.S.

Even if we receive marketing approval for our product candidates in the U.S., we may never receive regulatory approval to market our product candidates outside of the U.S. In order to market any product outside of the U.S., we must establish and comply with the numerous and varying safety, efficacy and other regulatory requirements of other countries. Approval procedures vary among countries and can involve additional non-clinical studies or clinical trials, additional work related to manufacturing and analytical testing on controls, and additional administrative review periods. The time required to obtain approvals in other countries might differ from that required to obtain FDA approval. Marketing approval in one country does not ensure marketing approval in another, but a failure or delay in obtaining marketing approval in one country may have a negative effect on the regulatory process in others. The marketing approval processes in other countries may implicate all of the risks detailed above regarding FDA approval in the U.S. as well as other risks. In particular, in many countries outside of the U.S., products must receive pricing and reimbursement approval before the product can be commercialized. Obtaining this approval may require additional studies and data, and can result in substantial delays in bringing products to market in such countries. Even if we are able to successfully develop our product candidates and obtain marketing approval in a

country, we may not be able to obtain pricing and reimbursement approvals in such country at acceptable levels or at all, and any pricing and reimbursement approval we may obtain may be subject to onerous restrictions such as caps or other hurdles or restrictions on reimbursement. Failure to obtain marketing and pricing approval in countries outside the U.S. or any delay or other setback in obtaining such approval would impair our ability to market our product candidates in such foreign markets. Any such impairment would reduce the size of our potential market, which could have a material adverse impact on our business, results of operations and prospects.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may not be able to generate any revenue.

We do not currently have an infrastructure for the sales, marketing and distribution of pharmaceutical products. In order to market our product candidates, if approved by the FDA or any other regulatory body, we must build our sales, marketing, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. If we are unable to establish adequate sales, marketing and distribution capabilities, whether independently or with third parties, or if we are unable to do so on commercially reasonable terms, our business, results of operations, financial condition and prospects will be materially adversely affected.

Even if we receive marketing approval for our product candidates, our approved products may not achieve broad market acceptance or reimbursement at sufficient levels, which would limit the revenue that we generate from their sales.

The commercial success of our product candidates, if approved by the FDA or other applicable regulatory authorities, will depend upon the awareness and acceptance of our approved products among the medical community, including physicians, patients and healthcare payors, and reimbursement at sufficient levels. Market acceptance of our products, if approved, will depend on a number of factors, including, among others:

- the efficacy of our products as demonstrated in clinical trials, and, if required by any applicable regulatory authority in connection with the approval for the applicable indications, our ability to demonstrate in clinical trials that our products provide patients with incremental health benefits, as compared with other available CNS therapies;
- limitations or warnings contained in the labeling approved for our products by the FDA or other applicable regulatory authorities;
- the clinical indications and size of patient populations for which our products are approved;
- availability of alternative treatments already approved or expected to be commercially launched in the near future;
- the potential and perceived advantages and limitations of our products, including in the case of brexanolone limitations arising from the IV infusion mode of administration, over current treatment options or alternative treatments, including future alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support and timing of market introduction of competitive products;
- publicity concerning our products or competing products and treatments;
- pricing and cost effectiveness;
- the effectiveness of our sales and marketing strategies;
- our ability to increase awareness of our approved products through marketing efforts;
- our ability to obtain sufficient third-party coverage or reimbursement; or
- the willingness of patients to pay out-of-pocket in the absence of third-party coverage or as co-pay amounts under third party coverage.

If our product candidates are approved, but do not achieve an adequate level of acceptance by patients, physicians and payors, or reimbursement at reasonable levels, or if the patient population for which any such product is approved is smaller than we expect, we may not generate sufficient revenue from our products to become or remain profitable. Before granting reimbursement approval, healthcare payors may require us to demonstrate that our product candidates, in addition to treating these target indications, also provide incremental health benefits to patients or healthcare costs savings. Our efforts to educate the medical community and third-party payors about the benefits of our products, if approved and to the extent permitted, may require significant resources and may never be successful.

Our product candidates may cause undesirable side effects that could delay or prevent their regulatory approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.

Undesirable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt non-clinical studies and clinical trials or could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other regulatory authorities.

Clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients and limited duration of exposure, rare and severe side effects of our product candidates may only be uncovered with a significantly larger number of patients exposed to the product candidate. If our product candidates receive marketing approval and we or others identify undesirable side effects caused by such products (or any other similar products) after such approval, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw or limit their approval of such products;
- regulatory authorities may require the addition of labeling statements, such as a “boxed” warning or a contraindication;
- we may be required to change the way such products are distributed or administered, conduct additional clinical trials or change the labeling of the products;
- we may be subject to regulatory investigations and government enforcement actions;
- we may decide to remove such products from the marketplace;
- we could be sued and held liable for injury caused to individuals exposed to or taking our product candidates; and
- our reputation may suffer.

We believe that any of these events could prevent us from achieving or maintaining market acceptance of the affected products, and could substantially increase the costs of commercializing our products and significantly impact our ability to successfully commercialize our products and generate revenues.

Even if we receive marketing approval for our product candidates, we may still face future development and regulatory difficulties.

Even if we receive marketing approval for our product candidates, regulatory authorities may still impose significant restrictions on our products, indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies. For example, if we are successful in our efforts to obtain approval of brexanolone and other product candidates, we expect that, prior to product launch, the DEA will need to determine the controlled substance schedule of brexanolone, and possibly such other product candidates, taking into account the recommendation of the FDA. The process may delay our ability to market any such product if it is approved. Our products, if approved, will also be subject to ongoing FDA requirements governing the labeling, packaging, storage and promotion of the product and record keeping and submission of safety and other post-market information. The FDA has significant post-marketing authority, including, for example, the authority to require labeling changes based on new safety information and to require post-marketing studies or clinical trials to evaluate serious safety risks related to the use of a drug. The FDA also has the authority to require, as part of an NDA or post-approval, the submission of a REMS. Any REMS required by the FDA may lead to increased costs to assure compliance with additional post-approval regulatory requirements and potential requirements or restrictions on the sale of approved products, all of which could lead to lower sales volume and revenue.

Manufacturers of drug products and their facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMPs and other regulations. If we or a regulatory agency discover problems with our products, if approved, such as adverse events of unanticipated severity or frequency, or problems with the facility where our products are manufactured, a regulatory agency may impose restrictions on our products, the manufacturer or us, including requiring withdrawal of such products from the market or suspension of manufacturing. If we, our product candidates or approved products, or the manufacturing facilities for our product candidates or products, fail to comply with applicable regulatory requirements, a regulatory agency may, among other things:

- issue warning letters or untitled letters;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw marketing approval;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to applications submitted by us;

- suspend or impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products, refuse to permit the import or export of products, or require that we initiate a product recall.

Competing therapies could emerge adversely affecting our opportunity to generate revenue from the sale of our product candidates, if approved.

The biopharmaceuticals industry is highly competitive. There are many public and private companies, universities, governmental agencies and other research organizations actively engaged in the research and development of products that may be similar to our product candidates or address similar markets. It is probable that the number of companies seeking to develop products and therapies similar to our products will increase.

Currently, there are no therapies that have been specifically approved for treatment of SRSE. However, many products approved for other indications, including general anesthetics, ketamine and anti-seizure drugs, are used off-label for various stages of status epilepticus therapy, including in the treatment of SRSE. Additionally, though not indicated, acupuncture, hypothermia, and electroconvulsive therapy are sometimes also used prior to withdrawal of care for patients with SRSE.

There are no pharmacological therapies specifically approved for the treatment of PPD. Current standard of care for PPD commonly consists of psychotherapy, however, patients with moderate or severe PPD are often prescribed antidepressant medications such as selective serotonin reuptake inhibitors, or SSRIs and serotonin and norepinephrine reuptake inhibitors, or SNRIs.

Current treatments for Parkinson's disease include levodopa/carbidopa, dopamine antagonists, MAO-B inhibitors and anticholinergics.

Common pharmacological treatments for essential tremor include primidone; propranolol; anti-anxiety medications; and anticonvulsant drugs such as gabapentin and benzodiazepines. Non-pharmaceutical interventions in the treatment of essential tremor include the responsible use of alcohol, deep brain stimulation, focused ultrasound and thalamotomy.

MDD patients are typically treated with a variety of antidepressant medications, including SSRIs and SNRIs. A number of companies are developing product candidates intended for the treatment of MDD.

In the field of neuroactive steroids focused specifically on modulation of $GABA_A$ receptors, our principal competitor is Marinus Pharmaceuticals, Inc., or Marinus. Marinus is developing a form of ganaxolone, a known $GABA_A$ positive allosteric modulator neuroactive steroid.

A number of companies are working to develop products targeted at the NMDA receptor, both antagonists and agonists.

Many of our potential competitors, alone or with their strategic partners, have substantially greater financial, technical and human resources than we do, and significantly greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of treatments and the commercialization of those treatments. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. If we are successful in developing and gaining approval of any of our product candidates, we expect competition in the indications we are pursuing will focus on efficacy, safety, convenience, availability, and price. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market.

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

Our drug development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. For some of our product candidates, we may decide to collaborate with pharmaceutical and biotechnology companies for the development and potential commercialization of those product candidates in some or all markets.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by the FDA or similar regulatory authorities outside the U.S., the potential market for the applicable product candidate, the costs and complexities of manufacturing and delivering such product

candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such collaboration could be more attractive than the one with us for our product candidate. The terms of any collaboration or other arrangements that we may establish may not be favorable to us.

We may also be restricted under existing license agreements from entering into future agreements on certain terms with potential collaborators. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable or unwilling to do so, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization in some or all markets or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense, including potentially increasing our infrastructure and investment outside the U.S. Such efforts may require diversion of a disproportionate amount of our attention away from other day-to-day activities, and require devotion of a substantial amount of our time to managing these expansion activities. If we elect to increase our expenditures to fund development or commercialization activities on our own that we had planned to develop in collaboration with a third party, 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.

We may not be successful in our efforts to identify or discover additional product candidates or 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 success of our business depends primarily upon our ability to identify, develop and commercialize products based on our proprietary chemistry platform. Although some of our product candidates are in non-clinical and clinical development, our research programs may fail to identify other potential product candidates for clinical development for a number of reasons. Our research methodology may be unsuccessful in identifying additional potential product candidates or our potential product candidates may be shown to have harmful side effects or may not have a positive risk/benefit profile or may have other characteristics that may make the product candidates unmarketable or unlikely to receive marketing approval.

Because we have limited financial and management resources, we focus on a limited number of clinical and research programs and product candidates and are currently focused on certain CNS disorders. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Research programs to identify new product candidates require substantial technical, financial and human resources. We may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful. Our resource allocation decisions may cause us to fail to capitalize on viable commercial drugs 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 drugs. 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 collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate. If any of these events occur, we may be forced to abandon our development efforts for a program or programs, which would have a material adverse effect on our business.

We are subject to healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Although we do not currently have any products on the market, once we begin commercializing our products, we will be subject to additional healthcare statutory and regulatory requirements and enforcement by the federal government and the states and foreign governments in which we conduct our business. Healthcare providers, physicians and others will play a primary role in the recommendation and prescription of our product candidates, if approved. Our future arrangements with third-party payors will expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we expect to market, sell and distribute our product candidates, if we obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- The federal anti-kickback statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federal healthcare programs such as Medicare and Medicaid.
- The federal False Claims Act imposes criminal and civil penalties, including those from civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease, or conceal an obligation to pay money to the federal government.
- The federal Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program and also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information.
- The federal false statements statute prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services.
- The federal transparency requirements, sometimes referred to as the “Sunshine Act”, under the Patient Protection and Affordable Care Act, require manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children’s Health Insurance Program to report to the Department of Health and Human Services information related to physician payments and other transfers of value and physician ownership and investment interests.
- Analogous state laws and regulations, such as state anti-kickback and false claims laws and transparency laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, and some state laws require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other healthcare providers or marketing expenditures and drug pricing.

Ensuring that our future practices and business arrangements comply with applicable healthcare laws and regulations could be costly. It is possible that governmental authorities will conclude that our business practices and arrangements do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our practices or operations, including anticipated activities to be conducted by our sales team, were 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 and exclusion from government funded healthcare programs, such as Medicare and Medicaid, any of which could substantially disrupt our operations and materially adversely affect our business and financial condition. If any of the physicians or other providers or entities with whom we expect to do business are found not to be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

The FDA and other regulatory and enforcement agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. If we are found to have improperly promoted off-label uses, we may become subject to significant liability.

The FDA and other regulatory and enforcement agencies strictly regulate the promotional claims that may be made about prescription products, if approved, and enforce laws and regulations prohibiting the promotion of off-label uses. In particular, a product may not be promoted for uses that are not approved by the FDA or such other regulatory agencies as reflected in the approved labeling of the product. If we are found to have promoted off-label uses for any product, we may become subject to significant liability. 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. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed. If we cannot successfully manage the promotion of our product candidates, if approved, in compliance with applicable laws, we could become subject to significant liability, which would materially adversely affect our business and financial condition.

Brexanolone will, and our other product candidates may be treated as controlled substances, the manufacture, use, sale, importation, exportation, prescribing and distribution of which are subject to regulation by the DEA.

Before we can commercialize brexanolone, and potentially our other product candidates, it is expected that the DEA will need to determine the controlled substance schedule, taking into account the recommendation of the FDA. This could delay our marketing of a product candidate and could potentially shorten the benefit of any regulatory exclusivity periods for which we may be eligible. If approved, brexanolone is expected to be, and our other product candidates may be, regulated as "controlled substances" as defined in the Controlled Substances Act of 1970, or CSA, and the implementing regulations of the DEA, which establish registration, security, recordkeeping, reporting, storage, distribution, importation, exportation, inventory, quota and other requirements administered by the DEA. These requirements are applicable to us, to our third-party manufacturers and to distributors, prescribers and dispensers of our product candidates. The DEA regulates the handling of controlled substances through a closed chain of distribution. This control extends to the equipment and raw materials used in their manufacture and packaging, in order to prevent loss and diversion into illicit channels of commerce. A number of states and foreign countries also independently regulate these drugs as controlled substances.

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 U.S. 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.

We expect that brexanolone will be, and our other product candidates may be, listed by the DEA as Schedule IV controlled substances under the CSA. Consequently, the manufacturing, shipping, storing, selling and using of the products will be subject to an additional regulation. Distribution, prescribing and dispensing of these drugs are also regulated. Other Schedule IV compounds include sedative hypnotics such as benzodiazepines.

Annual registration is required for any facility that manufactures, distributes, dispenses, imports or exports any controlled substance. The registration is specific to the particular location, activity and controlled substance schedule.

Because of their restrictive nature, these laws and regulations could limit commercialization of our product candidates containing controlled substances. Failure to comply with these laws and regulations could also result in withdrawal of our DEA registrations, disruption in manufacturing and distribution activities, consent decrees, criminal and civil penalties and state actions, among other consequences.

Even if approved, reimbursement policies could limit our ability to sell our product candidates.

Market acceptance and sales of our product candidates will depend on reimbursement policies and may be affected by healthcare reform measures. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels for those medications. Cost containment is a primary concern in the U.S. healthcare industry and elsewhere. Government authorities and these third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. The pricing and reimbursement environment for our products, if approved, may change in the future and become more challenging due to, among other reasons, policies advanced by the new presidential administration or federal agencies, new healthcare legislation passed by Congress or fiscal challenges faced by all levels of government health administration authorities. We cannot be sure that reimbursement will be available for our product candidates and, if reimbursement is available, the level of such reimbursement and whether patients will be required to try other therapies prior to being prescribed our product candidate. Reimbursement may impact the demand for, or the price of, our product candidates. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize our product candidates.

In many foreign countries, including Canada and European countries, the pricing of prescription pharmaceuticals is subject to strict governmental control. In these countries, pricing negotiations with governmental authorities can take six to twelve months or longer after the receipt of regulatory approval and product launch. To obtain favorable reimbursement for the indications sought or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidates with other available therapies. If reimbursement for our product candidates is unavailable in any country in which we seek reimbursement, if it is limited in scope or amount, if it is conditioned upon our completion of additional clinical trials, if it is conditioned on unreasonable caps or rebates, or if pricing is set at unsatisfactory levels, our operating results could be materially adversely affected.

Even though we have obtained orphan drug designation for brexanolone as a treatment for SE, including SRSE in the U.S., there may be limits to the regulatory exclusivity afforded by such designation, and such exclusivity will not apply to any non-orphan indications for which brexanolone may be approved.

Even though we have obtained orphan drug designation for brexanolone for treatment of SE, including SRSE, from the FDA in the U.S., there are limitations to exclusivity afforded by such designation. In the U.S., the company that first obtains FDA approval for a designated orphan drug for the specified rare disease or condition receives orphan drug marketing exclusivity for that drug in such indication for a period of seven years. This orphan drug exclusivity prevents the FDA from approving another application, including a full NDA to market the same drug for the same orphan indication, except in very limited circumstances, including when the FDA concludes that the later drug is safer, more effective or makes a major contribution to patient care. 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. To obtain approval for a drug that shares the same active moiety as an already approved orphan-designated drug, it must be demonstrated to the FDA that the drug is safer or more effective than the approved orphan designated drug, or that it makes a major contribution to patient care. In addition, 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. For example, we do not have orphan drug designation for brexanolone in PPD. In addition, orphan drug exclusive marketing rights in the U.S. 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.

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

Our future profitability may depend, in part, on our ability to gain approval of, and commercialize, our product candidates in foreign markets for which we may rely on collaboration with third parties. If we are able to gain approval for, and commercialize our product candidates in foreign markets, we would be subject to additional risks and uncertainties, including:

- the amount of reimbursement for our product candidates in foreign markets, and the nature of any limitations and caps on such reimbursement;
- our inability to directly control commercial activities to the extent we are relying on third parties;
- the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements;
- different medical practices and customs in foreign countries affecting acceptance in the marketplace;
- import or export licensing requirements;
- longer accounts receivable collection times;
- longer lead times for shipping;
- language barriers for technical training;
- reduced protection of intellectual property rights in some foreign countries;
- the existence of additional potentially relevant third party intellectual property rights;
- foreign currency exchange rate fluctuations; and
- the interpretation of contractual provisions governed by foreign laws in the event of a contract dispute.

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

Risks Related to Our Intellectual Property Rights

If we are unable to adequately protect our proprietary technology, or obtain and maintain issued patents that are sufficient to protect our product candidates, others could compete against us more directly, which would have a material adverse impact on our business, results of operations, financial condition and prospects.

We strive to protect and enhance the proprietary technologies that we believe are important to our business, including seeking patents intended to cover our products and compositions, their methods of use and any other inventions that are important to the development of our business. We may also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

Our success will depend significantly on our ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to our business; defend and enforce our patents, should they issue; preserve the confidentiality of our trade secrets; and operate without infringing the valid and enforceable patents and proprietary rights of third parties. We also rely on know-how, continuing technological innovation and in-licensing opportunities to develop, strengthen and maintain the proprietary position of our product candidates. Our owned and licensed patent applications relate to formulations and methods of use of brexanolone, and compositions and methods of use of certain other $GABA_A$ receptor modulators, including genus and species claims to SAGE-217, SAGE-105, SAGE-324 and SAGE-689 and NMDA receptor modulators, including SAGE-718.

We currently have one issued patent covering the composition of matter of SAGE-217, one issued patent covering the composition of matter of SAGE-689, and one issued patent covering methods of using SAGE-689. We do not have any other issued patents covering our lead product candidates, brexanolone, SAGE-217, SAGE-718, SAGE 105, or SAGE-324. We cannot provide any assurances that any of our pending patent applications will mature into issued patents and, if they do, that such patents will include, claims with a scope sufficient to protect our product candidates or otherwise provide any competitive advantage. For example, the patent applications that may provide coverage for brexanolone only cover particular formulations and particular methods of using such formulations to treat seizure conditions, such as SRSE and to treat depressive disorders such as PPD and MDD. As a result, if a patent issues from such patent applications, it would not prevent third-party competitors from creating, making and marketing alternative formulations, that fall outside the scope of our patent claims or practicing alternative methods. There can be no assurance that any such alternative formulations will not be equally effective as our formulation of brexanolone. Moreover, other parties have developed technologies that may be related or competitive to our approach, and may have filed or may file patent applications and may have received or may receive patents that may overlap or conflict with our patent applications, either by claiming the same methods or formulations or by claiming subject matter that could dominate our patent position. Such third-party patent positions may limit or even eliminate our ability to obtain patent protection for certain inventions.

The patent positions of biotechnology and pharmaceutical companies, including our patent position, involve complex legal and factual questions, and, therefore, the issuance, scope, validity and enforceability of any patent claims that we may obtain cannot be predicted with certainty. Patents, if issued, may be challenged, deemed unenforceable, invalidated, or circumvented. U.S. patents and patent applications may also be subject to interference proceedings, *ex parte* reexamination, or *inter partes* review proceedings, supplemental examination and challenges in district court. Patents may be subjected to opposition, post-grant review, or comparable proceedings lodged in various foreign, both national and regional, patent offices. These proceedings could result in either loss of the patent or denial of the patent application or loss or reduction in the scope of one or more of the claims of the patent or patent application. In addition, such proceedings may be costly. Thus, any patents, should they issue, that we may own or exclusively license may not provide any protection against competitors. Furthermore, an adverse decision in an interference proceeding can result in a third party receiving the patent right sought by us, which in turn could affect our ability to develop, market or otherwise commercialize our product candidates.

Furthermore, though a patent, if it were to issue, is presumed valid and enforceable, its issuance is not conclusive as to its validity or its enforceability, and it may not provide us with adequate proprietary protection or competitive advantages against competitors with similar products. Even if a patent issues, and is held to be valid and enforceable, competitors may be able to design around our patents, such as using pre-existing or newly developed technology. Other parties may develop and obtain patent protection for more effective technologies, designs or methods. We may not be able to prevent the unauthorized disclosure or use of our technical knowledge or trade secrets by consultants, vendors, former employees and current employees. The laws of some foreign countries do not protect our proprietary rights to the same extent as the laws of the U.S., and we may encounter significant problems in protecting our proprietary rights in these countries. If these developments were to occur, they could have a material adverse effect on our sales if any of our product candidates are approved in those countries.

Our ability to enforce our patent rights depends on our ability to detect infringement. It is difficult to detect infringers who do not advertise the components that are used in their products. Moreover, it may be difficult or impossible to obtain evidence of infringement in a competitor's or potential competitor's product. Any litigation to enforce or defend our patent rights, even if we were to prevail, could be costly and time-consuming, and would divert the attention of our management and key personnel from our business operations. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded if we were to prevail may not be commercially meaningful.

In addition, proceedings to enforce or defend our patents, if and when issued, could put our patents at risk of being invalidated, held unenforceable, or interpreted narrowly. Such proceedings could also provoke third parties to assert claims against us, including that some or all of the claims in one or more of our patents are invalid or otherwise unenforceable. If any of our patents, if and when issued, covering our product candidates are invalidated or found unenforceable, our financial position and results of operations would be materially and adversely impacted. In addition, if a court found that valid, enforceable patents held by third parties covered our product candidates, our financial position and results of operations would also be materially and adversely impacted.

The degree of future protection for our proprietary rights is uncertain, and we cannot ensure that:

- any of our pending patent applications, if issued as a patent, will include claims having a scope sufficient to protect our current product candidates or any other products or product candidates;
- any of our pending patent applications will issue as patents at all;
- we will be able to successfully commercialize our product candidates, if approved, before our relevant patents expire;
- we were the first to make the inventions covered by each of our pending patent applications and any patents that may issue in the future;
- we were the first to file patent applications for these inventions;
- others will not develop similar or alternative technologies that do not infringe any patents that may be issued to us;
- others will not use pre-existing technology to effectively compete against us;
- any of our patents, if issued, will be found to ultimately be valid and enforceable;
- any patents issued to us will provide a basis for an exclusive market for our commercially viable products, will provide us with any competitive advantages or will not be challenged by third parties;
- we will develop additional proprietary technologies or product candidates that are separately patentable; or
- that our commercial activities or products will not infringe upon the patents or proprietary rights of others.

We may rely upon unpatented trade secrets, and depend on unpatented know-how and continuing technological innovation to develop and maintain our competitive position, which we seek to protect, in part, by confidentiality agreements with our employees and our collaborators and consultants. It is possible that technology relevant to our business will be independently developed by a person that is not a party to such an agreement. Furthermore, if the employees and consultants who are parties to these agreements breach or violate the terms of these agreements, we may not have adequate remedies for any such breach or violation, and we could lose our trade secrets through such breaches or violations. Further, our trade secrets could otherwise become known or be independently discovered by our competitors.

We may infringe the intellectual property rights of others, which may prevent or delay our product development efforts and stop us from commercializing or increase the costs of commercializing our product candidates, if approved.

Our success will depend in part on our ability to operate without infringing the intellectual property and proprietary rights of third parties. We cannot assure you that our business, products and methods do not or will not infringe the patents or other intellectual property rights of third parties.

The pharmaceutical industry is characterized by extensive litigation regarding patents and other intellectual property rights. Other parties may allege that our product candidates or the use of our technologies infringes patent claims or other intellectual property rights held by them or that we are employing their proprietary technology without authorization. As we continue to develop and, if approved, commercialize our current product candidates and future products, competitors may claim that our technology infringes their intellectual property rights as part of business strategies designed to impede our successful commercialization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, third parties may have currently pending patent applications which may later result in issued patents that our product candidates may infringe, or which such third parties claim are infringed by our technologies. The outcome of intellectual property litigation is subject to uncertainties that cannot be adequately quantified in advance. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our product candidates, products or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid, and we may not be able to do this. Even if we are successful in these proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted in pursuing these proceedings, which could have a material adverse effect on us. In addition, we may not have sufficient resources to bring these actions to a successful conclusion.

Patent and other types of intellectual property litigation can involve complex factual and legal questions, and their outcome is uncertain. Patent litigation is costly and time-consuming. Any claim relating to intellectual property infringement that is successfully asserted against us may require us to pay substantial damages, including treble damages and attorney’s fees if we are found to be willfully infringing another party’s patents, for past use of the asserted intellectual property and royalties and other consideration going forward if we are forced to take a license. In addition, if any such claim were successfully asserted against us and we could not obtain such a license, we may be forced to stop or delay developing, manufacturing, selling or otherwise commercializing our product

candidates. In the case of trademark claims, if we are found to be infringing, we may be required to redesign, or rename, some or all of our product candidates to avoid infringing the intellectual property rights of third parties, which may not be possible and, even if possible, could be costly and time-consuming. Even if we are successful in these proceedings, we may incur substantial costs and divert management time and attention in pursuing these proceedings, which could have a material adverse effect on us.

Any of these risks coming to fruition could have a material adverse effect on our business, results of operations, financial condition and prospects.

We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We enter into confidentiality and intellectual property assignment agreements with our employees, consultants, outside scientific collaborators, and other advisors. These agreements generally provide that inventions conceived by the party in the course of rendering services to us will be our exclusive property. However, these agreements may not be honored and may not effectively assign intellectual property rights to us. For example, even if we have a consulting agreement in place with an academic advisor pursuant to which such academic advisor is required to assign to us any inventions developed in connection with providing services to us, such academic advisor may not have the right to assign such inventions to us, as it may conflict with his or her obligations to assign all such intellectual property to his or her employing institution or another party.

Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. 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.

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

The U.S. Patent and Trademark Office, or U.S. PTO, and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the patent process. There are situations in which noncompliance can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, competitors might be able to enter the market earlier than would otherwise have been the case.

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

Even if the patent applications we own or license are issued, competitors may infringe these patents. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours or our licensors is not valid, is unenforceable and/or is not infringed, 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 patent applications at risk of not issuing.

Interference proceedings provoked by third parties or brought by us may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome 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. Our defense of litigation or interference proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. 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 U.S.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock.

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

If we or one of our licensing partners initiated legal proceedings against a third party to enforce a patent, if and when issued, covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. In patent litigation in the U.S., defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge include alleged failures to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for unenforceability assertions include allegations that someone connected with prosecution of the patent withheld relevant information from the U.S. PTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the U.S. or abroad, even outside the context of litigation. Such mechanisms include re-examination, post grant review, *ex parte* reexamination, or *inter partes* review and equivalent proceedings in foreign jurisdictions, e.g., opposition proceedings. Such proceedings could result in revocation or amendment of our patents in such a way that they no longer cover our product candidates or competitive products. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to validity, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection would have a material adverse impact on our business.

We will not seek to protect our intellectual property rights in all jurisdictions throughout the world and we may not be able to adequately enforce our intellectual property rights even in the jurisdictions where we seek protection.

Filing patent applications and prosecuting and defending patents on product candidates in all countries and jurisdictions throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the U.S. could be less extensive than those in the U.S., assuming that rights are obtained in the U.S. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the U.S. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the U.S., or from selling or importing products made using our inventions in and into the U.S. or other jurisdictions. The statutory deadlines for pursuing patent protection in individual foreign jurisdictions are based on the priority date of each of our patent applications.

Competitors may use our technologies in jurisdictions where we do not pursue and obtain patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the U.S. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing. Even if we pursue and obtain issued patents in particular jurisdictions, our patent claims or other intellectual property rights may not be effective or sufficient to prevent third parties from so competing.

The laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the U.S. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of some countries, particularly developing countries, do not favor the enforcement of patents and other intellectual property protection, especially those relating to biotechnology. For example, an April 2014 report from the Office of the U.S. Trade Representative identified a number of countries, including India and China, where challenges to the procurement and enforcement of patent rights have been reported. Several countries, including India and China, have been listed in the report every year since 1989. This could make it difficult for us to stop the infringement of our patents, if obtained, or the misappropriation of our other intellectual property rights. For example, many foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. In addition, many countries limit the enforceability of patents against third parties, including government agencies or government contractors. In these countries, patents may provide limited or no benefit. Patent protection must ultimately be sought on a country-by-country basis, which is an expensive and time-consuming process with uncertain outcomes. Accordingly, we may choose not to seek patent protection in certain countries, and we will not have the benefit of patent protection in such countries.

Furthermore, proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. 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.

We are dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing our product candidates, if approved. If we breach any of the agreements under which we license the use, development and commercialization rights to our product candidates or technology from third parties or, in certain cases, we fail to meet certain development deadlines, we could lose license rights that are important to our business.

We are a party to a number of license agreements under which we are granted rights to intellectual property that are important to our business and we expect that we may need to enter into additional license agreements in the future. Our existing license agreements impose, and we expect that future license agreements will impose on us, various development, regulatory and/or commercial diligence obligations, payment of milestones and/or royalties and other obligations. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy, the licensor may have the right to terminate the license, in which event we would not be able to market products covered by the license. Our business could suffer, for example, if any current or future licenses terminate, if the licensors fail to abide by the terms of the license, 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.

As we have done previously, we may need to obtain licenses from third parties to advance our research or allow commercialization of our product candidates, and we cannot provide any assurances that third-party patents do not exist that might be enforced against our current product candidates or future products in the absence of such a license. We may fail to obtain any of these licenses on commercially reasonable terms, if at all. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In that event, we may be required to expend significant time and resources to develop or license replacement technology. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates, which could materially harm our business and the third parties owning such intellectual property rights could seek either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation.

Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues. Disputes may arise between us and our licensors regarding intellectual property subject to a license agreement, including:

- 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 licensing agreement;
- our right to sublicense patent and other rights to third parties under collaborative development relationships;
- 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; and
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and 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 have entered into several licenses to support our various programs.

We have entered into an exclusive license agreement with CyDex Pharmaceuticals, Inc., or CyDex, a wholly owned subsidiary of Ligand Pharmaceuticals, Inc., to use its Captisol technology to develop brexanolone and SAGE-689 for the field of use, which includes all fields for the treatment, prevention or diagnosis of any disease or symptom in humans or animals other than (i) the ocular treatment of any disease or condition with a formulation, including a hormone; (ii) topical ocular treatment of inflammatory conditions; (iii) treatment and prophylaxis of fungal infections in humans; and (iv) any ocular treatment for retinal degeneration. We are obligated to pay CyDex certain clinical/regulatory milestones and, if approved and marketed, single-digit royalties on brexanolone and SAGE-689. In addition, we have entered into a supply agreement with CyDex, pursuant to which CyDex supplies us with Captisol to formulate both products. Absent an alternative agreement by the parties, our rights under our exclusive license agreement terminate in the event that the supply agreement terminates. Currently, our brexanolone and SAGE-689 product candidates are formulated in Captisol. Termination of our license agreement with CyDex would have a material adverse impact on our ability to develop and commercialize brexanolone and SAGE-689 in their current formulations.

In June 2015, we entered into an exclusive license agreement with The Regents of the University of California, or the Regents under which we were granted an exclusive license to certain patent rights related to the use of allopregnanolone to treat various diseases. In exchange for such license, we paid an upfront payment and will pay annual maintenance fees until the calendar year following the first sale, if any, of a licensed product. We are obligated to make milestone payments following the achievement of specified regulatory and sales milestones. Following the first sale, if any, of a licensed product, we are obligated to pay royalties at a low single digit percentage of net sales, if any, of licensed products, subject to specified minimum annual royalty amounts.

We are also party to a non-exclusive license with the Regents. Pursuant to this agreement the Regents granted us a non-exclusive, non-transferable license under all personal property rights of the Regents covering the tangible personal property in an IND application package owned by the Regents, or the Data, and a specified quantity of cGMP grade allopregnanolone, or the Material, to (i) use the Data for reference or incorporation in an IND for use of the Material as a treatment of SE, essential tremor and/or postpartum depression and (ii) use the Material or modifications of the Material to develop a pharmaceutical formulation for clinical trials for SE, essential tremor and/or postpartum depression. This agreement requires us to pay milestone payments in connection with the first derived product, which would include brexanolone, that meets the relevant milestones and we must also pay single-digit royalties for each derived product for a period of 15 years following the first commercial sale of such derived product. Termination of our license agreement with the Regents would have a material adverse impact on our ability to develop and commercialize derived products, which would include brexanolone.

We are parties to an exclusive license agreement with Washington University, or WU, under which we have licensed certain patent families that comprise a variety of small molecule allosteric modulators of $GABA_A$ receptors and for which we have the worldwide right to develop and commercialize. A patent family that discloses and claims SAGE-689 is licensed to us under this agreement. We are obligated to pay WU certain clinical/regulatory milestones and single-digit royalties on products developed from this technology. Termination of our license agreement with WU would have a material adverse impact on our ability to develop and commercialize SAGE-689.

We may enter into additional licenses to third-party intellectual property that are necessary or useful to our business. Our current licenses and any future licenses that we may enter into impose various royalty payment, milestone, and other obligations on us. For example, as is the case for the WU license, the licensor may retain control over patent prosecution and maintenance under a license agreement, in which case, we may not be able to adequately influence patent prosecution or prevent inadvertent lapses of coverage due to failure to pay maintenance fees. If we fail to comply with any of our obligations under a current or future license agreement, the licensor may allege that we have breached our license agreement, and may accordingly seek to terminate our license. In addition, future licensors may decide to terminate their licenses with us at will. Termination of any of our current or future licenses could result in our loss of the right to use the licensed intellectual property, which could materially adversely affect our ability to develop and commercialize a product candidate or product, if approved, as well as harm our competitive business position and our business prospects.

In addition, if our licensors fail to abide by the terms of the license, if the licensors fail to prevent infringement by 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, our business could suffer.

Some intellectual property which we have licensed may have been discovered through government funded programs and thus may be subject to federal regulations such as "march-in" rights, certain reporting requirements, and a preference for U.S. industry. Compliance with such regulations may limit our exclusive rights, subject us to expenditure of resources with respect to reporting requirements, and limit our ability to contract with non-U.S. manufacturers.

Some of the intellectual property rights we have licensed may have been generated through the use of U.S. government funding and may therefore be subject to certain federal regulations. For example, some of the intellectual property rights licensed to us under the license agreements with WU and the Regents may have been generated using U.S. government funds. As a result, the U.S. government may have certain rights to intellectual property embodied in our current or future product candidates pursuant to the Bayh-Dole Act of 1980, or Bayh-Dole Act. These U.S. government rights in certain inventions developed under a government-funded program include a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any governmental purpose. In addition, the U.S. government has the right to require us to grant exclusive, partially exclusive, or non-exclusive licenses to any of these inventions to a third party if the government determines that: (i) adequate steps have not been taken to commercialize the invention; (ii) government action is necessary to meet public health or safety needs; or (iii) government action is necessary to meet requirements for public use under federal regulations (also referred to as "march-in rights"). The U.S. government also has the right to take title to these inventions if we fail, or the applicable licensor fails, to disclose the invention to the government and fail to file an application to register the intellectual property within specified time limits. In addition, the U.S. government may acquire title to these inventions in any country in which a patent application is not filed within specified time limits. Intellectual property generated under a government funded program is also subject to certain reporting requirements, compliance with which may require us, or the applicable licensor, to expend substantial resources. In addition, the U.S. government requires that any products embodying the subject invention

or produced through the use of the subject invention be manufactured substantially in the U.S. The manufacturing preference requirement can be waived if the owner of the intellectual property can show that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the U.S. or that under the circumstances domestic manufacture is not commercially feasible. This preference for U.S. manufacturers may limit our ability to contract with non-U.S. product manufacturers for products covered by such intellectual property.

If we enter into future arrangements involving government funding, and we discover compounds or drug candidates as a result of such funding, intellectual property rights to such discoveries may be subject to the applicable provisions of the Bayh-Dole Act.

If we do not obtain additional protection under the Hatch-Waxman Amendments and similar foreign legislation by extending the patent terms and if we do not obtain new chemical entity or other types of marketing and data exclusivity for our product candidates, our business may be materially harmed.

Depending upon the timing, duration and specifics of FDA marketing approval of our product candidates, one or more of the future U.S. patents we own or license may be eligible for limited patent term restoration under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, we may not be granted an extension if we were, for example, to fail to apply within applicable deadlines, to fail to apply prior to expiration of relevant patents or otherwise to fail to satisfy applicable requirements. For example, we may not be granted an extension if the active ingredient of brexanolone, allopregnanolone, is used in another drug company's product candidate and that product candidate is the first to obtain FDA approval. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or restoration or the term of any such extension is less than we request, and we do not have any other exclusivity, our competitors may obtain approval of competing products following our patent expiration, and our ability to generate revenues could be materially adversely affected.

Marketing exclusivity provisions under the Federal Food, Drug, and Cosmetic Act, or FDCA, can also delay the submission or the approval of certain marketing applications by other companies for a product with the same active moiety as a product we may in the future sell. The FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to obtain approval of an NDA for a new chemical entity, or NCE. During the exclusivity period, the FDA may not accept for review an abbreviated new drug application, or ANDA, or a 505(b)(2) NDA submitted by another company for another drug based on the same active moiety, regardless of whether the drug is intended for the same indication as the original innovator drug or for another indication, where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement to one of the patents listed with the FDA by the innovator NDA holder. The FDCA also provides three years of marketing exclusivity for a full NDA, or supplement to an existing NDA, if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the modification for which the drug received approval on the basis of the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the active agent for the original indication or condition of use. Even if we are able to obtain NCE or data exclusivity under the FDCA, the applicable five-year and three-year exclusivity periods will not delay the submission or approval of a full NDA. There is also no guarantee that any of our product candidates will qualify for marketing or data exclusivity under these provisions or that such exclusivity will alone be sufficient to for our business. If we do not have adequate patent protection or other exclusivity for our products, our business, financial condition or results of operations could be adversely affected.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biotechnology companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biotechnology industry involve both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. In addition, the U.S. has recently enacted and is currently implementing wide-ranging patent reform legislation: the Leahy-Smith America Invents Act, referred to as the America Invents Act. The America Invents Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. It is not yet clear what, if any, impact the America Invents Act will have on the operation of our business. However, the America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of any patents that may issue from our patent applications, all of which could have a material adverse effect on our business and financial condition.

In addition, recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. The full impact of these decisions is not yet known. For example, on March 20, 2012 in *Mayo Collaborative Services, DBA Mayo Medical Laboratories, et al. v. Prometheus Laboratories, Inc.*, the Court held that several claims drawn to measuring drug metabolite levels from patient samples and correlating them to drug doses were not

patentable subject matter. The decision appears to impact diagnostics patents that merely apply a law of nature via a series of routine steps and it has created uncertainty around the ability to obtain patent protection for certain inventions. Additionally, on June 13, 2013 in *Association for Molecular Pathology v. Myriad Genetics, Inc.*, the Court held that claims to isolated genomic DNA are not patentable, but claims to complementary DNA molecules are patent eligible because they are not a natural product. The effect of the decision on patents for other isolated natural products is uncertain. On June 19, 2014 in *Alice Corporation Pty. Ltd. v. CLS Bank International, et al.*, a case involving patent claims directed to a method for mitigating settlement risk, the Court held that the patent eligibility of claims directed to abstract ideas, products of nature, and laws of nature should be determined using the same framework set forth in Prometheus. The U.S. PTO recently issued a set of guidelines setting forth procedures for determining subject matter eligibility of claims directed to abstract ideas, products of nature, and laws of nature in line with the Prometheus, Myriad, and Alice decisions. The guidance does not limit the application of Myriad to DNA but, rather, applies the decision to other natural products.

In addition to increasing uncertainty with regard to our ability to obtain future patents, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on these and other decisions by the U.S. Congress, the federal courts and the U.S. PTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce any patents that may issue in the future.

We may be subject to damages resulting from claims that we or our employees have wrongfully used or disclosed alleged confidential information or trade secrets of their former employers.

Most of our employees have been previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. We also engage advisors and consultants who are concurrently employed at universities or who perform services for other entities.

Although we are not aware of any claims currently pending against us, we may be subject to claims that we or our employees, advisors or consultants have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of a former employer or other third party. We may be subject to claims that an employee, advisor or consultant performed work for us that conflicts with that person's obligations to a third party, such as an employer, and thus, that the third party has an ownership interest in the intellectual property arising out of work performed for us. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management. If we fail in defending such claims, in addition to paying monetary claims, we may lose valuable intellectual property rights or personnel. A loss of key personnel or their work product could hamper or prevent our ability to develop and commercialize our product candidates, which would materially adversely affect our efforts and results.

Numerous factors may limit any potential competitive advantage provided by our intellectual property rights.

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, provide a barrier to entry against our competitors or potential competitors, or permit us to maintain our competitive advantage. Moreover, if a third party has intellectual property rights that cover the practice of our technology, we may not be able to fully exercise or extract value from our intellectual property rights. The following examples are illustrative:

- others may be able to develop and/or practice technology that is similar to our technology or aspects of our technology but that is not covered by the claims of any patents that have, or may, issue from our patent applications;
- we might not have been the first to make the inventions covered by a pending patent application that we own;
- we might not have been the first to file patent applications covering an invention;
- others may independently develop similar or alternative technologies without infringing our intellectual property rights;
- pending patent applications that we own or license may not lead to issued patents;
- patents, if issued, that we own or license may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- third parties may compete with us in jurisdictions where we do not pursue and obtain patent protection;
- we may not be able to obtain and/or maintain necessary or useful licenses on reasonable terms or at all;
- third parties may assert an ownership interest in our intellectual property and, if successful, such disputes may preclude us from exercising exclusive rights over that intellectual property;

- we may not develop or in-license additional proprietary technologies that are patentable; and
- the patents of others may have an adverse effect on our business.

Should any of these events occur, they could significantly harm our business and results of operations.

General Company-Related Risks

As we plan for a potential commercial launch of our product candidates, we will need to develop and expand our company, and we may encounter difficulties in managing this development and expansion, which could disrupt our operations.

As we plan for a potential commercial launch of our product candidates, if approved, we expect to continue to increase our number of employees and the scope of our operations. To successfully execute our activities, and to manage our anticipated expansion, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. In addition, our management may need to divert a disproportionate amount of its attention away from its day-to-day activities, and devote a substantial amount of time to managing these expansion activities. Due to our limited resources, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. This may result in weaknesses in our infrastructure, give rise to operational mistakes or delays, loss of business opportunities, loss of employees and reduced productivity among remaining employees. The physical expansion of our operations may lead to significant costs, and may divert financial resources from other projects, such as the development of our product candidates. If our management is unable to effectively manage our expected expansion, our expenses may increase more than expected, and our ability to successfully develop and gain regulatory approval of our product candidates and generate or increase our revenue, if such product candidates are approved, could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize our product candidates, if approved, and to compete effectively will depend, in part, on our ability to effectively manage the future expansion of our company.

Our future success depends on our ability to retain our President and Chief Executive Officer and to attract, retain and motivate qualified personnel.

We are highly dependent on Dr. Jeffrey M. Jonas, our Chief Executive Officer, President, and Director. We have entered into an employment agreement with Dr. Jonas, but he may terminate his employment with us at any time. Although we do not have any reason to believe that we will lose the services of Dr. Jonas in the foreseeable future, the loss of his services might impede the achievement of our research, development and commercialization objectives. We do not have any key-man life insurance on Dr. Jonas. We rely on consultants and advisors, including scientific, clinical and regulatory advisors, to assist us in formulating and implementing our development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us, and may not be subject to our standard non-compete agreements. Recruiting and retaining qualified personnel will also be critical to our success. We may not be able to attract and retain these personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific personnel from universities and research institutions. Failure to succeed in clinical trials may make it more challenging to recruit and retain qualified scientific personnel.

Our employees may engage in misconduct or other improper activities, including violating applicable regulatory standards and requirements or engaging in insider trading, which could significantly harm our business.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to: comply with the regulations of the FDA and applicable non-U.S. regulators; provide accurate information to the FDA and applicable non-U.S. regulators; comply with healthcare fraud and abuse and anti-kick-back laws and regulations, in the U.S. and abroad; comply with anti-bribery and anti-corruption laws and regulations in the U.S. 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. Employee misconduct could also involve the improper use of, including trading on, information obtained in the course of clinical trials or other material information, which could result in regulatory sanctions and serious harm to our reputation. We have adopted a code of conduct, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may be ineffective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with 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 significant impact on our business, including the imposition of significant fines or other sanctions.

We face potential product liability exposure, and, if claims are brought against us, we may incur substantial liability.

The use of our product candidates in clinical trials and the sale of our products, if approved, expose us to the risk of product liability claims. Product liability claims might be brought against us by patients, healthcare providers or others selling or otherwise coming into contact with our product candidates. For example, we may be sued if any product candidate we study or product we develop allegedly causes injury or is found to be otherwise unsuitable during clinical trials, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, including as a result of interactions with alcohol or other drugs, knowledge of risks, negligence, strict liability and a breach of warranties. Claims could also be asserted under state consumer protection acts. If we become subject to product liability claims and cannot successfully defend ourselves against them, we could incur substantial liabilities. In addition, regardless of merit or eventual outcome, product liability claims may result in, among other things:

- withdrawal of patients from our clinical trials, or difficulty in enrolling clinical trials;
- substantial monetary awards to patients or other claimants;
- decreased demand for our products following marketing approval, if obtained;
- damage to our reputation and exposure to adverse publicity;
- increased FDA warnings on product labels;
- litigation costs;
- distraction of management's attention from our primary business;
- loss of revenue; and
- the inability to successfully gain approval and commercialize our product candidates or any future product candidates, if approved.

We maintain product liability insurance coverage for our clinical trials with a $10 million annual aggregate coverage limit. Nevertheless, our insurance coverage may be insufficient to reimburse us for any expenses or losses we may suffer. Moreover, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses, including if insurance coverage becomes increasingly expensive. If and when we obtain marketing approval for our product candidates, we intend to expand our insurance coverage to include the sale of commercial products; however, we may not be able to obtain this product liability insurance on commercially reasonable terms. Large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side effects. The cost of any product liability litigation or other proceedings, even if resolved in our favor, could be substantial, particularly in light of the size of our business and financial resources. A product liability claim or series of claims brought against us could cause our stock price to decline and, if we are unsuccessful in defending such a claim or claims and the resulting judgments exceed our insurance coverage, our financial condition, business and prospects could be materially adversely affected.

We will continue to incur significant costs as a result of operating as a public company, and our management team is required to devote substantial time to compliance initiatives.

As a public company, we incur significant legal, accounting and other expenses. In addition, the Sarbanes-Oxley Act of 2002 and rules subsequently implemented by the Securities and Exchange Commission and The NASDAQ Stock Market have imposed various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations cause us to incur significant legal and financial compliance costs, and make some activities more time-consuming and costly.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404, we are required to furnish a report by our management on our internal control over financial reporting, including an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. We conduct a process each year to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we dedicate internal resources, engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that neither we nor our independent registered public accounting firm will be able to conclude that our internal control over financial reporting is effective as required by Section 404. This could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our consolidated financial statements.

Our ability to use our net operating loss carryforwards and certain tax credit carryforwards may be subject to limitation.

As of December 31, 2016, we had federal and state net operating loss carryforwards of $235.4 million and $234.3 million, respectively, which begin to expire in 2031. As of December 31, 2016, we also had federal and state research and development tax credit carryforwards of $4.1 million and $1.6 million, respectively, which begin to expire in 2031 and 2027, respectively. As of December 31, 2016, we had federal orphan drug tax credit carryforwards of $29.8 million, which begin to expire in 2034. Under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, changes in our ownership may limit the amount of our net operating loss carryforwards and tax credit carryforwards that could be utilized annually to offset our future taxable income, if any. This limitation would generally apply in the event of a cumulative change in ownership of our company of more than 50% within a three-year period. Any such limitation, whether as the result of our IPO, follow-on offerings, prior private placements, sales of our common stock by certain of our existing stockholders or additional sales of our common stock by us, may significantly reduce our ability to utilize our net operating loss carryforwards and research and development tax credit carryforwards before they expire and could have a material adverse effect on our results of operations in future years. We have performed an analysis of ownership changes through December 31, 2016 and believe that there have been changes in ownership in accordance with Section 382. However, we do not expect that these changes in ownership will materially impact our ability to utilize our net operating loss carryforwards, research and development credits or orphan drug credits, prior to their expiration, although there can be no assurance in this regard. Subsequent ownership changes, as defined by Section 382, may potentially limit the amount of net operating loss carryforwards that could be utilized annually to offset future taxable income.

Unfavorable U.S. or global economic conditions could adversely affect our business, financial condition or results of operations.

Our results of operations could be adversely affected by general conditions in the U.S. and global economy and financial markets. A severe or prolonged economic downturn could result in a variety of risks to our business, including, weakened demand for our products, if any, and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our products if we receive marketing approval. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

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

Natural disasters could severely disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as the manufacturing facilities of our third-party contract manufacturers, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place may prove inadequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business.

Our internal computer systems, or those of our third-party CROs or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our development programs.

Despite the implementation of security measures, our internal computer systems and those of our third-party CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such system failure, accident, or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our programs. For example, the loss of clinical trial data for our product candidates could result in delays in our regulatory submission and approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications or other data or applications relating to our technology or product candidates, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the further development of our product candidates could be delayed.

We may acquire businesses or products, or form strategic alliances, in the future, and we may not realize the benefits of such acquisitions.

We may acquire additional businesses or products, form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business. If we acquire businesses with promising markets or technologies, we may not be able to realize the benefit of acquiring such businesses if we are unable to successfully integrate them with our existing operations and company culture. We may encounter numerous difficulties in developing, manufacturing and marketing any new products resulting from a strategic alliance or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. We cannot guarantee that, following any such acquisition, we will achieve the expected synergies to justify the transaction.

Risks Related to Our Financial Position and Need for Capital

We are a biopharmaceutical company with a limited operating history, and have not generated any revenue from product sales. We have incurred significant operating losses since our inception, and anticipate that we will incur continued losses for the foreseeable future.

We are a biopharmaceutical company with a limited operating history on which investors can base an investment decision. Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. We were incorporated in April 2010. Our operations to date have been limited primarily to organizing and staffing our company, raising capital and conducting research and development activities and clinical trials of our product candidates. We have never generated any revenue from product sales. We have not obtained regulatory approvals for any of our product candidates.

We have funded our operations to date through proceeds from sales of common stock, redeemable convertible preferred stock and, to a lesser extent, the issuance of convertible notes. From our inception through June 30, 2017, we had received net proceeds of $643.3 million from such transactions. As of June 30, 2017, our cash, cash equivalents and marketable securities were $285.9 million. We have incurred significant net losses in each year since our inception, including net losses of $127.0 million for the six months ended June 30, 2017 and $159.0 million for the year ended December 31, 2016. Substantially all of our operating losses have resulted from costs incurred in connection with our research and development programs and from general and administrative costs associated with our operations. We expect to incur increasing levels of operating losses over the next several years and for the foreseeable future. Our prior losses, combined with expected future losses, have had, and will continue to have, an adverse effect on our stockholders' deficit and working capital. We expect our research and development expenses to significantly increase in connection with clinical trials of our product candidates and efforts to seek regulatory approval for any product candidates that successfully complete clinical development. We also expect our general and administrative costs to increase as we expand our operations, including in anticipation of potential future commercialization efforts. In addition, if we obtain marketing approval for our product candidates, we will incur significant sales, marketing and outsourced-manufacturing expenses. As a public company, we incur additional legal and accounting costs associated with operating as a public company. As a result, we expect to continue to incur significant and increasing operating losses for the foreseeable future. Because of the numerous risks and uncertainties associated with developing pharmaceutical products, we are unable to predict the extent of any future losses or when we will become profitable, if at all. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

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

- initiate and successfully complete all efficacy and safety clinical trials and non-clinical studies required to file for, and obtain, U.S. and foreign marketing approval for our product candidates;
- commercialize our product candidates, if approved, by developing a sales force or entering into collaborations with third parties; and
- achieve market acceptance of our product candidates in the medical community and with third-party payors.

Absent our entering into a collaboration or partnership agreement, we expect to incur significant sales and marketing costs as we prepare to commercialize our product candidates, if and when approved. Even if we successfully complete clinical development of our product candidates, and our product candidates are approved for commercial sale, and despite expending these costs, our product candidates may not be commercially successful. We may not achieve profitability soon after generating product sales, if ever. If we are unable to generate product revenue, we will not become profitable, and may be unable to continue operations without continued funding.

We will need to raise additional funding, which may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development efforts or other operations.

We are currently advancing our product candidates through non-clinical and clinical development, and preparing for a potential commercial launch if our product candidates are successfully developed and approved. Developing small molecule products and preparing for a potential launch are expensive, and we expect our research and development and general and administrative expenses to increase substantially in connection with our ongoing activities, particularly as we continue to advance our product candidates in clinical trials and if we generate positive data in our clinical programs. Depending on the status of development efforts, regulatory approval or, if approved, commercialization of our product candidates, as well as the progress we make in selling our products, if approved, we will also require additional capital to fund operating needs. We may also need to raise additional funds if we choose to pursue additional indications and/or geographies for our product candidates, identify new potential opportunities or otherwise expand our activities more rapidly than we presently anticipate.

As of June 30, 2017, our cash, cash equivalents and marketable securities were $285.9 million. Based on our current operating plans, we expect that our existing cash, cash equivalents and marketable securities will be sufficient to fund our anticipated level of operations into the second quarter of 2018. Our current operating plan does not contemplate other development activities we may pursue or that all of the currently planned activities will proceed at the same pace, or that all of the activities will be fully initiated or completed during that time. We may use available capital resources sooner than we expect under our current operating plan. In addition, our operating plan may change. We may need or choose to seek additional funds sooner than planned, through public or debt financings, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements or a combination of these approaches. In any event, we expect to require additional capital to expand development efforts, obtain regulatory approval for, and to commercialize, our product candidates. Raising funds in the current economic environment may present additional challenges. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or in light of specific strategic considerations.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our stockholders. The incurrence of indebtedness would result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborative partners or otherwise at an earlier stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects.

If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of any product, if approved, or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, financial condition and results of operations.

As discussed in Note 1 of the Notes to the Unaudited Condensed Consolidated Financial Statements under Accounting Standards Update, or ASU, 2014-15, *Presentation of Financial Statements—Going Concern* (Subtopic 205-40), or, ASC 205-40, we have the responsibility to evaluate whether conditions or events raise substantial doubt about our ability to meet our future financial obligations as they become due within one year after the date the financial statements are issued. Under ASC 205-40, this evaluation initially cannot take into consideration the potential mitigating effects of plans that have not been fully implemented as of the date the financial statements are issued. Since we currently anticipate that our existing capital resources will enable us to meet our planned operational expenses and capital expenditures, based on our current operating plans, only into the second quarter of calendar year 2018, we have determined that this cash runway of less than 12 months along with our accumulated deficit, history of losses, and future expected losses meet the ASC 205-40 standard for raising substantial doubt about our ability to continue as a going concern within one year of the issuance date of these unaudited condensed consolidated financial statements. While we have plans in place to mitigate this risk, which primarily consist of raising additional capital through a combination of equity or debt financings, and, depending on the availability and level of additional financings, potentially new collaborations and reducing cash expenditures, there is no guarantee that we will be successful in these mitigation efforts.

Raising additional capital may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights.

We may seek additional capital through a combination of private and public equity offerings, debt financings, collaborations and strategic and licensing arrangements. To the extent that we raise additional capital through the sale of common stock or securities convertible or exchangeable into common stock, the ownership interest of our stockholders in our company will be diluted. In addition, the terms of any such securities may include liquidation or other preferences that materially adversely affect the rights of our stockholders. Debt financing, if available, would increase our fixed payment obligations and 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 additional funds through collaboration, strategic partnerships and licensing arrangements with third parties, we may have to relinquish valuable rights to our product candidates, our intellectual property, future revenue streams or grant licenses on terms that are not favorable to us.

Risks Related to Our Common Stock

Market volatility may affect our stock price and the value of an investment in our stock.

The market price for our common stock, similar to that of other biopharmaceutical companies, is volatile. The market price of our common stock may fluctuate significantly in response to a number of factors, most of which we cannot control, including, among others:

- plans for, progress of, timing of, changes to, delays in or results from, non-clinical studies and clinical trials of our product candidates, including any adverse events, delays or announcements related to such studies or trials;
- any delay in filing for regulatory approval of our product candidates;
- the failure or delay of the FDA or any other regulatory authority to approve our product candidates, or any unexpected limitation on the approved indication or onerous condition of approval;
- announcements of new products, technologies, commercial relationships, acquisitions or other events by us or our competitors;
- the success or failure of our CNS therapies;
- regulatory or legal developments in the U.S. and other countries;
- adverse developments with respect to our intellectual property portfolio or failure to obtain or loss of exclusivity;
- failure of our product candidates, if approved, to achieve commercial success;
- fluctuations in stock market prices and trading volumes of similar companies;
- general market conditions and overall fluctuations in U.S. equity markets;
- changes in healthcare laws affecting pricing, reimbursement or access;
- variations in our quarterly operating results;
- changes in our financial guidance or securities analysts' estimates of our financial performance;
- changes in accounting principles;
- our ability to raise additional capital and the terms on which we can raise it;
- sales of large blocks of our common stock, including sales by our executive officers, directors and significant stockholders;
- additions or departures of key personnel;
- discussion of us or our stock price by the press and by online investor communities; and
- other risks and uncertainties described in these risk factors.

Our executive officers, directors, principal stockholders and their affiliates may continue to exercise significant control over our company, which will limit the ability of our stockholders to influence corporate matters and could delay or prevent a change in corporate control.

Our executive officers, directors and principal stockholders, if they act together, given their existing holdings, may be able to influence significantly our management and affairs and the outcome of matters submitted to our stockholders for approval, including the election of directors and any sale, merger, consolidation, or sale of all or substantially all of our assets. Some of these stockholders acquired some or all of their shares of common stock for substantially less than the price of the shares of common stock acquired in our IPO or any follow-on offering, and these stockholders may have interests, with respect to their common stock, that are different from those of investors in our IPO or any follow-on offering and the concentration of voting power among these stockholders may have an adverse effect on the price of our common stock. In addition, this concentration of ownership might adversely affect the market price of our common stock by:

- delaying, deferring or preventing a change of control of us;
- impeding a merger, consolidation, takeover or other business combination involving us; or
- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us.

Future sales of our common stock may cause our stock price to decline.

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur could significantly reduce the market price of our common stock, and impair our ability to raise adequate capital through the sale of additional equity securities.

We have broad discretion in how we use the proceeds from our follow-on public offerings, and may not use these proceeds effectively, which could affect our results of operations and cause our stock price to decline.

We have considerable discretion in the application of the net proceeds from our follow-on public offerings. We may use the net proceeds for purposes that do not yield a significant return or any return at all for our stockholders. In addition, pending their use, we may invest the net proceeds from the follow-on offerings in a manner that does not produce income or that loses value.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, even one that may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may delay or prevent an acquisition of us or a change in our management. These provisions include a classified board of directors, a prohibition on actions by written consent of our stockholders and the ability of our board of directors to issue preferred stock without stockholder approval. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us. Although we believe these provisions collectively provide for an opportunity to obtain greater value for stockholders by requiring potential acquirers to negotiate with our board of directors, they would apply even if an offer rejected by our board were considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management.

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

We have never declared or paid any cash dividend on our common stock, and do not currently intend to do so in the foreseeable future. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business, and do not anticipate declaring or paying any cash dividends in the foreseeable future. Therefore, the success of an investment in shares of our common stock will depend upon any future appreciation in their value. There is no guarantee that shares of our common stock will appreciate in value or even maintain the price at which an investor purchased them.

If equity research analysts stop publishing research or reports about our business or if they issue unfavorable commentary or downgrade our common stock, the price of our common stock could decline.

The trading market for our common stock relies in part on the research and reports that equity research analysts publish about us and our business. We do not control these analysts. The price of our common stock could decline if one or more equity research analysts downgrade our common stock or if analysts issue other unfavorable commentary or cease publishing reports about us or our business.

Item 6. Exhibits

The exhibits filed as part of this Quarterly Report are set forth on the Exhibit Index, which is incorporated herein 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.

SAGE THERAPEUTICS, INC.

August 3, 2017

By: /s/ Jeffrey M. Jonas
Jeffrey M. Jonas, M.D.
Chief Executive Officer, President and Director
(Principal Executive Officer)

August 3, 2017

By: /s/ Kimi Iguchi
Kimi Iguchi
Chief Financial Officer
(Principal Financial and Accounting Officer)

EXHIBIT INDEX

Exhibit No.	Description	Incorporated by Reference to: Form or Schedule	Exhibit No.	Filing Date with SEC	SEC File Number
10.1*	Sixth Amendment to Lease by and between ARE-MA Region No. 38, LLC and the Registrant dated May 8, 2017				
10.2*	2014 Employee Stock Purchase Plan				
10.3*	Offer letter by and between the Registrant and Michael Cloonan, dated March 21, 2017				
10.4*	Severance and Change in Control Agreement between the Registrant and Michael Cloonan, dated March 21, 2017				
31.1*	Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. 1350).				
31.2*	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. 1350).				
32.1+	Certification of Principal Executive Officer and Principal Financial Officer pursuant to Section 906 of the Sarbanes Oxley Act of 2002 (18 U.S.C. 1350).				
101.INS*	XBRL Instance Document.				
101.SCH*	XBRL Taxonomy Extension Schema Document.				
101.CAL*	XBRL Taxonomy Extension Calculation Document.				
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document.				
101.LAB*	XBRL Taxonomy Extension Labels Linkbase Document.				
101.PRE*	XBRL Taxonomy Extension Presentation Link Document.				

* Filed herewith.

\+ The certification furnished in Exhibit 32.1 hereto is deemed to be furnished with this Quarterly Report on Form 10-Q and will not be deemed to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent that the Registrant specifically incorporates it by reference.

SIXTH AMENDMENT TO LEASE

THIS SIXTH AMENDMENT TO LEASE (this "**Sixth Amendment**") is made as of May 8, 2017, by and between **ARE-MA REGION NO. 38, LLC**, a Delaware limited liability company ("**Landlord**"), and **SAGE THERAPEUTICS, INC.**, a Delaware corporation ("**Tenant**").

RECITALS

A. Landlord and Tenant are now parties to that certain Lease Agreement dated as of December 21, 2011, as amended by that certain First Amendment to Lease dated as of October 26, 2012, as further amended by that certain Second Amendment to Lease dated as of May 9, 2013, as further amended by that certain Third Amendment to Lease dated as of September 9, 2015 (the "**Third Amendment**"), as further amended by that certain Fourth Amendment to Lease dated as of October 27, 2015 (the "**Fourth Amendment**"), and as further amended by that certain Fifth Amendment to Lease dated as of December 9, 2015 (as amended, the "**Lease**"). Pursuant to the Lease, Tenant leases certain premises consisting of approximately 22,067 rentable square feet of space ("**Existing Premises**") in a building located at 215 First Street, Cambridge, Massachusetts ("**Building**"). The Existing Premises are more particularly described in the Lease. Capitalized terms used herein without definition shall have the meanings defined for such terms in the Lease.

B. Landlord and Tenant desire, subject to the terms and conditions set forth below, to amend the Lease to, among other things, expand the size of the Existing Premises by adding approximately 32,876 rentable square feet of space on the third floor of the Building, consisting of (i) that portion of the third floor containing approximately 8,200 rentable square feet (the "**Initial Fifth Expansion Premises**"), and (ii) that portion of the third floor containing approximately 24,676 rentable square feet (the "**Subsequent Fifth Expansion Premises**"), all as shown on **Exhibit A** attached to this Sixth Amendment. The Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises may be collectively referred to herein as the "**Fifth Expansion Premises**."

NOW, THEREFORE, in consideration of the foregoing Recitals, which are incorporated herein by this reference, the mutual promises and conditions contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant hereby agree as follows:

1. **Fifth Expansion Premises**. In addition to the Existing Premises, commencing on (a) the Initial Fifth Expansion Premises Commencement Date (as defined below) with respect to the Initial Fifth Expansion Premises, and (b) the Subsequent Fifth Expansion Premises (as defined below) with respect to the Subsequent Fifth Expansion Premises, Landlord leases to Tenant, and Tenant leases from Landlord, the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises.

2. **Delivery**.

a. **Initial Fifth Expansion Premises**. Landlord shall use reasonable efforts to deliver ("**Delivery**" or "**Deliver**") the Initial Fifth Expansion Premises to Tenant on or before the Target Initial Fifth Expansion Premises Commencement Date with Landlord's Work in the Initial Fifth Expansion Premises Substantially Completed. If Landlord fails to timely Deliver the Initial Fifth Expansion Premises, Landlord shall not be liable to Tenant for any loss or damage resulting therefrom, and the Lease with respect to the Initial Fifth Expansion Premises shall not be void or voidable. As used herein, the terms "**Landlord's Work**," "**Tenant Delays**" and "**Substantially Completed**" shall have the meanings set forth for such terms in the work letter attached to this Sixth Amendment as **Exhibit B** ("**Fifth Expansion Premises Work Letter**").

The "**Initial Fifth Expansion Premises Commencement Date**" shall be the earlier to occur of: (i) the date that Landlord delivers the Initial Fifth Expansion Premises to Tenant with Landlord's Work with respect to the Initial Fifth Expansion Premises Substantially Completed, or (ii) the date that Landlord could have delivered the Initial Fifth Expansion Premises to Tenant with Landlord's Work with respect to the Initial Fifth Expansion Premises Substantially Completed but for Tenant Delays. The "**Target Initial Fifth Expansion Premises Commencement Date**" shall be August 15, 2017. Notwithstanding the foregoing, Tenant acknowledges and agrees that the Initial Fifth Expansion Premises Commencement Date may occur prior to the Target Initial Fifth Expansion Premises Commencement Date if Landlord's Work in the Initial Fifth Expansion Premises is Substantially Completed prior to the Target Initial Fifth Expansion Premises Commencement Date.

Except as set forth in the Fifth Expansion Premises Work Letter: (i) Tenant shall accept the Initial Fifth Expansion Premises in their condition as of the Initial Fifth Expansion Premises Commencement Date; (ii) Landlord shall have no obligation for any defects in the Initial Fifth Expansion Premises; and (iii) Tenant's taking possession of the Initial Fifth Expansion Premises shall be conclusive evidence that Tenant accepts the Initial Fifth Expansion Premises and that the Initial Fifth Expansion Premises were in good condition at the time possession was taken. The Initial Fifth Expansion Premises shall be delivered to Tenant without any furniture.

b. Subsequent Fifth Expansion Premises. Landlord shall use reasonable efforts to Deliver the Subsequent Fifth Expansion Premises to Tenant on or before the Target Subsequent Fifth Expansion Premises Commencement Date with Landlord's Work in the Subsequent Fifth Expansion Premises Substantially Completed. If Landlord fails to timely Deliver the Subsequent Fifth Expansion Premises, Landlord shall not be liable to Tenant for any loss or damage resulting therefrom, and the Lease with respect to the Subsequent Fifth Expansion Premises shall not be void or voidable.

The "**Subsequent Fifth Expansion Premises Commencement Date**" shall be the earlier to occur of: (i) the date that Landlord delivers the Subsequent Fifth Expansion Premises to Tenant with Landlord's Work with respect to the Subsequent Fifth Expansion Premises Substantially Completed, (ii) the date that Landlord could have delivered to Subsequent Fifth Expansion Premises to Tenant with Landlord's Work with respect to the Subsequent Fifth Expansion Premises Substantially Completed but for Tenant Delays, or (iii) the date that Tenant actually occupies the Subsequent Fifth Expansion Premises (i.e., employees of Tenant have been moved into offices and cubes in all or a portion of the Subsequent Fifth Expansion Premises). The "**Target Subsequent Fifth Expansion Premises Commencement Date**" shall be January 1, 2018. Notwithstanding anything to the contrary contained herein, if Landlord notifies Tenant prior to the Target Subsequent Fifth Expansion Premises Commencement Date that Landlord's Work with respect to the Subsequent Fifth Expansion Premises has been Substantially Completed, Tenant may elect, by written notice to Landlord, to have the Subsequent Fifth Expansion Premises Commencement Date occur prior to the Target Subsequent Fifth Expansion Premises Commencement Date (provided, however, that Landlord shall have no obligation to Substantially Complete Landlord's Work in the Subsequent Fifth Expansion Premises prior to the Target Subsequent Fifth Expansion Premises Commencement Date).

Except as set forth in the Fifth Expansion Premises Work Letter: (i) Tenant shall accept the Subsequent Fifth Expansion Premises in their condition as of the Subsequent Fifth Expansion Premises Commencement Date; (ii) Landlord shall have no obligation for any defects in the Subsequent Fifth Expansion Premises; and (iii) Tenant's taking possession of the Subsequent Fifth Expansion Premises shall be conclusive evidence that Tenant accepts the Subsequent Fifth Expansion Premises and that the Subsequent Fifth Expansion Premises were in good condition at the time possession was taken. The Subsequent Fifth Expansion Premises shall be delivered to Tenant without any furniture.

c. Upon request of Landlord, Tenant shall execute and deliver a written acknowledgment of the Initial Fifth Expansion Premises Commencement Date, the Subsequent Fifth Expansion Premises Commencement Date and the expiration date of the Lease in a form substantially similar to the form of the "Acknowledgement of Commencement Date" attached to the Lease as **Exhibit G**; provided, however, Tenant's failure to execute and deliver such acknowledgment shall not affect Landlord's rights hereunder.

Tenant agrees and acknowledges that neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the condition of all or any portion of the Fifth Expansion Premises, and/or the suitability of the Fifth Expansion Premises for the conduct of Tenant's business, and Tenant waives any implied warranty that the Fifth Expansion Premises are suitable for the Permitted Use.

3. Definition of Premises.

a. Commencing on the Initial Fifth Expansion Premises Commencement Date, the defined term "**Premises**" on Page 1 of the Lease is deleted in its entirety and replaced with the following:

"**Premises:** That portion of the Building (as defined below) containing approximately 30,267 rentable square feet, consisting of (i) approximately 5,900 rentable square feet on the second floor ("**Original Premises**"), (ii) approximately 600 rentable square feet on the second floor ("**Expansion Premises**"), (iii) approximately 4,100 rentable square feet on the second floor ("**Second Expansion Premises**"), (iv) approximately 7,962 rentable square feet on the second floor ("**Third Expansion Premises**"), (v) approximately 3,505 rentable square feet on the first floor ("**Fourth Expansion Premises**"), and (vi) approximately 8,200 rentable square feet on the third floor (the "**Initial Fifth Expansion Premises**"), all as determined by Landlord, as shown on **Exhibit A**."

Exhibit A attached to the Lease is amended as of the Initial Fifth Expansion Premises Commencement Date to include the Initial Fifth Expansion Premises as shown on **Exhibit A** attached to this Sixth Amendment.

b. Commencing on the Subsequent Fifth Expansion Premises Commencement Date, the defined term "**Premises**" on Page 1 of the Lease is deleted in its entirety and replaced with the following:

"**Premises:** That portion of the Building (as defined below) containing approximately 54,943 rentable square feet, consisting of (i) approximately 5,900 rentable square feet on the second floor ("**Original Premises**"), (ii) approximately 600 rentable square feet on the second floor ("**Expansion Premises**"), (iii) approximately 4,100 rentable square feet on the second floor ("**Second Expansion Premises**"), (iv) approximately 7,962 rentable square feet on the second floor ("**Third Expansion Premises**"), (v) approximately 3,505 rentable square feet on the first floor ("**Fourth Expansion Premises**"), (vi) approximately 8,200 rentable square feet on the third floor (the "**Initial Fifth Expansion Premises**"), and (vii) approximately 24,676 rentable square feet on the third floor (the "**Subsequent Fifth Expansion Premises**"), all as determined by Landlord, as shown on **Exhibit A**."

Exhibit A attached to the Lease is amended as of the Subsequent Fifth Expansion Premises Commencement Date to include the Subsequent Fifth Expansion Premises as shown on **Exhibit A** attached to this Sixth Amendment.

4. **Base Rent**.

a. **Existing Premises**. Tenant shall continue to pay Base Rent for the Existing Premises as provided for in the Lease through February 28, 2022. Commencing on March 1, 2022, Tenant shall commence paying Base Rent with respect to the Existing Premises at the same annual rate then being paid by Tenant with respect to the Fifth Expansion Premises (subject to adjustment pursuant to Sections 4(b) and (c) below).

b. **Initial Fifth Expansion Premises**. Commencing on the Initial Fifth Expansion Premises Commencement Date, Tenant shall (in addition to Base Rent for the Existing Premises) commence paying Base Rent with respect to the Initial Fifth Expansion Premises at the rate of $52.00 per rentable square foot of the Initial Fifth Expansion Premises per year. Thereafter, on each annual anniversary of the Initial Fifth Expansion Premises Commencement Date (each, an "**Initial Fifth Expansion Premises Adjustment Date**"), Base Rent payable with respect to Initial Fifth Expansion Premises shall be increased by multiplying the Base Rent payable with respect to the Initial Fifth Expansion Premises immediately before such Initial Fifth Expansion Premises Adjustment Date by 3% and adding the resulting amount to the Base Rent payable with respect to the Initial Fifth Expansion Premises immediately before such Initial Fifth Expansion Premises Adjustment Date.

c. **Subsequent Fifth Expansion Premises**. Commencing on the Subsequent Fifth Expansion Premises Commencement Date, Tenant shall (in addition to Base Rent for the Existing Premises and the Initial Fifth Expansion Premises) commence paying Base Rent with respect to the Subsequent Fifth Expansion Premises at the rate of $52.00 per rentable square foot of the Subsequent Fifth Expansion Premises per year. Thereafter, on each annual anniversary of the Subsequent Fifth Expansion Premises Commencement Date (each, a "**Subsequent Fifth Expansion Premises Adjustment Date**"), Base Rent payable with respect to Subsequent Fifth Expansion Premises shall be increased by multiplying the Base Rent payable with respect to the Subsequent Fifth Expansion Premises immediately before such Subsequent Fifth Expansion Premises Adjustment Date by 3% and adding the resulting amount to the Base Rent payable with respect to the Subsequent Fifth Expansion Premises immediately before such Subsequent Fifth Expansion Premises Adjustment Date.

5. **Tenant's Share**.

a. Commencing on the Initial Fifth Expansion Premises Commencement Date, the defined term "**Tenant's Share**" on page 1 of the Lease is deleted in its entirety and replaced with the following:

"**Tenant's Share for Original Premises and Expansion Premises:** 1.77%

Tenant's Share for Second Expansion Premises: 1.12%

Tenant's Share of Third Expansion Premises: 2.17%

Tenant's Share of Fourth Expansion Premises: 0.96%

Tenant's Share of Initial Fifth Expansion Premises: 2.24%"

b. Commencing on the Subsequent Fifth Expansion Premises Commencement Date, the defined term "**Tenant's Share**" on page 1 of the Lease is deleted in its entirety and replaced with the following:

"**Tenant's Share for Original Premises and Expansion Premises:** 1.77%

Tenant's Share for Second Expansion Premises: 1.12%

Tenant's Share of Third Expansion Premises: 2.17%

Tenant's Share of Fourth Expansion Premises: 0.96%

Tenant's Share of Initial Fifth Expansion Premises: 2.24%

Tenant's Share of Subsequent Fifth Expansion Premises: 6.73%"

6. **Base Term**.

a. Commencing on the Initial Fifth Expansion Premises Commencement Date, the defined term "**Base Term**" on page 1 of the Lease is deleted in its entirety and replaced with the following:

"**Base Term:** Beginning (i) with respect to the Original Premises, on the Commencement Date, (ii) with respect to the Expansion Premises, on the Expansion Premises Commencement Date, (iii) with respect to the Second Expansion Premises, on the Second Expansion Premises Commencement Date, (iv) with respect to the Third Expansion Premises, on the Third Expansion Premises Commencement Date, (v) with respect to the Fourth Expansion Premises, on the Fourth Expansion Premises Commencement Date, and (vi) with respect to the Initial Fifth Expansion Premises, on the Initial Fifth Expansion Premises Commencement Date, and ending with respect to the entire Premises on the date that is 84 months after the Initial Fifth Expansion Premises Commencement Date ("**Expiration Date**")."

b. Commencing on the Subsequent Fifth Expansion Premises Commencement Date, the defined term "**Base Term**" on page 1 of the Lease is deleted in its entirety and replaced with the following:

"**Base Term:** Beginning (i) with respect to the Original Premises, on the Commencement Date, (ii) with respect to the Expansion Premises, on the Expansion Premises Commencement Date, (iii) with respect to the Second Expansion Premises, on the Second Expansion Premises Commencement Date, (iv) with respect to the Third Expansion Premises, on the Third Expansion Premises Commencement Date, (v) with respect to the Fourth Expansion Premises, on the Fourth Expansion Premises Commencement Date, (vi) with respect to the Initial Fifth Expansion Premises, on the Initial Fifth Expansion Premises Commencement Date, and (vii) with respect to the Subsequent Fifth Expansion Premises, on the Subsequent Fifth Expansion Premises Commencement Date, and ending with respect to the entire Premises on the date that is 84 months after the Initial Fifth Expansion Premises Commencement Date ("**Expiration Date**")."

7. **Rentable Area of Premises**.

a. Commencing on the Initial Fifth Expansion Premises Commencement Date, the defined term "**Rentable Area of Premises**" on page 1 of the Lease is deleted in its entirety and replaced with the following:

"**Rentable Area:** Approximately 30,267 square feet"

b. Commencing on the Subsequent Fifth Expansion Premises Commencement Date, the defined term "**Rentable Area of Premises**" on page 1 of the Lease is deleted in its entirety and replaced with the following:

"**Rentable Area:** Approximately 54,943 square feet"

8. **Parking**.

a. Notwithstanding anything to the contrary contained herein, commencing on the Initial Fifth Expansion Premises Commencement Date, the number of parking spaces that Tenant is entitled to license pursuant to Section 8 of the Lease (as amended by Section 11 of the Third Amendment and Section 8 of the Fourth Amendment) shall be increased from 22 to 29 parking spaces and all references to "22" contained in Section 8 of the Lease (as amended by Section 11 of the Third Amendment and Section 8 of the Fourth Amendment) shall be deleted and replaced with "29."

b. Notwithstanding anything to the contrary contained herein, commencing on the Subsequent Fifth Expansion Premises Commencement Date, the number of parking spaces that Tenant is entitled to license pursuant to Section 8 of the Lease (as amended by Section 11 of the Third Amendment and Section 8 of the Fourth Amendment) shall be increased from 29 to 50 parking spaces and all references to "29" contained in Section 8 of the Lease (as amended by Section 11 of the Third Amendment and Section 8 of the Fourth Amendment) shall be deleted and replaced with "50."

9. **Fifth Expansion Premises Utilities**. The Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises shall be separately submetered and electricity to the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises shall be charged directly to Tenant by Landlord. The Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises shall be subject to the terms of Section 9(a) of the original Lease with respect to Utilities.

10. **Security Deposit**. Commencing on the date of this Sixth Amendment, the defined term "**Security Deposit**" on Page 1 of the Lease is deleted in its entirely and replaced with the following:

"**Security Deposit:** $323,767.33"

Landlord currently holds a Security Deposit in the amount of $38,842.00 under the Lease. Concurrently with Tenant's delivery of a signed original of this Sixth Amendment to Landlord, Tenant shall deliver to Landlord an amended Letter of Credit which increases the amount of the existing Letter of Credit being held by Landlord to $323,767.33 or an additional Letter of Credit in the amount of $284,925.33.

11. **Existing Second Floor Premises Allowance**. Tenant may apply all or a portion of the TI Allowance (as defined in the Fifth Expansion Premises Work Letter) for the design and construction of improvements in the Second Floor Premises (as defined in Section 14(a) below) of a fixed and permanent nature desired by Tenant and reasonably acceptable to Landlord (the "**Second Floor Improvements**"). Tenant acknowledges that upon the expiration of the Term of the Lease, the Second Floor Improvements shall become the property of Landlord and may not be removed by Tenant. Except for the portion of the TI Allowance that Tenant elects to apply toward the Second Floor Improvements, Tenant shall be solely responsible for all of the costs of the Second Floor Improvements. If the cost of the Second Floor Improvements exceeds the portion of the TI Allowance that Tenant elects to apply toward the Second Floor Improvements, Tenant shall reimburse Landlord for such additional costs within 10 days after Landlord's delivery to Tenant of an invoice therefor. Tenant shall have no right to any portion of the TI Allowance that is not disbursed to pay the costs of the Second Floor Improvements prior to the date that is 18 months after the date of this Sixth Amendment.

Following the date of this Sixth Amendment, Landlord and its contractors and agents shall have the right to enter into the Second Floor Premises to perform the Second Floor Improvements, and Tenant shall cooperate with Landlord in connection with the same. Landlord shall use reasonable efforts to minimize interruption with Tenant's operations in the Premises during the performance of the Second Floor Improvements. At Tenant's request, Landlord shall perform the Second Floor Improvements outside of regular business hours. Any additional or overtime costs incurred in connection with performing the Second Floor Improvements outside of regular business hours shall be payable out of the TI Fund (as defined in the Fifth Expansion Premises Work Letter). Tenant acknowledges that the Second Floor Improvements may adversely affect Tenant's use and occupancy of the Second Floor Premises. Except to the extent that Tenant is entitled to an abatement of Base Rent pursuant to Section 11 of the original Lease in connection with a Service Interruption, Tenant waives all claims for rent abatement against Landlord in connection with the Second Floor Improvements.

12. **First Floor Premises Termination Right**. Tenant shall have the one-time right, subject to the provisions of this Section 12, to terminate the Lease ("**Early Termination Right**") with respect to the Fourth Expansion Premises (i.e. that portion of the Premises consisting of approximately 3,505 rentable square feet located on the first floor of the Building) no earlier than August 1, 2017 and no later than January 31, 2018, upon 30 days advance written notice to Landlord (an "**Early Termination Notice**"), which Early Termination Notice, for the avoidance of doubt, must be received by Landlord on or before December 31, 2017). If Tenant timely delivers an Early Termination Notice, Landlord and Tenant shall enter into an amendment to the lease to memorialize the reduction of the rentable square footage of the Fourth Expansion Premises from the Premises and the corresponding reduction in Tenant's Share of Operating Expenses and parking spaces, and Tenant shall vacate the Fourth Expansion Premises on or before the date that is 30 days after Landlord's receipt of such Early Termination Notice (the "**Early Termination Date**") and deliver possession thereof to Landlord in the condition required pursuant to the Lease including, with out limitation, in accordance with the surrender requirements of the Lease, on or before the Early Termination Date and Tenant shall have no further obligations under the Lease with respect to the Fourth Expansion Premises except for those accruing prior to the Early Termination Date and those which, pursuant to the terms of the Lease, survive the expiration or early termination of the Lease. If Tenant does not deliver to Landlord an Early Termination Notice within the time period provided in this paragraph, Tenant shall be deemed to have waived its Early Termination Right and the provisions of this Section 12 shall have no further force or effect.

13. **Right to Extend Term**. For the avoidance of doubt, Tenant shall continue to have the right to extend the Term of the Lease pursuant to Section 34 of the Lease (as the same is amended by Section 9 of the Third Amendment. Tenant may only exercise its right to extend the Term of the Lease with respect to the entire then-existing Premises.

14. **Right of First Refusal**.

a. **Expansion on the Third Floor**. Subject to the rights granted to Sarepta Therapeutics, Inc., each time during the Base Term that Landlord intends to accept a written proposal (the "**Pending Deal**") to lease all or a portion of the ROFR Space (as hereinafter defined) to a third party, Landlord shall deliver to Tenant written notice (the "**Pending Deal Notice**") of the existence of such Pending Deal. For purposes of this Section 14(a), "**ROFR Space**" shall mean that certain portion of the third floor of the Building containing approximately 29,352 rentable square feet, as shown on **Exhibit C** attached hereto, which is not occupied by a tenant or which is occupied by an existing tenant whose lease is expiring within 9 months or less and such tenant does not wish to renew (whether or not such tenant has a right to renew) its occupancy of such space. Tenant shall be entitled to exercise its right under this Section 14(a) only with respect to the entire ROFR Space described in such Pending Deal Notice ("**Identified Space**"). Within 10 days after Tenant's receipt of the Pending Deal Notice, Tenant shall deliver to Landlord written notice (the "**Space Acceptance Notice**") if Tenant elects to lease the Identified Space. Tenant's right to receive the Pending Deal Notice and election to lease or not lease the Identified Space pursuant to this Section 14(a) is hereinafter referred to as the "**Right of First Refusal**." If Tenant elects to lease the Identified Space described in the Pending Deal Notice by delivering the Space Acceptance Notice within the required 10 day period, and such election is made within 120 days after the date of this Sixth Amendment, then Tenant shall be deemed to agree to lease the Identified Space on the same general terms and conditions as the Lease; provided, however, that (i) the commencement date of the Lease with respect to the Identified Space shall occur upon Landlord's delivery of the Identified Space to Tenant with any work in the space to be performed by Landlord, if any, substantially completed (the "**ROFR Space Commencement Date**"), (ii) Tenant shall continue to pay Base Rent for the then-existing Premises as provided in the Lease, and in addition thereto, beginning on the ROFR Space Commencement Date, Tenant shall pay Base Rent for the Identified Space at the rate of $52.00 per rentable square foot of the Identified Space per year, subject to increase pursuant to Section 4(b) of this Sixth Amendment, (iii) Tenant's Share of Operating Expenses shall be proportionately adjusted to include the Identified Space, (iv) Tenant shall commence paying Tenant's Share of Operating Expenses with respect to the Identified Space upon the ROFR Space Commencement Date, (v) the parties shall enter into a work letter reasonably acceptable to both parties for the construction of fixed and permanent improvements in the Identified Space which work letter shall provide for a tenant improvement allowance with respect to the Identified Space equal to $20.00 per rentable square foot of the Identified Space (the "**ROFR Space Allowance**"), which ROFR Space Allowance shall, if applicable, be decreased as provided in the immediately following paragraph, and (vi) the term of the Lease with respect to the Identified Space shall expire on the then-current Expiration Date (except to the extent Tenant has exercised its right to extend the Term of the Lease pursuant to Section 34 of the Lease, in which case the term of the Lease with respect to the Identified Space shall expire upon the expiration of the extended Term). If Tenant elects to lease the Identified Space by delivering the Space Acceptance Notice and such Space Acceptance Notice is delivered after the date that is 120 days after the date of this Sixth Amendment, then Tenant shall be deemed to agree to lease the Identified Space on the same general terms and conditions as the Lease except that the terms of the Lease shall be modified with respect to the Identified Space to reflect the terms of the Pending Deal. The term of the Lease with respect to the Identified Space shall be the term reflected in the Pending Deal, which Tenant acknowledges and agrees may not be co-terminous with the Term of the Lease with respect to the then-existing Premises. Notwithstanding anything to the contrary contained herein, in no event shall the Fifth

Expansion Premises Work Letter apply to the Identified Space. If Tenant fails to deliver a Space Acceptance Notice to Landlord within the required 10 day period, Tenant shall be deemed to have waived its rights under this Section 14(a) with respect to the Identified Space and Landlord shall have the right to lease such Identified Space to the third party subject to the Pending Deal (or an affiliate of such third party). Tenant's Right of First Refusal shall be ongoing during the Base Term; provided, however that Tenant shall have no right to exercise the Right of First Refusal and the provisions of this Section 14(a) shall no longer apply after the date that is 9 months prior to the expiration of the Base Term if Tenant has not exercised its Extension Right pursuant to Section 34 of the Lease.

If Tenant exercises its Right of First Refusal with respect to at least 29,352 rentable square feet of the ROFR Space pursuant to the immediately preceding paragraph, then Tenant shall have the one-time right, subject to the provisions of this paragraph, to terminate the Lease ("**Second Floor Early Termination Right**") with respect to the Original Premises, the Expansion Premises, the Second Expansion Premises and the Third Expansion Premises containing 18,562 rentable square feet in the aggregate (the "**Second Floor Premises**") on the date that is 30 days after the ROFR Space Commencement Date (the "**Early Second Floor Termination Date**") by delivery of written notice to Landlord concurrently with Tenant's delivery of the Space Acceptance Notice to Landlord (an "**Early Second Floor Termination Notice**"). If Tenant timely delivers an Early Second Floor Termination Notice, Landlord and Tenant shall enter into an amendment to the Lease to memorialize the reduction of the rentable square footage of the Second Floor Premises from the Premises and the corresponding reduction in parking spaces as of the Early Second Floor Termination Date, and Tenant shall vacate the Second Floor Premises on or before the Early Second Floor Termination Date and deliver possession thereof to Landlord in the condition required pursuant to the Lease including, with out limitation, in accordance with the surrender requirements of the Lease, on or before the Early Second Floor Termination Date and Tenant shall have no further obligations under the Lease with respect to the Second Floor Premises except for those accruing prior to the Early Second Floor Termination Date and those which, pursuant to the terms of the Lease, survive the expiration or early termination of the Lease. Notwithstanding anything to the contrary contained in this Sixth Amendment, if Tenant exercises its Second Floor Early Termination Right pursuant to this Section 14(b), Landlord shall have the right to enclose the Communicating Stairwell (as defined in the Fifth Expansion Premises Work Letter), at Landlord's cost and expense; provided, that the rentable square footage of the remaining Premises shall in no event be decreased in connection with such enclosure of the Communicating Stairwell. If Tenant does not deliver to Landlord an Early Second Floor Termination Notice within the time period provided in this paragraph, Tenant shall be deemed to have waived its Early Second Floor Termination Right and the provisions of this paragraph shall have no further force or effect. Notwithstanding anything to the contrary contained in this Sixth Amendment, if Tenant elects to exercise its Second Floor Early Termination Right pursuant to this paragraph within 120 days after the date of this Sixth Amendment, and any portion of the TI Allowance and/or the Existing Premises Allowance (as such terms are defined in the Fifth Expansion Premises Work Letter) have been expended for Tenant improvements in the Second Floor Premises, then the ROFR Space Allowance shall be reduced by an amount equal to any such TI Allowance and/or Existing Premises Allowance expended by Tenant in the Second Floor Premises.

b. Amended Lease. If: (i) Tenant fails to timely deliver a Space Acceptance Notice, or (ii) after the expiration of a period of 30 days after Landlord's delivery to Tenant of a lease amendment for Tenant's lease of the Identified Space, no lease amendment for the Identified Space acceptable to both parties each in their reasonable discretion, has been executed, Tenant shall be deemed to have waived its right to lease such Identified Space.

c. **Exceptions**. Notwithstanding the above, the Right of First Refusal shall, at Landlord's option, not be in effect and may not be exercised by Tenant:

(i) during any period of time that Tenant is in Default under any provision of the Lease; or

(ii) if Tenant has been in Default under any provision of the Lease 3 or more times, whether or not the Defaults are cured, during the 12 month period prior to the date on which Tenant seeks to exercise the Right of First Refusal.

d. **Termination**. The Right of First Refusal shall, at Landlord's option, terminate and be of no further force or effect even after Tenant's due and timely exercise of the Right of First Refusal, if, after such exercise, but prior to the commencement date of the lease of such Identified Space, (i) Tenant fails to timely cure any Default by Tenant under the Lease; or (ii) Tenant has Defaulted 3 or more times during the period from the date of the exercise of the Right of First Refusal to the date of the commencement of the lease of the Identified Space, whether or not such Defaults are cured.

e. **Rights Personal**. The Right of First Refusal is personal to Tenant (and successors pursuant to a Permitted Assignment) and is not assignable without Landlord's consent, which may be granted or withheld in Landlord's sole discretion separate and apart from any consent by Landlord to an assignment of Tenant's interest in the Lease, except that they may be assigned in connection with any Permitted Assignment of the Lease.

f. **No Extensions**. The period of time within which the Right of First Refusal may be exercised shall not be extended or enlarged by reason of Tenant's inability to exercise the Right of First Refusal.

15. **Indemnity**. Landlord and Tenant hereby agree that, in order to reflect changes in applicable Legal Requirements, retroactive to the date of the original Lease, the language of Section 13 of the original Lease which reads "unless caused solely by the willful misconduct or negligence of Landlord," is hereby deleted in its entirety and replaced with the following: "except to the extent caused by the willful misconduct or negligence of Landlord,".

16. **Signage**. If Tenant exercises its Right of First Refusal with respect to all of the ROFR Space pursuant to Section 14 and so long as Tenant continues to lease and occupy no less than 80,790 rentable square feet at the Project, Tenant shall have the non-exclusive right, at Tenant's sole cost and expense, to display, 1 sign bearing Tenant's name on a location on the Building designated by Landlord and reasonably acceptable to Tenant ("**Building Sign**"). Tenant acknowledges and agrees that Tenant's Building Sign including, without limitation, the size, color and type, shall be subject to Landlord's prior written approval, which shall not be unreasonably withheld and shall be consistent with Landlord's signage program at the Project and applicable Legal Requirements including, without limitation, any requirements imposed by the Boston Redevelopment Authority. Tenant shall be responsible, at Tenant's sole cost and expense, for the maintenance of Tenant's Building Sign, for the removal of Tenant' s Building Sign at the expiration or earlier termination of this Lease and, if Tenant or any Tenant Party performs such removal, for the repair all damage resulting from such removal.

17. **Brokers**. Landlord and Tenant each represents and warrants that it has not dealt with any broker, agent or other person (collectively, "**Broker**") in connection with the transaction reflected in this Sixth Amendment and that no Broker brought about this transaction, other than Transwestern RBJ. Landlord and Tenant each hereby agrees to indemnify and hold the other harmless from and against any claims by any Broker claiming a commission or other form of compensation by virtue of having dealt with Tenant or Landlord, as applicable, with regard to this Sixth Amendment.

18. **OFAC**. Tenant and Landlord are currently (a) in compliance with and shall at all times during the Term of the Lease remain in compliance with the regulations of the Office of Foreign Assets Control ("**OFAC**") of the U.S. Department of Treasury and any statute, executive order, or regulation relating thereto (collectively, the "**OFAC Rules**"), (b) not listed on, and shall not during the term of the Lease be listed on, the Specially Designated Nationals and Blocked Persons List, Foreign Sanctions Evaders List or the Sectoral Sanctions Identifications List, which are all maintained by OFAC and/or on any other similar list maintained by OFAC or other governmental authority pursuant to any authorizing statute, executive order, or regulation, and (c) not a person or entity with whom a U.S. person is prohibited from conducting business under the OFAC Rules.

19. **Miscellaneous**.

a. This Sixth Amendment is the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous oral and written agreements and discussions. This Sixth Amendment may be amended only by an agreement in writing, signed by the parties hereto.

b. This Sixth Amendment is binding upon and shall inure to the benefit of the parties hereto, their respective successors and assigns.

c. This Sixth Amendment may be executed in any number of counterparts, each of which shall be deemed an original, but all of which when taken together shall constitute one and the same instrument. The signature page of any counterpart may be detached therefrom without impairing the legal effect of the signature(s) thereon provided such signature page is attached to any other counterpart identical thereto except having additional signature pages executed by other parties to this Sixth Amendment attached thereto.

d. Except as amended and/or modified by this Sixth Amendment, the Lease is hereby ratified and confirmed and all other terms of the Lease shall remain in full force and effect, unaltered and unchanged by this Sixth Amendment. In the event of any conflict between the provisions of this Sixth Amendment and the provisions of the Lease, the provisions of this Sixth Amendment shall prevail. Whether or not specifically amended by this Sixth Amendment, all of the terms and provisions of the Lease are hereby amended to the extent necessary to give effect to the purpose and intent of this Sixth Amendment.

[Signatures are on next page]

IN WITNESS WHEREOF, the parties hereto have executed this Sixth Amendment as of the day and year first above written.

TENANT:

SAGE THERAPEUTICS, INC.,
a Delaware corporation

By: /s/ Jeffrey Jonas
Its: CEO

LANDLORD:

ARE-MA REGION NO. 38, LLC,
a Delaware limited liability company

By: Alexandria Real Estate Equities, L.P.,
a Delaware limited partnership, managing member

By: ARE-QRS CORP.,
a Maryland corporation,
general partner

By: /s/ Eric S. Johnson
Its: Senior Vice President, RE Legal Affairs

EXHIBIT A

Initial Fifth Expansion Premises and Subsequent Fifth Expansion Premises

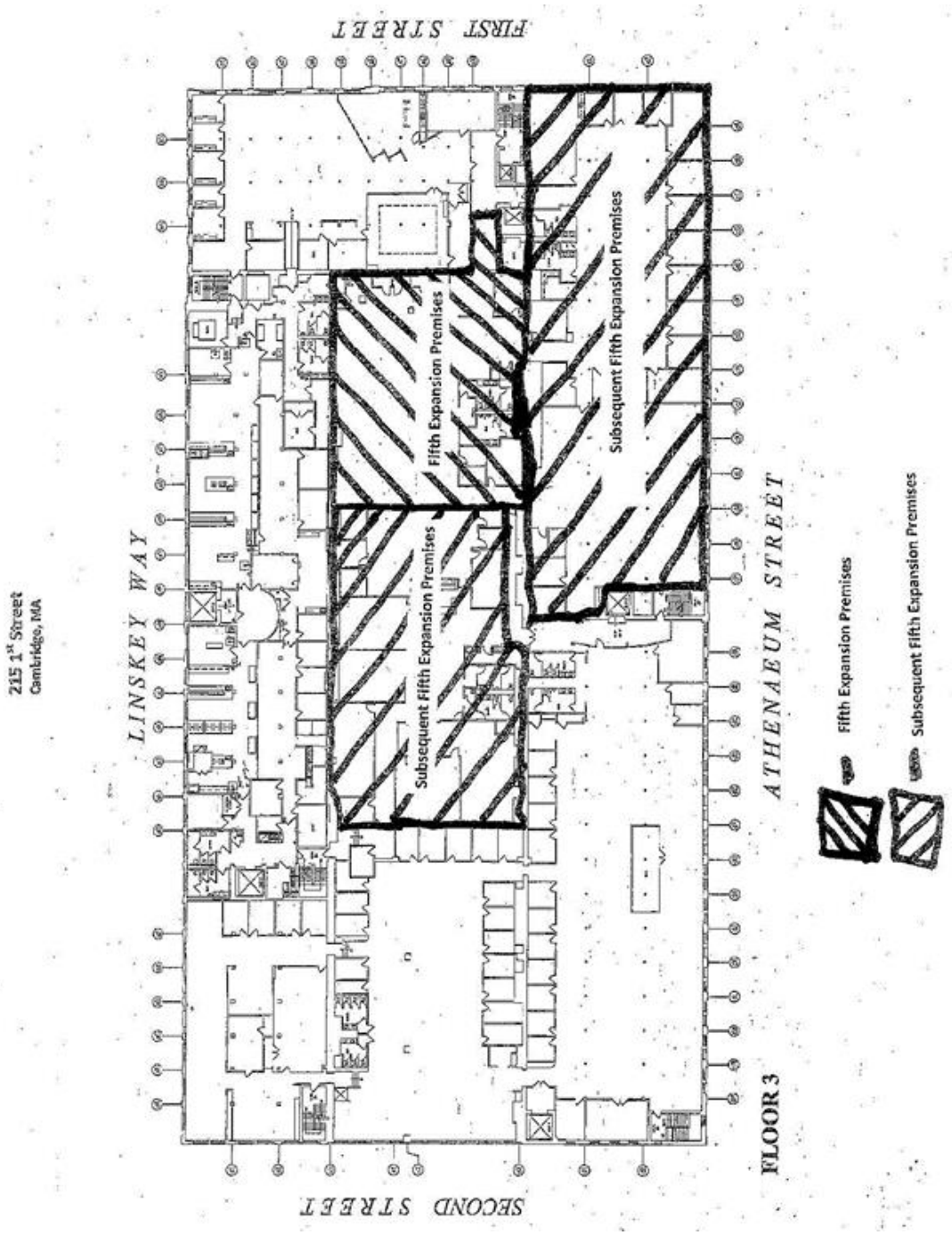


EXHIBIT B

Fifth Expansion Premises Work Letter

THIS FIFTH EXPANSION PREMISES WORK LETTER dated _____, 2017 (this "**Fifth Expansion Premises Work Letter**") is made and entered into by and between **ARE-MA REGION NO. 38, LLC**, a Delaware limited liability company ("**Landlord**"), and **SAGE THERAPEUTICS, INC.**, a Delaware corporation ("**Tenant**"), and is attached to and made a part of that certain Lease Agreement dated as of December 21, 2011, as amended by that certain First Amendment to Lease dated as of October 26, 2012, as further amended by that certain Second Amendment to Lease dated as of May 9, 2013, as further amended by that certain Third Amendment to Lease dated as of September 9, 2015, as further amended by that certain Fourth Amendment to Lease dated as of October 27, 2015, as further amended by that certain Fifth Amendment to Lease dated as of December 9, 2015, and as further amended by that certain Sixth Amendment to Lease of even date herewith (the "**Sixth Amendment**") (as amended, the "**Lease**"), by and between Landlord and Tenant. Any initially capitalized terms used but not defined herein shall have the meanings given them in the Lease.

1. **General Requirements**.

(a) **Tenant's Authorized Representative**. Tenant designates Etchell Cordero and Kimi Iguchi (either such individual acting alone, "**Tenant's Representative**") as the only persons authorized to act for Tenant pursuant to this Fifth Expansion Premises Work Letter. Landlord shall not be obligated to respond to or act upon any request, approval, inquiry or other communication ("**Communication**") from or on behalf of Tenant in connection with this Fifth Expansion Premises Work Letter unless such Communication is in writing from Tenant's Representative. Tenant may change either Tenant's Representative at any time upon not less than 5 business days advance written notice to Landlord. Neither Tenant nor Tenant's Representative shall be authorized to direct Landlord's contractors in the performance of Landlord's Work (as hereinafter defined).

(b) **Landlord's Authorized Representative**. Landlord designates Jeff McComish and William DePippo (either such individual acting alone, "**Landlord's Representative**") as the only persons authorized to act for Landlord pursuant to this Fifth Expansion Premises Work Letter. Tenant shall not be obligated to respond to or act upon any request, approval, inquiry or other Communication from or on behalf of Landlord in connection with this Fifth Expansion Premises Work Letter unless such Communication is in writing from Landlord's Representative. Landlord may change either Landlord's Representative at any time upon not less than 5 business days advance written notice to Tenant. Landlord's Representative shall be the sole persons authorized to direct Landlord's contractors in the performance of Landlord's Work.

(c) **Architects, Consultants and Contractors**. Landlord and Tenant hereby acknowledge and agree that: (i) the general contractor and any subcontractors for the Tenant Improvements shall be selected by Landlord, subject to Tenant's approval, which approval shall not be unreasonably withheld, conditioned or delayed, and (ii) Spagnolo Gisness & Associates shall be the architect (the "**TI Architect**") for the Tenant Improvements.

2. **Tenant Improvements**.

(a) **Tenant Improvements Defined**. As used herein, "**Tenant Improvements**" shall mean all improvements to the Fifth Expansion Premises of a fixed and permanent nature as shown on the TI Construction Drawings, as defined in Section 2(c) below, which Tenant Improvements may, at Tenant's election include, an internal communicating stairwell connecting the Second Floor Premises and the Fifth Expansion Premises (the "**Communication Stairwell**"). If Tenant elects to include a Communicating Stairwell as part of the Tenant Improvements, Tenant shall (i) not be required to remove or restore the

Communicating Stairwell to its original configuration at the expiration or earlier termination of the Term, or (ii) be required to pay the cost for the removal or restoration of the same at the expiration or earlier termination of the Term. Other than Landlord's Work (as defined in Section 3(a) below), Landlord shall not have any obligation whatsoever with respect to the finishing of the Fifth Expansion Premises for Tenant's use and occupancy. Notwithstanding anything to the contrary contained in the Lease, Landlord and Tenant acknowledge and agree that the Tenant Improvements in the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises may be constructed in phases.

(b) **Tenant's Space Plans**. Landlord and Tenant acknowledge and agree that that certain plan for the Initial Fifth Expansion Premises attached hereto as **Schedule 1** (the "**Space Plan**") has been approved by Landlord and Tenant. Tenant shall deliver to Landlord and the TI Architect schematic drawings and outline specifications (the "**Subsequent Premises Space Plans**") detailing Tenant's requirements for the Tenant Improvements in the Subsequent Fifth Expansion Premises on or before August 1, 2017. Not more than 7 days thereafter, Landlord shall deliver to Tenant the written objections, questions or comments of Landlord and the TI Architect with regard to the Subsequent Premises Space Plans. Tenant shall cause the Subsequent Premises Space Plans to be revised to address such written comments and shall resubmit said drawings to Landlord for approval within 7 days thereafter. Such process shall continue until Landlord has approved the Subsequent Premises Space Plans.

(c) **Working Drawings**. Landlord shall cause the TI Architect to prepare and deliver to Tenant for review and comment construction plans, specifications and drawings for the Tenant Improvements ("**TI Construction Drawings**"), which TI Construction Drawings shall be prepared substantially in accordance with the Space Plan and the Subsequent Premises Space Plans, respectively. Tenant shall be solely responsible for ensuring that the TI Construction Drawings reflect Tenant's requirements for the Tenant Improvements with respect to the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises, respectively. Tenant shall deliver its written comments on the TI Construction Drawings to Landlord not later than 10 business days after Tenant's receipt of the same; provided, however, that Tenant may not disapprove any matter that is consistent with the Space Plan or the Subsequent Premises Space Plans, respectively, without submitting a Change Request. Landlord and the TI Architect shall consider all such comments in good faith and shall, within 10 business days after receipt, notify Tenant how Landlord proposes to respond to such comments, but Tenant's review rights pursuant to the foregoing sentence shall not delay the design or construction schedule for the Tenant Improvements with respect to the Initial Fifth Expansion Premises or the Subsequent Fifth Expansion Premises. Any disputes in connection with such comments shall be resolved in accordance with Section 2(d) hereof. Provided that the design reflected in the TI Construction Drawings is consistent with the Space Plan and the Subsequent Premises Space Plans, respectively, Tenant shall approve the TI Construction Drawings submitted by Landlord, unless Tenant submits a Change Request. Once approved by Tenant, subject to the provisions of Section 4 below, Landlord shall not materially modify the TI Construction Drawings except as may be reasonably required in connection with the issuance of the TI Permit (as defined in Section 3(b) below).

(d) **Approval and Completion**. It is hereby acknowledged by Landlord and Tenant that (i) the permit set of TI Construction Drawings for the Initial Fifth Expansion Premises must be completed and approved no later than May 1, 2017, in order for the Landlord's Work in the Initial Fifth Expansion Premises to be Substantially Completed by the Target Initial Fifth Expansion Premises Commencement Date (as defined in the Sixth Amendment) and (ii) the permit set of TI Construction Drawings for the Subsequent Fifth Expansion Premises must be completed and approved no later than August 15, 2017, for Landlord's Work in the Subsequent Fifth Expansion Premises to be Substantially Completed by the Target Subsequent Fifth Expansion Premises Commencement Date (as defined in the Sixth Amendment). Upon any dispute regarding the design of the Tenant Improvements, which is not settled within 10 business days after notice of such dispute is delivered by one party to the other, Tenant may make the final decision regarding the design of the Tenant Improvements, provided (i) Tenant acts reasonably and such final decision is either consistent with or a compromise between Landlord's and Tenant's positions with respect to such dispute, (ii) that all costs and expenses resulting from any such

decision by Tenant shall be payable out of the TI Fund (as defined in Section 5(d) below), and (iii) Tenant's decision will not affect the base Building, structural components of the Building or any Building Systems. Any changes to the TI Construction Drawings following Landlord's and Tenant's approval of same requested by Tenant shall be processed as provided in Section 4 hereof. Notwithstanding anything to the contrary contained in this Fifth Expansion Premises Work Letter, any failure of the permit set of TI Construction Drawings for the Initial Fifth Expansion Premises to be completed and approved by May 1, 2017, or any failure of the permit set of TI Construction Drawings for the Subsequent Fifth Expansion Premises to be completed and approved by August 15, 2017, shall constitute a Tenant Delay.

3. **Performance of Landlord's Work**.

(a) **Definition of Landlord's Work**. As used herein, "**Landlord's Work**" shall mean the work of constructing the Tenant Improvements.

(b) **Commencement and Permitting**. Landlord shall commence construction of the Tenant Improvements upon obtaining a building permit (the "**TI Permit**") authorizing the construction of the Tenant Improvements consistent with the TI Construction Drawings approved by Tenant. The cost of obtaining the TI Permit shall be payable from the TI Fund. Tenant shall assist Landlord in obtaining the TI Permit. If any Governmental Authority having jurisdiction over the construction of Landlord's Work or any portion thereof shall impose terms or conditions upon the construction thereof that: (i) are inconsistent with Landlord's obligations hereunder, (ii) increase the cost of constructing Landlord's Work, or (iii) will materially delay the construction of Landlord's Work, Landlord and Tenant shall reasonably and in good faith seek means by which to mitigate or eliminate any such adverse terms and conditions.

(c) **Completion of Landlord's Work**. Landlord shall (i) substantially complete or cause to be substantially completed Landlord's Work in a good and workmanlike manner, in accordance with the TI Permit subject, in each case, to Minor Variations and normal "punch list" items of a non-material nature that do not interfere with the use of the Fifth Expansion Premises, and (ii) obtain a certificate or temporary certificate of occupancy (or an equivalent approval) for the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises, respectively, permitting lawful occupancy of the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises, respectively (but specifically excluding any permits, licenses or other governmental approvals required to be obtained in connection with Tenant's operations in the Fifth Expansion Premises) ("**Substantial Completion**" or "**Substantially Complete**"). Upon Substantial Completion of Landlord's Work in the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises, respectively, Landlord shall require the TI Architect and the general contractor to execute and deliver, for the benefit of Tenant and Landlord, a Certificate of Substantial Completion in the form of the American Institute of Architects ("**AIA**") document G704. For purposes of this Fifth Expansion Premises Work Letter, "**Minor Variations**" shall mean any modifications reasonably required: (i) to comply with all applicable Legal Requirements and/or to obtain or to comply with any required permit (including the TI Permit); (ii) to comply with any request by Tenant for modifications to Landlord's Work; (iii) to comport with good design, engineering, and construction practices that are not material; or (iv) to make reasonable adjustments for field deviations or conditions encountered during the construction of Landlord's Work.

(d) **Selection of Materials**. Where more than one type of material or structure is indicated on the TI Construction Drawings approved by Landlord and Tenant, the option will be selected at Landlord's sole and absolute subjective discretion. As to all building materials and equipment that Landlord is obligated to supply under this Fifth Expansion Premises Work Letter, Landlord shall select the manufacturer thereof in its sole and absolute subjective discretion.

(e) **Delivery of the Fifth Expansion Premises**. When Landlord's Work is Substantially Complete in the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises, subject to the remaining terms and provisions of this Section 3(e), Tenant shall accept the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises, respectively. Tenant's taking possession and acceptance of the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises shall not constitute a waiver of: (i) any warranty with respect to workmanship (including installation of equipment) or material (exclusive of equipment provided directly by manufacturers), (ii) any non-compliance of Landlord's Work with applicable Legal Requirements, or (iii) any claim that Landlord's Work was not completed substantially in accordance with the TI Construction Drawings (subject to Minor Variations and such other changes as are permitted hereunder) (collectively, a "**Construction Defect**"). Tenant shall have with respect to the Initial Fifth Expansion Premises, one year after Substantial Completion of the Tenant Improvements in the Initial Fifth Expansion Premises, and with respect to the Subsequent Fifth Expansion Premises, one year after Substantial Completion of the Tenant Improvements in the Subsequent Fifth Expansion Premises, within which to notify Landlord of any such Construction Defect discovered by Tenant, and Landlord shall use reasonable efforts to remedy or cause the responsible contractor to remedy any such Construction Defect within 30 days thereafter. Notwithstanding the foregoing, Landlord shall not be in default under the Lease if the applicable contractor, despite Landlord's reasonable efforts, fails to remedy such Construction Defect within such 30-day period, in which case Landlord shall have no further obligation with respect to such Construction Defect other than to cooperate, at no cost to Landlord, with Tenant should Tenant elect to pursue a claim against such contractor.

Tenant shall be entitled to receive the benefit of all construction warranties and manufacturer's equipment warranties relating to equipment installed in the Fifth Expansion Premises. If requested by Tenant, Landlord shall attempt to obtain extended warranties from manufacturers and suppliers of such equipment, but the cost of any such extended warranties shall be borne solely out of the TI Fund. Landlord shall promptly undertake and complete, or cause to be completed, all punch list items.

(f) **Fifth Expansion Premises Commencement Date Delay**. Except as otherwise provided in the Lease, Delivery of the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises, respectively shall occur when Landlord's Work in the Initial Fifth Expansion Premises and the Subsequent Fifth Expansion Premises, respectively, has been Substantially Completed, except to the extent that completion of Landlord's Work shall have been actually delayed by any one or more of the following causes ("**Tenant Delay**"):

(i) Tenant's Representative was not available within 2 business day to give or receive any Communication or to take any other action required to be taken by Tenant hereunder;

(ii) Tenant's request for Change Requests (as defined in Section 4(a) below) whether or not any such Change Requests are actually performed;

(iii) Construction of any Change Requests;

(iv) Tenant's request for materials, finishes or installations requiring unusually long lead times, provided that promptly after Landlord learns of such long lead times, Landlord informs Tenant that the requested items will require unusually long lead times;

(v) Tenant's delay in reviewing, revising or approving plans and specifications beyond the periods set forth herein;

(vi) Tenant's delay in providing information critical to the normal progression of the Project. Tenant shall provide such information as soon as reasonably possible, but in no event longer than one week after receipt of any request for such information from Landlord;

(vii) Tenant's delay in making payments to Landlord for Excess TI Costs (as defined in Section 5(b) below); or

(viii) Any other act or omission by Tenant or any Tenant Party (as defined in the Lease), or persons employed by any of such persons.

If Delivery of the Initial Fifth Expansion Premises or the Subsequent Fifth Expansion Premises is delayed for any of the foregoing reasons, then Landlord shall cause the TI Architect to certify the date on which the Tenant Improvements would have been Substantially Completed in the Initial Fifth Expansion Premises or the Subsequent Fifth Expansion Premises, as applicable, but for such Tenant Delay and such certified date shall be the date of Delivery.

4. **Changes**. Any changes requested by Tenant to the Tenant Improvements after the delivery and approval by Landlord of the Space Plan shall be requested and instituted in accordance with the provisions of this Section 4 and shall be subject to the written approval of Landlord and the TI Architect, such approval not to be unreasonably withheld, conditioned or delayed.

(a) **Tenant's Request For Changes**. If Tenant shall request changes to the Tenant Improvements ("**Changes**"), Tenant shall request such Changes by notifying Landlord in writing in substantially the same form as the AIA standard change order form (a "**Change Request**"), which Change Request shall detail the nature and extent of any such Change. Such Change Request must be signed by Tenant's Representative. Landlord shall, before proceeding with any Change, respond to Tenant as soon as is reasonably possible with an estimate of: (i) the time it will take, and (ii) the architectural and engineering fees and costs that will be incurred, to analyze such Change Request (which costs shall be paid from the TI Fund to the extent actually incurred, whether or not such change is implemented). Landlord shall thereafter submit to Tenant in writing, within 5 business days of receipt of the Change Request (or such longer period of time as is reasonably required depending on the extent of the Change Request), an analysis of the additional cost or savings involved, including, without limitation, architectural and engineering costs and the period of time, if any, that the Change will extend the date on which Landlord's Work will be Substantially Complete. Any such delay in the completion of Landlord's Work caused by a Change, including any reasonable suspension of Landlord's Work while any such Change is being evaluated and/or designed, shall be Tenant Delay.

(b) **Implementation of Changes**. If Tenant: (i) approves in writing the cost or savings and the estimated extension in the time for completion of Landlord's Work, if any, and (ii) deposits with Landlord any Excess TI Costs required pursuant to Section 5(b) below in connection with such Change, Landlord shall cause the approved Change to be instituted. Notwithstanding any approval or disapproval by Tenant of any estimate of the delay caused by such proposed Change, the TI Architect's determination of the amount of Tenant Delay in connection with such Change shall be final and binding on Landlord and Tenant.

5. **Costs**.

(a) **Budget For Tenant Improvements**. Before the commencement of construction of the Tenant Improvements, Landlord shall obtain a detailed breakdown by trade of the costs incurred or that will be incurred in connection with the design and construction of the Tenant Improvements (the "**Budget**").

(b) **TI Allowance**. Landlord shall provide to Tenant a tenant improvement allowance (the "**TI Allowance**") in the amount o $1,665,040 in the aggregate. The TI Allowance shall be disbursed in accordance with this Work Letter.

Tenant shall have no right to the use or benefit (including any reduction to or payment of Base Rent) of any portion of the TI Allowance not required for the construction of (i) the Tenant Improvements described in the TI Construction Drawings approved pursuant to Section 2(d) or (ii) any Changes pursuant to Section 4.

(c) **Costs Includable in TI Fund**. The TI Fund shall be used solely for the payment of design, permits and construction costs in connection with the construction of the Tenant Improvements, including, without limitation, the cost of electrical power and other utilities used in connection with the construction of the Tenant Improvements, the cost of preparing the Space Plan, the Subsequent Premises Space Plan and the TI Construction Drawings, all costs set forth in the Budget, including Landlord's out-of-pocket expenses, costs resulting from Tenant Delays and the cost of Changes (collectively, "**TI Costs**"). Notwithstanding anything to the contrary contained herein, the TI Fund shall not be used to purchase any furniture, personal property or other non-Building system materials or equipment, including, but not limited to, Tenant's voice or data cabling, non-ducted biological safety cabinets and other scientific equipment not incorporated into the Tenant Improvements.

(d) **Excess TI Costs**. Landlord shall have no obligation to bear any portion of the cost of any of the Tenant Improvements except to the extent of the TI Allowance. If at any time the remaining TI Costs under the Budget exceed the remaining unexpended TI Allowance ("**Excess TI Costs**"), Tenant shall deposit with Landlord, as a condition precedent to Landlord's obligation to complete the Tenant Improvements, 50% of the then current TI Costs in excess of the remaining TI Allowance, and the remaining 50% of the Excess TI Costs upon Substantial Completion of the Tenant Improvements. If Tenant fails to deposit any Excess TI Costs with Landlord, Landlord shall have all of the rights and remedies set forth in the Lease for nonpayment of Rent (including, but not limited to, the right to interest at the Default Rate and the right to assess a late charge). For purposes of any litigation instituted with regard to such amounts, those amounts will be deemed Rent under the Lease. The TI Allowance and Excess TI Costs are herein referred to as the "**TI Fund**." Funds deposited by Tenant shall be the first disbursed to pay TI Costs. Notwithstanding anything to the contrary set forth in this Section 5(d), Tenant shall be fully and solely liable for TI Costs and the cost of Minor Variations in excess of the TI Allowance. If upon completion of the Tenant Improvements and the payment of all sums due in connection therewith there remains any undisbursed portion of the TI Fund, Tenant shall be entitled to such undisbursed TI Fund solely to the extent of any Excess TI Costs deposit Tenant has actually made with Landlord.

6. **Tenant Access**.

(a) **Tenant's Access Rights**. Landlord hereby agrees to permit Tenant access, at Tenant's sole risk and expense, to the Fifth Expansion Premises (i) 14 days prior to the Fifth Expansion Premises Commencement Date to perform any work ("**Tenant's Work**") required by Tenant other than Landlord's Work, provided that such Tenant's Work is coordinated with the TI Architect and the general contractor, and complies with the Lease and all other reasonable restrictions and conditions Landlord may impose (except the obligation to pay Base Rent or Operating Expenses with respect to the Fifth Expansion Premises), and (ii) prior to the completion of Landlord's Work, to inspect and observe work in process; all such access shall be during normal business hours or at such other times as are reasonably designated by Landlord. Any entry by Tenant shall comply with all established safety practices of Landlord's contractor and Landlord until completion of Landlord's Work and acceptance thereof by Tenant.

(b) **No Interference**. Neither Tenant nor any Tenant Party (as defined in the Lease) shall interfere with the performance of Landlord's Work, nor with any inspections or issuance of final approvals by applicable Governmental Authorities, and upon any such interference, Landlord shall have the right to exclude Tenant and any Tenant Party from the Fifth Expansion Premises until Substantial Completion of Landlord's Work.

(c) **No Acceptance of Fifth Expansion Premises**. The fact that Tenant may, with Landlord's consent, enter into the Fifth Expansion Premises prior to the date Landlord's Work is Substantially Complete for the purpose of performing Tenant's Work shall not be deemed an acceptance by Tenant of possession of the Fifth Expansion Premises, but in such event Tenant shall defend with counsel reasonably acceptable by Landlord, indemnify and hold Landlord harmless from and against any loss of or damage to Tenant's property, completed work, fixtures, equipment, materials or merchandise, and from liability for death of, or injury to, any person, caused by the act or omission of Tenant or any Tenant Party.

7. **Miscellaneous**.

(a) **Consents**. Whenever consent or approval of either party is required under this Fifth Expansion Premises Work Letter, that party shall not unreasonably withhold, condition or delay such consent or approval, unless expressly set forth herein to the contrary.

(b) **Modification**. No modification, waiver or amendment of this Fifth Expansion Premises Work Letter or of any of its conditions or provisions shall be binding upon Landlord or Tenant unless in writing signed by Landlord and Tenant.

(c) **Default**. Notwithstanding anything set forth herein or in the Lease to the contrary, Landlord shall not have any obligation to perform any work hereunder or to fund any portion of the TI Costs during any period that there is a Default by Tenant under the Lease.

Schedule 1

Space Plan

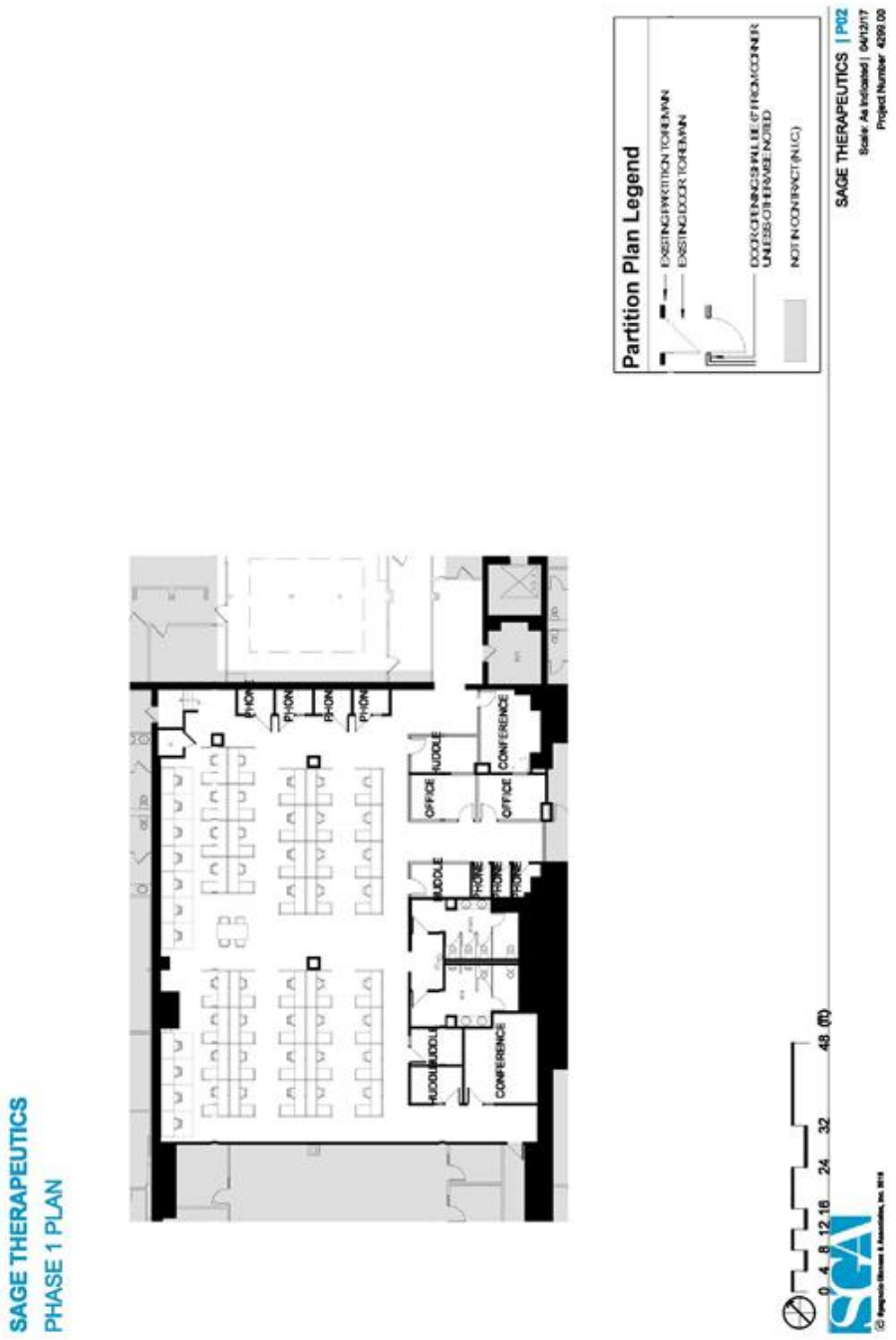


EXHIBIT C

ROFR Space

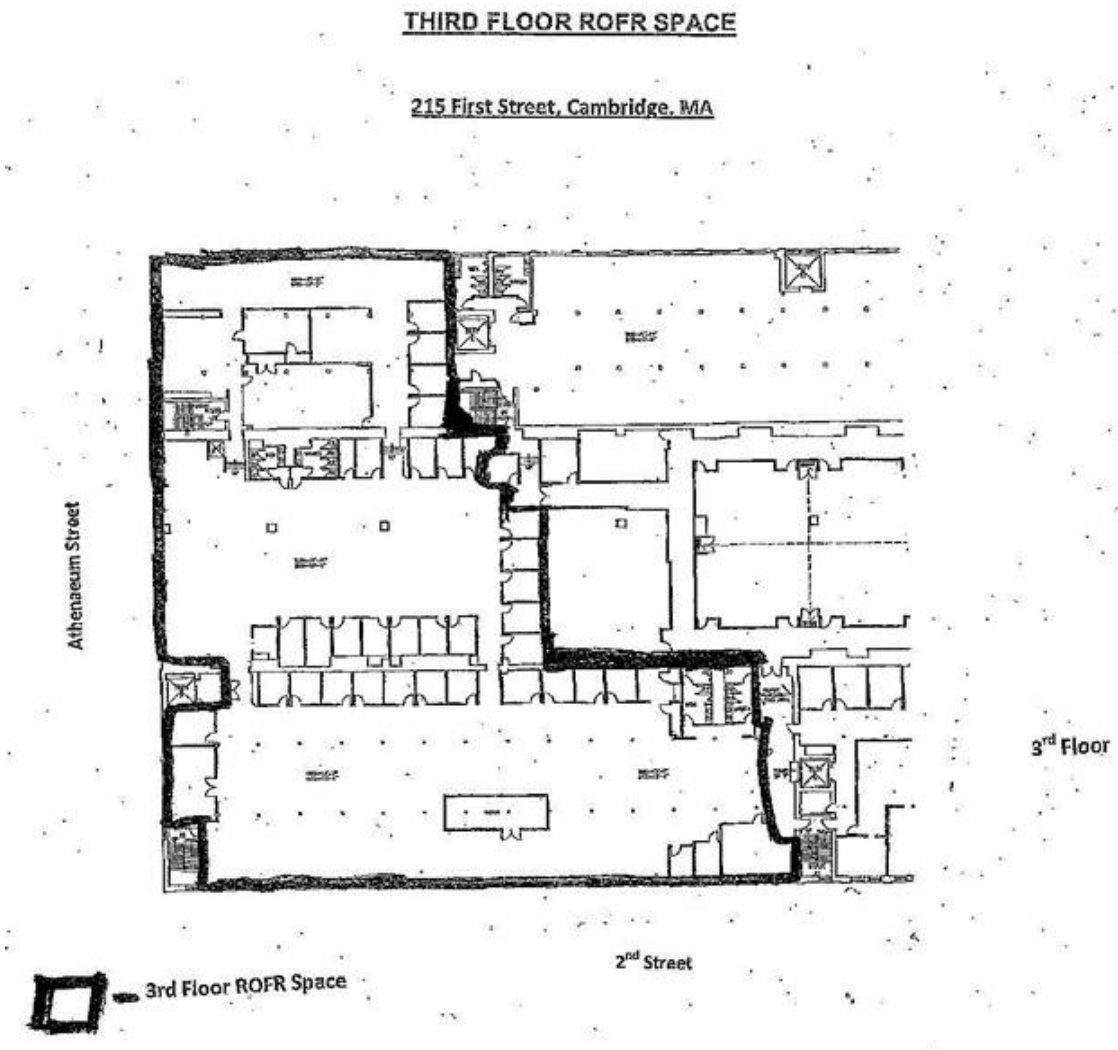


EXHIBIT 10.2

SAGE THERAPEUTICS, INC.

2014 EMPLOYEE STOCK PURCHASE PLAN

The purpose of the Sage Therapeutics, Inc. 2014 Employee Stock Purchase Plan ("the Plan") is to provide eligible employees of Sage Therapeutics, Inc. (the "Company") and each Designated Subsidiary (as defined in Section 11) with opportunities to purchase shares of the Company's common stock, par value $0.0001 per share (the "Common Stock"). 282,000 shares of Common Stock in the aggregate have been approved and reserved for this purpose. The Plan is intended to constitute an "employee stock purchase plan" within the meaning of Section 423(b) of the Internal Revenue Code of 1986, as amended (the "Code"), and shall be interpreted in accordance with that intent.

1. Administration. The Plan will be administered by the person or persons (the "Administrator") appointed by the Company's Board of Directors (the "Board") for such purpose. The Administrator has authority at any time to: (i) adopt, alter and repeal such rules, guidelines and practices for the administration of the Plan and for its own acts and proceedings as it shall deem advisable; (ii) interpret the terms and provisions of the Plan; (iii) make all determinations it deems advisable for the administration of the Plan; (iv) decide all disputes arising in connection with the Plan; and (v) otherwise supervise the administration of the Plan. All interpretations and decisions of the Administrator shall be binding on all persons, including the Company and the Participants. No member of the Board or individual exercising administrative authority with respect to the Plan shall be liable for any action or determination made in good faith with respect to the Plan or any option granted hereunder.

2. Offerings. The Company will make one or more offerings to eligible employees to purchase Common Stock under the Plan ("Offerings"). Unless otherwise determined by the Administrator, an Offering will begin on the first business day occurring on or after each January 1st and July 1st and will end on the last business day occurring on or before the following June 30th and December 31st, respectively. The Administrator may, in its discretion, designate a different period for any Offering, provided that no Offering shall exceed 12 months in duration or overlap any other Offering.

3. Eligibility. All individuals classified as employees on the payroll records of the Company and each Designated Subsidiary are eligible to participate in any one or more of the Offerings under the Plan, provided that (i) as of the first day of the applicable Offering (the "Offering Date") they are customarily employed by the Company or a Designated Subsidiary for more than 20 hours a week, and (ii) they were employees of the Company on the first day of the month preceding the Offering Date (i.e., employment status determined as of June 1 for the Offering commencing on July 1 and determined as of December 1 for the Offering commencing on January 1). Notwithstanding any other provision herein, individuals who are not contemporaneously classified as employees of the Company or a Designated Subsidiary for purposes of the Company's or applicable Designated Subsidiary's payroll system are not considered to be eligible employees of the Company or any Designated Subsidiary and shall not be eligible to participate in the Plan. In the event any such individuals are reclassified as employees of the Company or a Designated Subsidiary for any purpose, including, without limitation, common law or statutory employees, by any action of any third party, including, without limitation, any government agency, or as a result of any private lawsuit, action or administrative proceeding, such individuals shall, notwithstanding such reclassification, remain ineligible for participation. Notwithstanding the foregoing, the exclusive means for individuals who are not contemporaneously classified as employees of the Company or a Designated Subsidiary on the Company's or Designated Subsidiary's payroll system to become eligible to participate in this Plan is through an amendment to this Plan, duly executed by the Company, which specifically renders such individuals eligible to participate herein.

4. Participation.

(a) Participants in Offering. An eligible employee who is not a Participant on any Offering Date may participate in such Offering by submitting an enrollment form to his or her appropriate payroll location at least 15 business days before the Offering Date (or by such other deadline as shall be established by the Administrator for the Offering).

(b) Enrollment. The enrollment form will (a) state a whole percentage to be deducted from an eligible employee's Compensation (as defined in Section 11) per pay period, (b) authorize the purchase of Common Stock in each Offering in accordance with the terms of the Plan and (c) specify the exact name or names in which shares of Common Stock purchased for such individual are to be issued pursuant to Section 10. An employee who does not enroll in accordance with these procedures will be deemed to have waived the right to participate. Unless a Participant files a new enrollment form or withdraws from the Plan, such Participant's deductions and purchases will continue at the same percentage of Compensation for future Offerings, provided he or she remains eligible.

(c) Notwithstanding the foregoing, participation in the Plan will neither be permitted nor be denied contrary to the requirements of the Code.

5. Employee Contributions. Each eligible employee may authorize payroll deductions at a minimum of one percent (1%) up to a maximum of ten percent (10%) of such employee's Compensation for each pay period. The Company will maintain book accounts showing the amount of payroll deductions made by each Participant for each Offering. No interest will accrue or be paid on payroll deductions.

6. Deduction Changes. Except as may be determined by the Administrator in advance of an Offering, a Participant may not increase or decrease his or her payroll deduction during any Offering, but may increase or decrease his or her payroll deduction with respect to the next Offering (subject to the limitations of Section 5) by filing a new enrollment form at least 15 business days before the next Offering Date (or by such other deadline as shall be established by the Administrator for the Offering). The Administrator may, in advance of any Offering, establish rules permitting a Participant to increase, decrease or terminate his or her payroll deduction during an Offering.

7. Withdrawal. A Participant may withdraw from participation in the Plan by delivering a written notice of withdrawal to his or her appropriate payroll location. The Participant's withdrawal will be effective as of the next business day. Following a Participant's withdrawal, the Company will promptly refund such individual's entire account balance under the Plan to him or her (after payment for any Common Stock purchased before the effective date of withdrawal). Partial withdrawals are not permitted. Such an employee may not begin participation again during the remainder of the Offering, but may enroll in a subsequent Offering in accordance with Section 4.

8. Grant of Options. On each Offering Date, the Company will grant to each eligible employee who is then a Participant in the Plan an option ("Option") to purchase on the last day of such Offering (the "Exercise Date"), at the Option Price (as defined herein) for, the lowest of (a) a number of shares of Common Stock determined by dividing such Participant's accumulated payroll deductions on such Exercise Date by the Option Price (as defined herein), (b) 2,500 shares; or (c) such other lesser maximum number of shares as shall have been established by the Administrator in advance of the Offering; provided, however, that such Option shall be subject to the limitations set forth below. Each Participant's Option shall be exercisable only to the extent of such Participant's accumulated payroll deductions on the Exercise Date. The purchase price for each share purchased under each Option (the "Option Price") will be eighty-five percent (85%) of the Fair Market Value of the Common Stock on the Offering Date or the Exercise Date, whichever is less.

Notwithstanding the foregoing, no Participant may be granted an Option hereunder if such Participant, immediately after the Option was granted, would be treated as owning stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company or any Parent or Subsidiary (as defined in Section 11). For purposes of the preceding sentence, the attribution rules of Section 424(d) of the Code shall apply in determining the stock ownership of a Participant, and all stock which the Participant has a contractual right to purchase shall be treated as stock owned by the Participant. In addition, no Participant may be granted an Option which permits his or her rights to purchase stock under the Plan, and any other employee stock purchase plan of the Company and its Parents and Subsidiaries, to accrue at a rate which exceeds $25,000 of the fair market value of such stock (determined on the Option grant date or dates) for each calendar year in which the Option is outstanding at any time. The purpose of the limitation in the preceding sentence is to comply with Section 423(b)(8) of the Code and shall be applied taking Options into account in the order in which they were granted.

9. Exercise of Option and Purchase of Shares. Each employee who continues to be a Participant in the Plan on the Exercise Date shall be deemed to have exercised his or her Option on such date and shall acquire from the Company such number of whole shares of Common Stock reserved for the purpose of the Plan as his or her accumulated payroll deductions on such date will purchase at the Option Price, subject to any other limitations contained in the Plan. Any amount remaining in a Participant's account at the end of an Offering solely by reason of the inability to purchase a fractional share will be carried forward to the next Offering; any other balance remaining in a Participant's account at the end of an Offering will be refunded to the Participant promptly.

10. Issuance of Certificates. Certificates representing shares of Common Stock purchased under the Plan may be issued only in the name of the employee, in the name of the employee and another person of legal age as joint tenants with rights of survivorship, or in the name of a broker authorized by the employee to be his, her or their, nominee for such purpose.

11. Definitions.

The term "Compensation" means the amount of base pay, prior to salary reduction pursuant to Sections 125, 132(f) or 401(k) of the Code, but excluding overtime, commissions, incentive or bonus awards, allowances and reimbursements for expenses such as relocation allowances or travel expenses, income or gains on the exercise of Company stock options, and similar items.

The term "Designated Subsidiary" means any present or future Subsidiary (as defined below) that has been designated by the Board to participate in the Plan. The Board may so designate any Subsidiary, or revoke any such designation, at any time and from time to time, either before or after the Plan is approved by the stockholders.

The term "Fair Market Value of the Common Stock" on any given date means the fair market value of the Common Stock determined in good faith by the Administrator; provided, however, that if the Common Stock is admitted to quotation on the NASDAQ Capital Market, the NASDAQ Global Market, the NASDAQ Global Select Market or another national securities exchange, the determination shall be made by reference to the closing price on such date. If there is no closing price for such date, the determination shall be made by reference to the last date preceding such date for which there is a closing price.

The term "Initial Public Offering" means the consummation of the first underwritten firm commitment public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale by the Company of its Common Stock.

The term "Parent" means a "parent corporation" with respect to the Company, as defined in Section 424(e) of the Code.

The term "Participant" means an individual who is eligible as determined in Section 3 and who has complied with the provisions of Section 4.

The term "Subsidiary" means a "subsidiary corporation" with respect to the Company, as defined in Section 424(f) of the Code.

12. Rights on Termination of Employment. If a Participant's employment terminates for any reason before the Exercise Date for any Offering, no payroll deduction will be taken from any pay due and owing to the Participant and the balance in the Participant's account will be paid to such Participant or, in the case of such Participant's death, to his or her designated beneficiary as if such Participant had withdrawn from the Plan under Section 7. An employee will be deemed to have terminated employment, for this purpose, if the corporation that employs him or her, having been a Designated Subsidiary, ceases to be a Subsidiary, or if the employee is transferred to any corporation other than the Company or a Designated Subsidiary. An employee will not be deemed to have terminated employment for this purpose, if the employee is on an approved leave of absence for military service or sickness or for any other purpose approved by the Company, if the employee's right to reemployment is guaranteed either by a statute or by contract or under the policy pursuant to which the leave of absence was granted or if the Administrator otherwise provides in writing.

13. Special Rules. Notwithstanding anything herein to the contrary, the Administrator may adopt special rules applicable to the employees of a particular Designated Subsidiary, whenever the Administrator determines that such rules are necessary or appropriate for the implementation of the Plan in a jurisdiction where such Designated Subsidiary has employees; provided that such rules are consistent with the requirements of Section 423(b) of the Code. Any special rules established pursuant to this Section 13 shall, to the extent possible, result in the employees subject to such rules having substantially the same rights as other Participants in the Plan.

14. Optionees Not Stockholders. Neither the granting of an Option to a Participant nor the deductions from his or her pay shall constitute such Participant a holder of the shares of Common Stock covered by an Option under the Plan until such shares have been purchased by and issued to him or her.

15. Rights Not Transferable. Rights under the Plan are not transferable by a Participant other than by will or the laws of descent and distribution, and are exercisable during the Participant's lifetime only by the Participant.

16. Application of Funds. All funds received or held by the Company under the Plan may be combined with other corporate funds and may be used for any corporate purpose.

17. Adjustment in Case of Changes Affecting Common Stock. In the event of a subdivision of outstanding shares of Common Stock, the payment of a dividend in Common Stock or any other change affecting the Common Stock, the number of shares approved for the Plan and the share limitation set forth in Section 8 shall be equitably or proportionately adjusted to give proper effect to such event.

18. Amendment of the Plan. The Board may at any time and from time to time amend the Plan in any respect, except that without the approval within 12 months of such Board action by the stockholders, no amendment shall be made increasing the number of shares approved for the Plan or making any other change that would require stockholder approval in order for the Plan, as amended, to qualify as an "employee stock purchase plan" under Section 423(b) of the Code.

19. Insufficient Shares. If the total number of shares of Common Stock that would otherwise be purchased on any Exercise Date plus the number of shares purchased under previous Offerings under the Plan exceeds the maximum number of shares issuable under the Plan, the shares then available shall be apportioned among Participants in proportion to the amount of payroll deductions accumulated on behalf of each Participant that would otherwise be used to purchase Common Stock on such Exercise Date.

20. Termination of the Plan. The Plan may be terminated at any time by the Board. Upon termination of the Plan, all amounts in the accounts of Participants shall be promptly refunded.

21. Governmental Regulations. The Company's obligation to sell and deliver Common Stock under the Plan is subject to obtaining all governmental approvals required in connection with the authorization, issuance, or sale of such stock.

22. Governing Law. This Plan and all Options and actions taken thereunder shall be governed by, and construed in accordance with, the laws of the State of Delaware, applied without regard to conflict of law principles.

23. Issuance of Shares. Shares may be issued upon exercise of an Option from authorized but unissued Common Stock, from shares held in the treasury of the Company, or from any other proper source.

24. Tax Withholding. Participation in the Plan is subject to any minimum required tax withholding on income of the Participant in connection with the Plan. Each Participant agrees, by entering the Plan, that the Company and its Subsidiaries shall have the right to deduct any such taxes from any payment of any kind otherwise due to the Participant, including shares issuable under the Plan.

25. Notification Upon Sale of Shares. Each Participant agrees, by entering the Plan, to give the Company prompt notice of any disposition of shares purchased under the Plan where such disposition occurs within two years after the date of grant of the Option pursuant to which such shares were purchased.

26. Effective Date and Approval of Shareholders. The Plan shall take effect on the date of the Company's Initial Public Offering, subject to approval by the holders of a majority of the votes cast at a meeting of stockholders at which a quorum is present or by written consent of the stockholders.

DATE APPROVED BY BOARD OF DIRECTORS: July 2, 2014

DATE APPROVED BY STOCKHOLDERS: July 2, 2014

AMENDED BY BOARD OF DIRECTORS: June 7, 2017

EXHIBIT 10.3

Confidential

March 21, 2017

Michael Cloonan

Dear Mike:

At Sage, our mission is to make life better for patients with central nervous systems diseases by discovering, developing, and delivering important new medicines to the market. Our success results from our people creating products with benefits for patients coupled with our drive to excel in all areas of our business.

On behalf of Sage Therapeutics, (the "Company"), I am pleased to extend an offer of employment to you. You have made an outstanding impression, and we welcome you to join our team and our quest to make a difference for patients. The purpose of this letter is to summarize the terms of your employment with the Company.

Position ***Chief Business Officer, Reporting to Jeff Jonas, Chief Executive Officer***

This position is a key factor in SAGE's continued success, and we are confident that it will be an exciting opportunity for you as well. In considering this role, we ask that you agree to devote your full business time, best efforts, skill, knowledge, attention, and energies to the advancement of the Company's business and interests and to the performance of your duties and responsibilities as an employee of the Company.

Compensation Your base rate of compensation will be $18,333.34 bi-monthly (annualized rate of $440,000.00), less all applicable federal, state, and local taxes and withholdings, to be paid in installments in accordance with the Company's standard payroll practices. Such base salary may be adjusted from time to time in accordance with normal business practices and at the sole discretion of the Company.

In addition, you will be eligible to participate in the Sage Bonus Plan at an annual target of 40% of your base salary, which will be prorated based upon your date of hire. This discretionary bonus will be based on the Company's assessment and attainment of corporate and individual goals.

Subject to the approval and in connection with the commencement of your employment, you will be granted a non-qualified stock option to purchase 185,000 shares of the Company's common stock (the "Option"). The Option will be granted on the first business day of the month following the commencement of your employment. The exercise price of the Option will be at least equal to the fair market value of the Company's common stock on the date of grant. The Option will be subject to the terms and conditions of the Company's then-current inducement stock option plan and form of stock option agreement (the "Plan Documents"). The Option will vest as follows: the Option will become exercisable as to 25% of the shares on the first anniversary of the Vesting Commencement Date, as defined below; and thereafter, shall become exercisable as to the remaining 75% of the shares in 36 equal monthly installments at the end of each month following the first anniversary of the Vesting Commencement Date until fully vested. Vesting is contingent on your continued full-time employment with the Company and subject to the other terms of the Plan Documents. The Vesting Commencement Date is your date of hire with the Company

Sign On Bonus The company will provide you with a sign-on bonus of $125,000 which will be subject to customary deductions and withholdings as required by law. If you should for any reason voluntarily terminate your employment with Sage within the first 12 months of receiving the sign-on bonus, you agree to return the gross amount of the payment within 30 days of your departure date. If you voluntarily terminate your employment with Sage within 13-24 months of receiving the bonus, you agree to return to the Company 50% of the gross amount of the sign on bonuses.

Benefits Because we care about the well-being of our employees, we are pleased to provide you with a comprehensive benefits and wellness package. This is meant to assist you in staying healthy, planning for the future, and developing your career. Our benefits currently include medical, dental, vision, vacation, wellness benefit, flexible-spending accounts, 401k, and much more. Additional information about these benefits is outlined in the enclosed summary.

Eligibility for Employment For purposes of federal immigration law, you will be required to provide the Company documentary evidence that you are eligible for employment in the United States and evidence of your identity. This requirement applies to U.S. citizens, as well as foreign nationals. Such documentation must be provided to the Company within three (3) business days of your date of hire. Please bring the appropriate documents with you on your first day of employment.

As a condition of your employment, you will be required to execute the "Agreement Concerning Loyalty, Confidential Business Information, Inventions and Post-Employment Activity" (the "Agreement").

Employment Relationship While we hope for a long and mutually beneficial relationship, you acknowledge that this letter does not constitute a contract of employment for any particular period of time and does not affect the at-will nature of the employment relationship with the Company. Either you or Sage has the right to terminate your employment at any time.

Prior Obligations By signing this letter, you represent that you are not bound by any employment contract, restrictive covenant, or other restriction preventing you from entering into employment with or carrying out your responsibilities for the Company, or which is in any way inconsistent with the terms of this letter. Please note that this offer letter is your formal offer of employment and supersedes any and all prior or contemporaneous agreements, discussions, and understandings, whether written or oral, relating to the subject matter of this letter or your employment with the Company. The resolution of any disputes under this letter will be governed by Massachusetts law.

If this letter correctly sets forth the initial terms under which you will be employed by the Company, please sign this letter in the space provided below and return it to me along with the signed Agreement Concerning Loyalty, Confidential Business Information, Inventions and Post-Employment Activity. This offer will remain open for two business days from the date of this letter. This offer is contingent on satisfactory drug test, background check and reference checks.

We are very enthusiastic about having you join our team! We believe you will make a critical contribution to our success and believe that the opportunities presented will allow you significant personal and professional growth. We hope that you will find Sage a rewarding experience. If you have any questions please do not hesitate to call anytime.

Very truly yours,

Sage Therapeutics

By: Erin Lanciani
SVP, People & Organizational Strategy

/s/ Michael Cloonan	3/24/2017	4/24/2017
Signature	Date	Start Date

EXHIBIT 10.4

SEVERANCE AND CHANGE IN CONTROL AGREEMENT

This Severance and Change in Control Agreement (this "Agreement") is made as of March 21, 2017 by and between Sage Therapeutics, Inc., a Delaware corporation (the "Company"), and Michael Cloonan (the "Executive") and shall become effective on the date of hire with the Company.

1. Purpose. The Company considers it essential to the best interests of its stockholders to promote and preserve the continuous employment of key management personnel. The Board of Directors of the Company (the "Board") recognizes that, as is the case with many corporations, the possibility of a Change in Control (as defined in Section 2 hereof) exists and that such possibility, and the uncertainty and questions that it may raise among management, may result in the departure or distraction of key management personnel to the detriment of the Company and its stockholders. Therefore, the Board has determined that appropriate steps should be taken to reinforce and encourage the continued attention and dedication of members of the Company's key management, including the Executive, to their assigned duties without distraction, including in the face of potentially disturbing circumstances arising from the possibility of a Change in Control. Nothing in this Agreement shall be construed to affect the at-will nature of the employment relationship, the Executive shall not have any right to be retained in the employ of the Company.

2. Change in Control. A "Change in Control" shall be deemed to have occurred upon the occurrence of any one of the following events: (a) the sale of all or substantially all of the assets of the Company on a consolidated basis to an unrelated person or entity, (b) a merger, reorganization or consolidation pursuant to which the holders of the Company's outstanding voting power and outstanding stock immediately prior to such transaction do not own a majority of the outstanding voting power and outstanding stock or other equity interests of the resulting or successor entity (or its ultimate parent, if applicable) immediately upon completion of such transaction, (c) the sale of all of the stock of the Company to an unrelated person, entity or group thereof acting in concert, or (d) any other transaction in which the owners of the Company's outstanding voting power immediately prior to such transaction do not own at least a majority of the outstanding voting power of the Company or any successor entity immediately upon completion of the transaction other than as a result of the acquisition of securities directly from the Company.

3. Terminating Event.

A "Terminating Event" shall mean any of the events provided in this Section 3:

(a) Termination by the Company. Termination by the Company of the employment of the Executive with the Company for any reason other than for Cause, death or Disability. For purposes of this Agreement, "Cause" shall mean, as determined by the Company in good faith:

(i) the indictment the Executive of any felony, any crime involving the Company, or any crime involving fraud, moral turpitude or dishonesty;

(ii) any unauthorized use or disclosure of the Company's proprietary information which has an adverse effect on the Company's business or reputation. As used in this paragraph, "Proprietary Information" means any information in whatever form, tangible or intangible, related to the business of the Company unless the information is publicly available in hard copy or electronic format, through lawful means;

(iii) any intentional misconduct or gross negligence on the Executive's part which has a materially adverse effect on the Company's business or reputation; or

(iv) the Executive's repeated and willful failure to perform the duties, functions and responsibilities of the Executive's position after a written warning from the Company.

A Terminating Event shall not be deemed to have occurred pursuant to this Section 3(a) solely as a result of the Executive becoming an employee of any direct or indirect successor to the business or assets of the Company, rather than continuing as an employee of the Company following a Change in Control. For purposes hereof, the Executive will be considered "Disabled" if, as a result of the Executive's incapacity due to physical or mental illness, the Executive shall have been absent from his duties to the Company on a full-time basis for 180 calendar days in the aggregate in any 12-month period.

(b) Termination by the Executive for Good Reason. Termination by the Executive of the Executive's employment with the Company for Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good Reason Process" (hereinafter defined) following, the occurrence of any of the following events:

(i) a material diminution in the Executive's responsibilities, authority or duties;

(ii) a material diminution in the Executive's base salary except for across-the-board salary reductions based on the Company's financial performance similarly affecting all or substantially all senior management employees of the Company;

(iii) a material change, defined as miles or more, in the geographic location at which the Executive is required to provides services to the Company, not including business travel and short-term assignments; or

(iv) a material breach of this Agreement by the Company.

"Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the first occurrence of the Good Reason condition within 60 days of the first occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive provides a Notice of Termination to the Company within 60 days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

4. **Change in Control Payment**. In the event a Terminating Event occurs on or within the 12 months immediately after a Change in Control (such 12-month period, the "Change in Control Period"), subject to the Executive signing a separation agreement containing, among other provisions, a general release of claims in favor of the Company and related persons and entities, confidentiality, return of property and non-disparagement, in the form attached hereto as Attachment A (the "Separation Agreement and Release") and the Separation Agreement and Release becoming irrevocable, all within 60 days after the Date of Termination or end of the Cure Period , the following shall occur

(a) the Company shall pay to the Executive an amount equal to the sum of (i) 9 months of the Executive's annual base salary in effect immediately prior to the Terminating Event (or the Executive's annual base salary in effect immediately prior to the Change in Control, if higher), and (ii) a pro rata portion of the Executive's target bonus for the fiscal year in which the termination of employment occurs, determined by multiplying the target bonus by a fraction, the numerator of which shall be the number of days during the fiscal year in which the Executive was employed by the Company and the denominator of which shall be 365;

(b) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation , then the Company shall pay to the Executive a lump sum payment, in an amount equal to 12 times the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company;

(c) notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, all stock options and other stock-based awards with time-based vesting held by the Executive shall immediately accelerate and become fully exercisable and nonforfeitable as of the Executive's Date of Termination conditioned upon the Separation Agreement and Release becoming irrevocable; and

(d) the amounts payable under this Section 4 shall be paid out in a lump sum commencing within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, the amounts shall be paid in the second calendar year by the last day of such 60-day period. All other wages earned, including, but not limited to, accrued vacation, to the Date of Termination shall be paid on the Date of Termination.

5. **Severance Outside the Change in Control Period**. In the event a Terminating Event occurs at any time other than during the Change in Control Period, subject to the Executive signing the Separation Agreement and Release and the Separation Agreement and Release becoming irrevocable, all within 60 days after the Date of Termination, the following shall occur:

(a) the Company shall pay to the Executive an amount equal to 12 months times the Executive's annual base salary in effect immediately prior to the Terminating Event;

(b) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for 12 months in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company; and

(c) the amounts payable under this Section 5 shall be paid out in substantially equal installments in accordance with the Company's payroll practice over 12 months commencing within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, the Severance Amount shall begin to be paid in the second calendar year by the last day of such 60-day period; provided, further, that the initial payment shall include a catch-up payment to cover amounts retroactive to the day immediately following the Date of Termination. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2).

6. Additional Limitation.

(a) Anything in this Agreement to the contrary notwithstanding, in the event that the amount of any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise, calculated in a manner consistent with Section 280G of the Code and the applicable regulations thereunder (the "Compensatory Payments"), would be subject to the excise tax imposed by Section 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), (or any successor provision), then the Compensatory Payments shall be reduced so that the sum of all of the Compensatory Payments shall be $1.00 less than the amount at which the Executive becomes subject to the excise tax imposed by Section 4999 of the Code (or any successor provision); provided that such reduction shall only occur if it would result in the Executive receiving a higher After Tax Amount (as defined below) than the Executive would receive if the Compensatory Payments were not subject to such reduction. In such event, the Compensatory Payments shall be reduced in the following order, in each case, in reverse chronological order beginning with the Compensatory Payments that are to be paid the furthest in time from consummation of the transaction that is subject to Section 280G of the Code: (i) cash payments not subject to Section 409A of the Code; (ii) cash payments subject to Section 409A of the Code; (iii) equity-based payments and acceleration; and (iv) non-cash forms of benefits; provided that in the case of all the foregoing Compensatory Payments all amounts or payments that are not subject to calculation under Treas. Reg. §1.280G-1, Q&A-24(b) or (c) shall be reduced before any amounts that are subject to calculation under Treas. Reg. §1.280G-1, Q&A-24(b) or (c).

(b) For purposes of this Section 6, the "After Tax Amount" means the amount of the Compensatory Payments less all federal, state, and local income, excise and employment taxes imposed on the Executive as a result of the Executive's receipt of the Compensatory Payments. For purposes of determining the After Tax Amount, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in each applicable state and locality, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes.

(c) The determination as to whether a reduction in the Compensatory Payments shall be made pursuant to Section 6(a) shall be made by an accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within 15 business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

7. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive's "separation from service" within the meaning of Section 409A of the Code, the Company determines that the Executive is a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, then to the extent any payment or benefit that the Executive becomes entitled to under this Agreement on account of the Executive's separation from service would be considered deferred compensation subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, such payment shall not be payable and such benefit shall not be provided until the date that is the earlier of (A) six months and one day after the Executive's separation from service, or (B) the Executive's death.

(b) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(c) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year. Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(d) To the extent that any payment or benefit described in this Agreement constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Executive's termination of employment, then such payments or benefits shall be payable only upon the Executive's "separation from service." The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-1(h).

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

8. **Term**. This Agreement shall take effect on the date first set forth above and shall terminate upon the earlier of (a) the termination of the Executive's employment with the Company for any reason other than the occurrence of a Terminating Event, or (b) the date all amounts have been paid to the Executive upon a Terminating Event pursuant to Section 4 or Section 5 hereof.

9. **Withholding**. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

10. **Notice and Date of Termination**.

(a) Notice of Termination. After a Change in Control and during the term of this Agreement, any purported termination of the Executive's employment (other than by reason of death) shall be communicated by written Notice of Termination from one party hereto to the other party hereto in accordance with this Section 10. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(b) Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by his death, the date of his death; (ii) if the Executive's employment is terminated on account of Executive's Disability or by the Company for Cause, the date on which Notice of Termination is given; (iii) if the Executive's employment is terminated by the Company without Cause the date on which a Notice of Termination is given; (iv) if the Executive's employment is terminated by the Executive without Good Reason, 30 days after the date on which a Notice of Termination is given, and (v) if the Executive's employment is terminated by the Executive with Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not result in a termination by the Company for purposes of this Agreement.

11. **No Mitigation**. The Company agrees that, if the Executive's employment by the Company is terminated during the term of this Agreement, the Executive is not required to seek other employment or to attempt in any way to reduce any amounts payable to the Executive by the Company pursuant to Section 4 or Section 5 hereof. Further, the amount of any payment provided for in this Agreement shall not be reduced by any compensation earned by the Executive as the result of employment by another employer.

12. **Consent to Jurisdiction**. The parties hereby consent to the jurisdiction of the Superior Court or the Commonwealth of Massachusetts and the United States District Court for the District of Massachusetts. Accordingly, with respect to any such court action, the Executive (a) submits to the personal jurisdiction of such courts; (b) consents to service of process; and (c) waives any other requirement (whether imposed by statute, rule of court, or otherwise) with respect to personal jurisdiction or service of process.

13. **Integration**. This Agreement constitutes the entire agreement between the parties with respect to severance pay, benefits and accelerated vesting in connection with any termination of employment, to the extent inconsistent with any prior agreements supersedes the inconsistent provisions of such prior agreements between the parties concerning such subject matter, including without limitation any provisions of any offer letter or employment agreement relating to severance pay or benefits in connection with the ending of Executive's employment relationship with the Company. In the interest of clarity, any agreement relating to confidentiality, noncompetition, nonsolicitation or assignment of inventions shall not be affected by the Agreement.

14. **Successor to the Executive**. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal representatives, executors, administrators, heirs, distributees, devisees and legatees. In the event of the Executive's death after a Terminating Event but prior to the completion by the Company of all payments due him under this Agreement, the Company shall continue such payments to the Executive's beneficiary designated in writing to the Company prior to his death (or to his estate, if the Executive fails to make such designation).

15. **Enforceability**. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any Section of this Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

16. **Waiver**. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

17. **Notices**. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service of by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company, or to the Company at its main office, attention of the Board of Directors.

18. **Amendment**. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

19. **Effect on Other Plans and Agreements**. An election by the Executive to resign for Good Reason under the provisions of this Agreement shall not be deemed a voluntary termination of employment by the Executive for the purpose of interpreting the provisions of any of the Company's benefit plans, programs or policies. Nothing in this Agreement shall be construed to limit the rights of the Executive under the Company's benefit plans, programs or policies except as otherwise provided in Section 6 hereof, and except that the Executive shall have no rights to any severance benefits under any Company severance pay plan, offer letter or otherwise. In the event that the Executive is party to an agreement with the Company providing for payments or benefits under such agreement and this Agreement, the terms of this Agreement shall govern and Executive may receive payment under this Agreement only and not both. Further, Section 4 and Section 5 of this Agreement are mutually exclusive and in no event shall Executive be entitled to payments or benefits pursuant to Section 4 and Section 5 of this Agreement.

20. **Governing Law**. This is a Massachusetts contract and shall be construed under and be governed in all respects by the laws of the Commonwealth of Massachusetts, without giving effect to the conflict of laws principles of such Commonwealth. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the First Circuit.

21. **Successor to Company**. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a material breach of this Agreement.

22. **Gender Neutral**. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

23. **Counterparts**. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first above written.

SAGE THERAPEUTICS, INC.

By: /s/ Jeffrey Jonas
Name: Jeffrey M. Jonas
Title: Chief Executive Officer

/s/ Michael Cloonan
Michael Cloonan

Exhibit 31.1

Certification

I, Jeffrey M. Jonas, M.D., certify that:

1. I have reviewed this quarterly report on Form 10-Q for the period ended June 30, 2017 of Sage Therapeutics, 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 controls 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: August 3, 2017

/s/ Jeffrey M. Jonas

Name: Jeffrey M. Jonas, M.D.
Title: Chief Executive Officer, President and Director
(Principal Executive Officer)

Exhibit 31.2

Certification

I, Kimi Iguchi, certify that:

1. I have reviewed this quarterly report on Form 10-Q for the period ended June 30, 2017 of Sage Therapeutics, 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 controls 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: August 3, 2017

/s/ Kimi Iguchi

Name: Kimi Iguchi
Title: Chief Financial Officer (Principal Financial and Accounting Officer)

Exhibit 32.1

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

In connection with this Quarterly Report on Form 10-Q of Sage Therapeutics, Inc. (the "Company") for the period ended June 30, 2017, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers hereby certifies, pursuant to 18 U.S.C. (section) 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of his or her knowledge:

1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Jeffrey M. Jonas

Name: Jeffrey M. Jonas, M.D.
Title: Chief Executive Officer, President and Director (Principal Executive Officer)

Date: August 3, 2017

/s/ Kimi Iguchi

Name: Kimi Iguchi
Title: Chief Financial Officer (Principal Financial and Accounting Officer)

Date: August 3, 2017