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

Form 10-K

(Mark One)

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

For the fiscal year ended December 31, 2022

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: 000-50768

ACADIA PHARMACEUTICALS INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**06-1376651**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification Number)**
12830 El Camino Real, Suite 400 San Diego, California	**92130**
(Address of Principal Executive Offices)	**(Zip Code)**

Registrant's telephone number, including area code:

(858) 558-2871

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.0001 per share	**ACAD**	**The Nasdaq Stock Market LLC**

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes ☐ No ☒

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer", "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Securities Exchange Act of 1934:

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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Securities Exchange Act of 1934). Yes ☐ No ☒

As of June 30, 2022, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was approximately $1.7 billion, based on the closing price of the registrant's common stock on the Nasdaq Global Select Market on June 30, 2022 of $14.09 per share.

As of February 21, 2023, 162,230,184 shares of the registrant's common stock, $0.0001 par value, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement to be filed with the Securities and Exchange Commission by May 1, 2023 are incorporated by reference into Part III of this report.

ACADIA PHARMACEUTICALS INC.

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PART I

FORWARD-LOOKING STATEMENTS

This report and the information incorporated herein by reference contain forward-looking statements that involve a number of risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. Although our forward-looking statements reflect the good faith judgment of our management, these statements can only be based on facts and factors currently known by us. Consequently, forward-looking statements are inherently subject to risks and uncertainties, and actual results and outcomes may differ materially from results and outcomes discussed in the forward-looking statements. In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this report, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and you are cautioned not to unduly rely upon these statements.

Forward-looking statements can be identified by the use of forward-looking words such as "believes," "expects," "hopes," "may," "will," "plans," "intends," "estimates," "could," "should," "would," "continue," "seeks," "aims," "projects," "predicts," "pro forma," "anticipates," "potential" or other similar words (including their use in the negative), or by discussions of future matters such as the benefits to be derived from NUPLAZID® (pimavanserin), trofinetide and from our drug candidates, the potential market opportunities for pimavanserin, trofinetide and our other drug candidates, our strategy for the commercialization of NUPLAZID, our plans for exploring and developing pimavanserin for indications other than Parkinson's disease psychosis, our plans and timing with respect to seeking regulatory approvals, the potential commercialization of any of our drug candidates that receive regulatory approval, the progress, timing, results or implications of clinical trials and other development activities involving pimavanserin, trofinetide and our other drug candidates, our strategy for discovering, developing and, if approved, commercializing drug candidates, our existing and potential future collaborations, our estimates of future payments, revenues and profitability, our estimates regarding our capital requirements, future expenses and need for additional financing, possible changes in legislation, and other statements that are not historical. These statements include but are not limited to statements under the captions "Business," "Risk Factors," and "Management's Discussion and Analysis of Financial Condition and Results of Operations" as well as other sections in this report. You should be aware that the occurrence of any of the events discussed under the caption "Risk Factors" and elsewhere in this report could substantially harm our business, results of operations and financial condition and cause our results to differ materially from those expressed or implied by our forward-looking statements. If any of these events occurs, the trading price of our common stock could decline and you could lose all or a part of the value of your shares of our common stock.

The cautionary statements made in this report are intended to be applicable to all related forward-looking statements wherever they may appear in this report. We urge you not to place undue reliance on these forward-looking statements, which speak only as of the date of this report. We undertake no obligation to update any forward-looking statements made in this report to reflect events or circumstances after the date of this report or to reflect new information or the occurrence of unanticipated events, except as required by law.

Summary of Risk Factors

We face risks and uncertainties related to our business, many of which are beyond our control. In particular, risks associated with our business include:

- Our prospects are highly dependent on the continued successful commercialization of NUPLAZID. To the extent we cannot maintain or increase sales of NUPLAZID, our business, financial condition and results of operations may be materially adversely affected and the price of our common stock may decline.
- Our prospects are also dependent on the success of trofinetide. To the extent regulatory approval of trofinetide is delayed or not granted or, if approved, trofinetide is not commercially successful, our business, financial condition and results of operations may be materially adversely affected and the price of our common stock may decline.

- The terms of the FDA's approval of NUPLAZID for the treatment of hallucinations and delusions associated with PDP may limit its commercial potential. Additionally, NUPLAZID is still subject to an ongoing post-marketing commitment.
- We have historically relied on a limited internal commercial team and a limited network of third-party distributors and pharmacies to market and sell NUPLAZID, our only commercial product. If this approach ceases to be effective, our commercialization of NUPLAZID may be adversely affected, and NUPLAZID may not be profitable.
- If we do not obtain regulatory approval of pimavanserin for other indications in addition to treatment of PDP in the U.S., we will not be able to market pimavanserin for other indications in the U.S., which will limit our commercial revenues.
- If we are unable to effectively train and equip our sales force, our ability to successfully commercialize NUPLAZID and trofinetide, if approved, will be harmed.
- NUPLAZID may not gain maximal acceptance among physicians, patients, and the medical community, thereby limiting our potential to generate revenues.
- Our ability to generate product revenues will be diminished if NUPLAZID's coverage from payors is decreased or if patients have unacceptably high co-pay amounts.
- Delays, suspensions and terminations in our clinical trials could result in increased costs to us and delay our ability to generate product revenues.
- Healthcare reform measures may negatively impact our ability to sell NUPLAZID or our product candidates, if approved, profitably.
- If we are unable to attract, retain, and motivate key management, research and development, and sales and marketing personnel, our drug development programs, our research and discovery efforts, and our commercialization plans may be delayed and we may be unable to successfully commercialize our products, or develop our product candidates.
- We expect our net losses to continue for the next few years and are unable to predict the extent of future losses or when we will become profitable, if ever.
- If we fail to obtain the capital necessary to fund our operations, we will be unable to successfully continue the development and commercialization of NUPLAZID or successfully develop and commercialize our other product candidates.
- We expect that our results of operations will fluctuate, which may make it difficult to predict our future performance from period to period.
- Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.
- Public health threats, including the continuing COVID-19 pandemic, have impacted our clinical trials and could have an adverse effect on our operations and financial results, or may cause us to modify or suspend our financial guidance.
- We previously have depended, and in the future may depend, on collaborations with third parties to develop and commercialize selected product candidates other than pimavanserin, and we have limited control over how those third parties conduct development and commercialization activities for such product candidates.
- We currently depend, and in the future will continue to depend, on third parties to manufacture NUPLAZID, trofinetide and any other product candidates. If these manufacturers fail to provide us or our collaborators with adequate supplies of clinical trial materials and commercial product or fail to comply with the requirements of regulatory authorities, we may be unable to develop or commercialize NUPLAZID, trofinetide or any other product candidates.
- If we fail to comply with the obligations in agreements under which we license intellectual property rights from third parties, we could lose license rights to certain of our product candidates.
- Our ability to compete may decline if we do not adequately protect our proprietary rights.

- If our competitors develop and market products that are more effective than NUPLAZID, trofinetide or our other product candidates, they may reduce or eliminate our commercial opportunity.
- Our stock price historically has been, and is likely to remain, highly volatile.

Item 1. ***Business.***

Company Overview

We are a biopharmaceutical company focused on the development and commercialization of innovative medicines that address unmet medical needs in central nervous system (CNS) disorders and rare diseases. We have a portfolio of commercial stage products, in-development product opportunities, and research programs that are designed to address significant unmet needs in CNS disorders and rare diseases. In order to achieve significant long-term growth, we will develop our current portfolio, expand our pipeline of early and late-stage programs through strategic business development, and invest in targeted internal research efforts.

We developed and successfully commercialized NUPLAZID (pimavanserin), which was approved by the U.S. Food and Drug Administration (FDA) in April 2016 for the treatment of hallucinations and delusions associated with Parkinson's disease psychosis (PDP), and is the first and only drug approved in the United States for this condition. NUPLAZID is a selective serotonin inverse agonist/antagonist, preferentially targeting 5-HT_{2A} receptors with no appreciable affinity for dopaminergic, histaminergic, or muscarinic receptors. Through this novel mechanism, NUPLAZID demonstrated significant efficacy in reducing the hallucinations and delusions associated with PDP without negatively impacting motor function in our Phase 3 pivotal trial. NUPLAZID has the potential to avoid many of the debilitating side effects of existing antipsychotics, none of which are approved by the FDA for the treatment of PDP. We hold worldwide commercialization rights to pimavanserin.

Through its unique mechanism and the clinical studies conducted to date, we believe that pimavanserin has the potential to address important unmet medical needs in neurological and psychiatric disorders in addition to PDP. Today we are evaluating pimavanserin for the treatment of the negative symptoms of schizophrenia in a Phase 3 clinical development program. The negative symptoms of schizophrenia have been associated with poor long-term outcomes and disability even when the positive symptoms are well-controlled, and today there are no FDA-approved therapies. In the fourth quarter of 2019 we announced positive results from our pivotal ADVANCE study and in the third quarter of 2020, we initiated a second pivotal study, ADVANCE-2. The Phase 3 program is evaluating the efficacy of pimavanserin in patients with predominantly negative symptoms of schizophrenia who have achieved adequate control of positive symptoms with their existing antipsychotic treatment. We expect that enrollment in ADVANCE-2 will be completed this year and that top-line results will be available in early 2024.

In addition, we recently announced that we are developing an internally discovered new molecule, ACP-204, which builds upon the learnings of pimavanserin in the treatment of neuropsychiatric symptoms, and is currently being evaluated in a Phase 1 clinical program. Upon completion of our Phase 1 work, we plan to initiate studies evaluating various doses of ACP-204 in patients with Alzheimer's disease psychosis (ADP). ACP-204 is a new chemical entity for which we hold the worldwide rights.

In August 2018, we acquired an exclusive North American license to develop and commercialize trofinetide for Rett syndrome and other indications from Neuren Pharmaceuticals Limited (Neuren). Rett syndrome is a debilitating neurological disorder that occurs predominantly in females following apparently normal development for the first six months of life. Typically, between six to eighteen months of age, patients experience a period of rapid decline with loss of purposeful hand use and spoken communication and inability to independently conduct activities of daily living. Symptoms also include seizures, disorganized breathing patterns, scoliosis and sleep disturbances. Currently, there are no approved medicines for the treatment of Rett syndrome. We are currently in registration for trofinetide, an investigational new drug for the treatment of Rett syndrome, a rare genetic neurodevelopmental disorder. If approved, trofinetide would be the first and only drug approved in the United States for this condition. We submitted to the FDA a New Drug Application (NDA) for trofinetide for the treatment of Rett syndrome in July 2022 based on the positive results from our pivotal Phase 3 Lavender™ study which demonstrated statistically significant improvement over placebo for both co-primary endpoints as well as the key secondary endpoint. The FDA filed the NDA in September 2022 and assigned a Prescription Drug User Fee Act (PDUFA) target action date of March 12, 2023.

In January 2022, we entered into a license and collaboration agreement with Stoke Therapeutics, Inc. (Stoke) to discover, develop and commercialize novel RNA-based medicines for the potential treatment of severe and rare genetic neurodevelopmental diseases of the CNS. The collaboration includes SYNGAP1 syndrome, Rett syndrome (MECP2), and an undisclosed neurodevelopmental target. For the SYNGAP1 program, the two companies will jointly share global research, development and commercialization responsibilities and share 50/50 in all worldwide costs and future profits. For the Rett syndrome (MECP2) and the undisclosed neurodevelopmental program, Stoke will lead research and pre-clinical development activities, while we will lead clinical development and commercialization activities.

Corporate Information

We were originally incorporated in Vermont in 1993 as Receptor Technologies, Inc. We reincorporated in Delaware in 1997 and our headquarters are in San Diego, California. We maintain a website at *www.acadia.com*, to which we regularly post copies of our press releases as well as additional information about us. Our filings with the Securities and Exchange Commission (SEC), are available free of charge through our website as soon as reasonably practicable after being electronically filed with or furnished to the SEC. Interested persons can subscribe on our website to email alerts that are sent automatically when we issue press releases, file our reports with the SEC or post certain other information to our website. Information contained in our website does not constitute a part of this report or our other filings with the SEC.

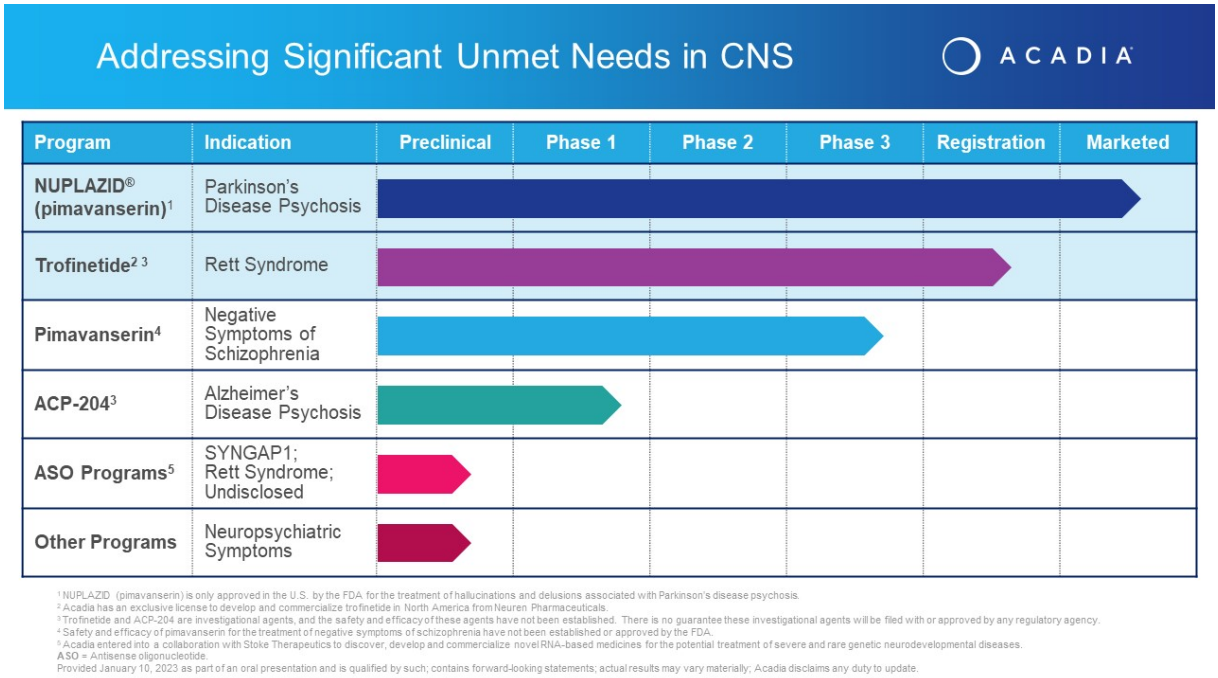
We own or have rights to various trademarks, copyrights and trade names used in our business, including Acadia® and NUPLAZID®. Our logos and trademarks are the property of Acadia Pharmaceuticals Inc. All other brand names or trademarks appearing in this report are the property of their respective holders. Use or display by us of other parties' trademarks, trade dress, or products in this report is not intended to, and does not, imply a relationship with, or endorsement or sponsorship of us, by the trademark or trade dress owners.

Our Strategy

Our strategy is to identify, develop and commercialize innovative therapies that address unmet medical needs in CNS disorders and rare diseases. Key elements of our strategy are to:

- ***Maximize the successful commercialization of NUPLAZID for Parkinson's disease psychosis in the United States.*** NUPLAZID was approved by the FDA in April 2016 for the treatment of hallucinations and delusions associated with PDP. We launched NUPLAZID in the United States in May 2016 and an important objective is to establish NUPLAZID as the standard of care for PDP. We employ U.S. sales specialists that are focused on promoting NUPLAZID to physicians who treat PDP patients, including neurologists, psychiatrists and long-term care physicians. The NUPLAZID franchise has been cash flow positive since 2019, and as such we are focused on maximizing market share, balancing top-line growth with long-term profitability.
- ***Deliver trofinetide to the market for the treatment of patients with Rett syndrome.*** In July 2022, we submitted to the FDA an NDA for trofinetide for the treatment of Rett syndrome. Our PDUFA target action date is March 12, 2023. If approved, trofinetide will be the first FDA-approved treatment for Rett syndrome.
- ***Advance our late-stage opportunity in negative symptoms of schizophrenia.*** We have an ongoing Phase 3 program evaluating pimavanserin for the treatment of negative symptoms of schizophrenia with top-line results expected in early 2024.
- ***Develop our early-stage opportunity in ADP and other potential indications.*** We are currently in Phase 1 development with ACP-204 as a treatment for ADP and plan to complete Phase 1 in the first half of 2023. We plan to initiate studies evaluating various doses of ACP-204 in ADP patients later this year.

Our Pipeline



NUPLAZID (pimavanserin)

Pimavanserin is a new chemical entity that we discovered and that was approved by the FDA in April 2016 for the treatment of hallucinations and delusions associated with PDP. It is the only drug approved in the United States for this condition and is marketed under the tradename NUPLAZID in the United States. NUPLAZID is a selective serotonin inverse agonist/antagonist preferentially targeting the 5-HT_{2A} receptor, a key serotonin receptor that plays an important role in psychosis. Through this novel mechanism, NUPLAZID demonstrated significant efficacy in reducing the hallucinations and delusions associated with PDP without negatively impacting motor function in our Phase 3 pivotal trial. NUPLAZID has the potential to avoid many of the debilitating side effects of existing antipsychotics, none of which are approved by the FDA in the treatment of PDP. We hold worldwide commercialization rights to NUPLAZID for all indications and have established a broad patent portfolio, which includes numerous issued patents in the United States, Europe, and several additional countries. NUPLAZID is available in 34 mg capsule and 10 mg tablet dosage forms.

NUPLAZID as a Treatment for Parkinson's Disease Psychosis

Parkinson's disease is the second most common neurodegenerative disorder after Alzheimer's disease. According to the Parkinson's Disease Foundation, about one million people in the United States and more than 10 million people globally suffer from this disease. Approximately 50% of Parkinson's patients will experience psychosis over the course of their disease. Parkinson's disease is more common in people over 60 years of age and the prevalence of this disease is expected to increase significantly as the population ages.

PDP is a debilitating disorder commonly characterized by visual hallucinations and delusions that afflicts about 40% of the one million Parkinson's disease patients in the United States. The development of psychosis in patients with Parkinson's disease substantially contributes to the burden of Parkinson's disease and deeply affects their quality of life. PDP is associated with a diminished quality of life, nursing home placement, and increased caregiver stress and burden.

As the first and only drug approved by the FDA for the treatment of hallucinations and delusions associated with PDP, NUPLAZID provides an innovative approach to the treatment of PDP without compromising motor control and potentially avoiding many of the debilitating side effects of existing antipsychotics.

In connection with the FDA approval of NUPLAZID, we have agreed to four post-marketing commitments. Three of the four commitments have been fulfilled within the agreed upon timelines. The fourth commitment, which requires a study or studies in predominantly frail and elderly patients, remains ongoing.

Pimavanserin as a Treatment for the Negative Symptoms of Schizophrenia

Schizophrenia is a severe chronic mental illness that involves disturbances in cognition, perception, emotion, and other aspects of behavior. These disturbances may include positive symptoms, such as hallucinations and delusions, and a range of negative symptoms, including loss of interest and emotional withdrawal. Schizophrenia is associated with persistent impairment of a patient's social functioning and productivity. Cognitive disturbances often prevent patients with schizophrenia from readjusting to society. As a result, patients with schizophrenia are normally required to be under medical care for their entire lives. According to the National Institute of Mental Health (NIMH), approximately 1% of the U.S. population suffers from schizophrenia.

Most patients with schizophrenia in the United States today are treated with second-generation, or atypical, antipsychotics, which induce fewer motor disturbances than typical, or first-generation, antipsychotics, but still fail to fully address some of the negative symptoms of schizophrenia for a significant portion of patients. In addition, currently prescribed treatments have either negligible effects on cognitive symptoms of schizophrenia or may even further impair cognitive performance. It is believed that the efficacy of atypical antipsychotics is due to their interactions with dopamine and 5-HT_{2A} receptors. Despite their commercial success, current antipsychotic drugs have substantial limitations, including inadequate efficacy and severe side effects. The side effects associated with these atypical agents may include weight gain, type 2 diabetes, metabolic, sexual and cardiovascular side effects, movement disturbances or sedation.

In November 2016, we announced that we initiated ADVANCE, a Phase 2 study to evaluate pimavanserin for adjunctive treatment in patients with negative symptoms of schizophrenia. Studies show that about 40% to 50% of schizophrenia patients suffer from prominent negative symptoms. While currently available antipsychotic treatments for schizophrenia mainly target positive symptoms, many patients remain functionally impaired because of residual negative and cognitive symptoms that are harder to treat with atypical antipsychotics. The residual negative and cognitive symptoms limit social functioning. There is currently no drug approved by the FDA for the treatment of the negative symptoms of schizophrenia.

ADVANCE was a Phase 2, 26-week, randomized, double-blind, placebo-controlled, multi-center, international study designed to examine the efficacy and safety of pimavanserin in patients with schizophrenia who have predominant negative symptoms while on a stable background antipsychotic therapy. 403 patients were randomized to receive once-daily pimavanserin (n=201) or placebo (n=202) as an adjunct treatment to their ongoing antipsychotic in a flexible dosing regimen. The starting daily dose of 20 mg of pimavanserin at baseline could have been adjusted to 34 mg or 10 mg during the first eight weeks of treatment. 53.8% of patients who were randomized to receive pimavanserin completed the trial on 34 mg, 44.7% on 20 mg, and 1.5% on 10 mg. The primary endpoint of the study was the change from baseline to week 26 on the NSA-16 total score. In November 2019, we announced positive top-line results from the ADVANCE study. In this study, pimavanserin demonstrated a statistically significant improvement on the study's primary endpoint, the change from baseline to week 26 on the Negative Symptom Assessment-16 (NSA-16) total score, compared to placebo (p=0.043). A greater improvement in the NSA-16 total score compared to placebo was observed in patients who received the highest pimavanserin dose of 34 mg (n=107; unadjusted p=0.0065). Pimavanserin did not separate from placebo on the key secondary endpoint, the Personal and Social Performance (PSP) scale. In the third quarter of 2020, we initiated a second pivotal study, ADVANCE-2. The Phase 3 study will evaluate the efficacy of pimavanserin 34 mg once daily compared to placebo in approximately 386 patients with predominantly negative symptoms of schizophrenia who have achieved adequate control of positive symptoms with their existing antipsychotic treatment. We anticipate announcing top-line results from the Phase 3 ADVANCE-2 study in early 2024.

Trofinetide as a Treatment for Rett Syndrome

Trofinetide is a novel synthetic analog of the amino-terminal tripeptide of insulin-like growth factor 1 (IGF-1) designed to treat the core symptoms of Rett syndrome by reducing neuroinflammation and supporting synaptic function. Trofinetide has been granted FDA Fast Track Status and Orphan Drug Designation in the U.S. and Orphan Designation in Europe.

Rett syndrome is a debilitating neurological disorder that occurs primarily in females following apparently normal development for the first six months of life. Rett syndrome has been most often misdiagnosed as autism, cerebral palsy, or non-specific developmental delay. Rett syndrome is caused by mutations on the X chromosome on a gene called MECP2. There are more than 200 different mutations found on the MECP2 gene that interfere with its ability to generate a normal gene product. Rett syndrome occurs worldwide in approximately one of every 10,000 to 15,000 female births causing problems in brain function that are responsible for cognitive, sensory, emotional, motor and autonomic function. Typically, between six to eighteen months of age, patients experience a period of rapid decline with loss of purposeful hand use and spoken communication and inability to independently conduct activities of daily living. Symptoms also include seizures, disorganized breathing patterns, an abnormal side-to-side curvature of the spine (scoliosis) and sleep disturbances. Currently, there are no approved medicines approved for the treatment of Rett syndrome.

In October 2019, we initiated the Phase 3 LAVENDER study, a randomized, double-blind placebo-controlled study evaluating trofinetide in approximately 180 girls and young women 5 to 20 years of age with Rett syndrome. Half of study participants will receive trofinetide and half will receive placebo. Co-primary efficacy endpoints of the study will measure symptom improvement using the Rett Syndrome Behavior Questionnaire (RSBQ), a caregiver assessment, and the Clinical Global Impression Scale-Improvement (CGI-I), a clinician assessment. In December 2021, we announced positive top-line results from the study. The placebo-controlled study demonstrated a statistically significant improvement over placebo for both endpoints. On the RSBQ, change from baseline to week 12 was -5.1 vs. -1.7 (p=0.0175; effect size=0.37). The CGI-I score at week 12 was 3.5 vs. 3.8 (p=0.0030; effect size=0.47). Additionally, trofinetide demonstrated a statistically significant separation over placebo on the key secondary endpoint, the Communication and Symbolic Behavior Scales Developmental Profile™ Infant-Toddler Checklist–Social composite score (CSBS-DP-IT–Social) change from baseline to week 12 was -0.1 vs. -1.1 (p=0.0064; effect size=0.43).

Study treatment discontinuation rates related to treatment emergent adverse events (TEAEs) were 17.2% in the trofinetide group as compared to 2.1% in the placebo group. The most common adverse events were diarrhea (80.6% with trofinetide vs. 19.1% with placebo), of which 97.3% in the trofinetide arm were characterized as mild-to-moderate, and vomiting (26.9% with trofinetide vs. 9.6% with placebo), of which 96% in the trofinetide arm were characterized as mild-to-moderate. Serious adverse events were observed in 3.2% of study participants in both the trofinetide and placebo groups. Patients completing the LAVENDER study had the opportunity to continue to receive trofinetide in the open-label LILAC and LILAC-2 extension studies. More than 95% of participants who completed the LAVENDER study elected to roll-over to the LILAC open-label extension study.

We submitted to the FDA an NDA for trofinetide for the treatment of Rett syndrome in July 2022. The FDA filed the NDA in September 2022 with a PDUFA target action date of March 12, 2023. Trofinetide has been granted Fast Track Status and Orphan Drug Designation for Rett syndrome. Trofinetide has also been granted Rare Pediatric Disease (RPD) designation by the FDA. An NDA with Fast Track and/or Orphan Drug Designation is eligible for priority review. With an RPD designation we would expect to be awarded a RPD Priority Review Voucher if approved, subject to final determination by the FDA.

ACP-204 as a Treatment for Alzheimer's Disease Psychosis

An estimated over 6.0 million people in the United States are living with Alzheimer's disease dementia and studies suggest that approximately 30% of patients, or 1.8 million people, have psychosis, commonly consisting of delusions and hallucinations. Approximately 900 thousand patients in the United States are currently treated for ADP and of those treated, approximately two-thirds are treated with off-label anti-psychotics.

Symptoms of ADP are often persistent and may occur with increasing frequency with progression of disease as patients become more impaired. Serious consequences have been associated with persistent or severe psychosis in persons with dementia such as repeated hospital admissions, earlier progression to nursing home care, severe dementia, and death. There are currently no FDA-approved treatments for ADP. Off-label use of typical and atypical antipsychotics is associated with modest and often equivocal efficacy in these patients. In addition, use of currently available antipsychotics is associated with a significant acceleration in cognitive decline in patients with dementia as well as numerous off-target toxicities, thus negatively impacting the primary illness. The cognitive effects of treatment with an atypical antipsychotic were evaluated in the National Institute of Mental Health Clinical Antipsychotic Trials of Intervention Effectiveness–Alzheimer's Disease (CATIE-AD) study. In this study, patients on any atypical antipsychotic had significantly greater rates of decline in cognitive function compared to patients on placebo. This pronounced negative impact of currently used antipsychotics on cognitive function is believed to be associated with the common pharmacologic property of these drugs, namely blocking of dopamine receptors. Atypical antipsychotics are associated with a number of off-target and dose-limiting side effects, such as

extrapyramidal symptoms, orthostatic hypotension, hematologic abnormalities, and metabolic, gastrointestinal and sedative effects. These off-target toxicities are associated with increased risk for falls, infection, aspiration pneumonia, and other serious complications in this vulnerable patient population. With no approved therapies for the treatment of patients with ADP and current off-label use of atypical antipsychotics carrying significant morbidity risks including worsening in cognitive decline and other off target toxicities, we believe that ADP represents an area of high unmet need.

ACP-204 is a new molecule which is designed to leverage the learnings from pimavanserin. For several years we have sought to build upon our pimavanserin franchise by investigating and developing other molecules focused on the serotonergic system. Virtually all of the antipsychotics on the market today are thought to work predominantly through blocking dopamine and in particular, the dopamine D2 receptor. Pimavanserin is thought to work entirely through serotonin, which we believe can provide a very different and favorable safety and tolerability profile.

Specifically with ACP-204, we believe we may have an opportunity to maximize the efficacy potential, while reducing the risk of QT prolongation. We are currently in Phase 1 development and plan to complete Phase 1 in the first half of 2023. We plan to initiate studies evaluating various doses of ACP-204 in ADP patients later this year.

Antisense Oligonucleotide (ASO) Programs

In January 2022, we entered into a collaboration with Stoke Therapeutics to discover, develop and commercialize novel RNA-based medicines for the potential treatment of severe and rare genetic neurodevelopmental diseases of the CNS. The collaboration includes SYNGAP1, MECP2 (Rett syndrome) and an undisclosed CNS target of mutual interest. The programs are currently in various stages of pre-clinical development.

Competition

We face, and will continue to face, intense competition from pharmaceutical and biotechnology companies, as well as numerous academic and research institutions and governmental agencies, both in the United States and abroad. We compete, or will compete, with existing and new products being developed by our competitors. Some of these competitors are pursuing the development of pharmaceuticals that target the same diseases and conditions that our research and development programs target.

For example, the use of NUPLAZID for the treatment of PDP competes with off-label use of various antipsychotic drugs, including the generic drugs quetiapine, clozapine, risperidone, aripiprazole, and olanzapine.

Pimavanserin for the treatment of negative symptoms of schizophrenia, if approved for that indication, would compete with off-label use of Vraylar, marketed by Allergan, Rexulti, marketed by Otsuka Pharmaceutical Co., Ltd., Latuda, marketed by Sunovion Pharmaceuticals Inc., Caplyta, marketed by IntraCellular Therapeutics and various generic drugs, including quetiapine, clozapine, risperidone, aripiprazole, and olanzapine.

Several academic institutions and pharmaceutical companies are currently conducting clinical trials for the treatment of various symptoms of Rett syndrome. Trofinetide, if approved for the treatment of Rett syndrome, would compete indirectly with off-label usage of branded and generic prescription medications targeted at individual symptoms of Rett syndrome, including antiepileptics, antipsychotics, antidepressants and benzodiazepines.

Other competitors may have a variety of drugs in development or awaiting approval from the FDA or comparable foreign regulatory authorities that could reach the market and become established before we have a product to sell for the applicable disorder. Our competitors may also develop alternative therapies that could further limit the market for any drugs that we may develop. Many of our competitors are using technologies or methods different or similar to ours to identify and validate drug targets and to discover novel small molecule drugs. Many of our competitors and their collaborators have significantly greater experience than we do in the following:

- preclinical studies and clinical trials of potential pharmaceutical products;
- obtaining FDA and other regulatory approvals; and
- commercializing pharmaceutical products.

In addition, many of our competitors and their collaborators have substantially greater advantages in the following areas:

- capital resources;
- research and development resources;
- manufacturing capabilities;
- sales and marketing; and
- production facilities.

Smaller companies also may prove to be significant competitors, particularly through proprietary research discoveries and collaborative arrangements with large pharmaceutical and established biotechnology companies. Many of our competitors have products that have been approved or are in advanced development and may develop superior technologies or methods to identify and validate drug targets and to discover novel small molecule drugs. We face competition from other companies, academic institutions, governmental agencies and other public and private research organizations for collaborative arrangements with pharmaceutical and biotechnology companies, in recruiting and retaining highly qualified scientific, sales and marketing, and management personnel and for licenses to additional technologies. Our competitors, either alone or with their collaborators, may succeed in developing technologies or drugs that are more effective, safer, and more affordable, or more easily administered than ours and may achieve patent protection or commercialize drugs sooner than us. Our competitors may also develop alternative therapies that could further limit the market for any drugs that we may develop. Our failure to compete effectively could have a material adverse effect on our business.

Intellectual Property

We currently hold 47 issued U.S. patents and a significant number of related issued foreign patents. We have also exclusively licensed rights to an additional 28 issued U.S. patents, and a number of related foreign patents. Patents and other proprietary intellectual property rights are an essential element of our business. Our strategy is to file patent applications in the United States and any other country that represents an important potential commercial market to us. In addition, we seek to protect our technology and inventions (and improvements to inventions) that are important to the development of our business. Our patent applications claim proprietary technology, including chemical synthetic or manufacturing methods, drug assays, novel compounds, compositions, formulations and methods of treatment. We also rely upon trade secrets, including technologies that may be used to discover and validate targets, to identify and develop novel drugs, as well as manufacturing or clinical development technologies, among others. We protect our trade secrets by, among other things, requiring employees and third parties who have access to our proprietary information to sign confidentiality and nondisclosure agreements. We are a party to various license agreements that give us rights to use certain technologies in our research and development, subject to certain limitations.

Pimavanserin

To date, 36 U.S. patents have been issued to us that relate to pimavanserin, NUPLAZID and methods of use. Fourteen of these are Orange Book-listed patents that relate to pimavanserin, NUPLAZID and our approved indication, and cover the general formula of the compound, the composition of matter, with claims specifically directed to pimavanserin and salts thereof, the specific polymorph form of pimavanserin, the approved formulations, and the use thereof for treating our approved indication. The composition of matter patent covering pimavanserin and salts thereof currently has an expiration date in 2030, including a patent term extension approved by the U.S. Patent and Trademark Office. The patents covering the polymorph form and the use of pimavanserin or NUPLAZID for our approved indication are currently set to expire between 2024 and 2028. These patent terms include adjustments made by the U.S. Patent and Trademark Office, but not extensions.

In the United States, under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly known as “Hatch-Waxman,” we are permitted to extend the term of one U.S. patent for pimavanserin or the use thereof. Patent terms may be subject to change not only due to potential patent term extensions but also to any terminal disclaimer that reduces patent term, as well as other factors. Because the U.S. patent laws and judicial interpretations thereof change, modifications or new interpretations of the laws may impact our patent terms.

The remaining 22 U.S. patents relating to pimavanserin that have been issued to us cover methods of use of pimavanserin for, among other things, treating AD Psychosis, Alzheimer's disease indications, schizophrenia, bipolar disorder, Lewy body dementia, sleep disorders, hallucinations and delusions, other indications and methods of producing pimavanserin. We also have a significant number of related issued foreign patents that specifically cover pimavanserin and polymorphs thereof in Europe and Asia as well as in Australia, Canada, Mexico and other countries.

We continue to file and prosecute patent applications directed to pimavanserin, formulations of pimavanserin, methods of manufacturing, and to methods of treating various diseases using pimavanserin, either alone or in combination with other agents, worldwide. For example, in late 2019 and in 2020, we obtained and listed in the Orange Book six additional U.S. issued patents, two patents directed to method of use for our 10 mg tablet, expiring in 2037, and four patents directed to our 34 mg capsule formulation, each expiring in 2038.

Trofinetide

To date, 10 U.S. patents have been issued and exclusively licensed to us from Neuren Pharmaceuticals that relate to trofinetide, methods of manufacturing and methods of use of trofinetide. Several U.S. patents would be eligible for Orange Book listing, including a patent claiming the use of trofinetide for treating Rett syndrome. The use patent for treating Rett syndrome has an expiration date in 2032.

Under the license agreement with Neuren, we continue to file and prosecute patent applications directed to trofinetide, formulations of trofinetide, methods of manufacturing and methods of treating Rett syndrome using trofinetide.

Government Regulation

Our business activities, including the manufacturing and marketing of NUPLAZID, trofinetide, if approved, and our potential products and our ongoing research and development activities, are subject to extensive regulation by numerous governmental authorities in the United States and other countries. Before marketing in the United States, any new drug developed by us must undergo rigorous preclinical testing, clinical trials and an extensive regulatory clearance process implemented by the FDA under the Federal Food, Drug, and Cosmetic Act, as amended. The FDA regulates, among other things, the development, testing, manufacture, safety, efficacy, record keeping, labeling, storage, approval, advertising, promotion, import, export, sale and distribution of biopharmaceutical products. The regulatory review and approval process, which includes preclinical testing and clinical trials of each product candidate, is lengthy, expensive and uncertain. Moreover, government coverage and reimbursement policies will both directly and indirectly impact our ability to successfully commercialize NUPLAZID and any future approved products, and such coverage and reimbursement policies will be impacted by enacted and any applicable future healthcare reform and drug pricing measures. In addition, we are subject to state and federal laws, including, among others, anti-kickback laws, false claims laws, data privacy and security laws, and transparency laws that restrict certain business practices in the pharmaceutical industry.

In the United States, drug product candidates intended for human use undergo laboratory and animal testing until adequate proof of safety is established. Clinical trials for new product candidates are then typically conducted in humans in three sequential phases that may overlap. Phase 1 trials involve the initial introduction of the product candidate into healthy human volunteers. The emphasis of Phase 1 trials is on testing for safety or adverse effects, dosage, tolerance, metabolism, distribution, excretion and clinical pharmacology. Phase 2 involves studies in a limited patient population to determine the initial efficacy of the compound for specific targeted indications, to determine dosage tolerance and optimal dosage, and to identify possible adverse side effects and safety risks. Once a compound shows initial evidence of effectiveness and is found to have an acceptable safety profile in Phase 2 evaluations, Phase 3 trials are undertaken to more fully evaluate clinical outcomes. Before commencing clinical investigations in humans, we or our collaborators must submit an Investigational New Drug Application (IND), to the FDA.

Regulatory authorities, Institutional Review Boards and Data Monitoring Committees may require additional data before allowing the clinical studies to commence, continue or proceed from one phase to another, and could demand that the studies be discontinued or suspended at any time if there are significant safety issues. Clinical testing must also meet requirements for clinical trial registration, institutional review board oversight, informed consent, health information privacy, and good clinical practices (GCPs). Additionally, the manufacture of our drug product must be done in accordance with current good manufacturing practices (GMPs).

To establish a new product candidate's safety and efficacy, the FDA requires companies seeking approval to market a drug product to submit extensive preclinical and clinical data, along with other information, for each indication for which the product will be labeled. The data and information are submitted to the FDA in the form of a New Drug Application (NDA), which must be accompanied by payment of a significant user fee unless a waiver or exemption applies. Generating the required data and information for an NDA takes many years and requires the expenditure of substantial resources. Information generated in this process is susceptible to varying interpretations that could delay, limit or prevent regulatory approval at any stage of the process. The failure to demonstrate adequately the quality, safety and efficacy of a product candidate under development would delay or prevent regulatory approval of the product candidate. Under applicable laws and FDA regulations, each NDA submitted for FDA approval is given an internal administrative review within 60 days following submission of the NDA. If deemed sufficiently complete to permit a substantive review, the FDA will "file" the NDA. The FDA can refuse to file any NDA that it deems incomplete or not properly reviewable. The FDA has established internal goals of eight months from submission for priority review of NDAs that cover new product candidates that offer major advances in treatment or provide a treatment where no adequate therapy exists, and 12 months from submission for the standard review of NDAs. However, the FDA is not legally required to complete its review within these periods, these performance goals may change over time and the review is often extended by FDA requests for additional information or clarification. Moreover, the outcome of the review, even if generally favorable, may not be an actual approval but a "complete response letter" that describes additional work that must be done before the NDA can be approved. Before approving an NDA, the FDA can choose to inspect the facilities at which the product is manufactured and will not approve the product unless the manufacturing facility complies with GMPs. The FDA may also audit sites at which clinical trials have been conducted to determine compliance with GCPs and data integrity. The FDA's review of an NDA may also involve review and recommendations by an independent FDA advisory committee, particularly for novel indications. The FDA is not bound by the recommendation of an advisory committee.

In addition, delays or rejections may be encountered based upon changes in regulatory policy, regulations or statutes governing product approval during the period of product development and regulatory agency review.

Before receiving FDA approval to market a potential product, we or our collaborators must demonstrate through adequate and well-controlled clinical studies that the potential product is safe and effective in the patient population that will be treated. In addition, under the Pediatric Research Equity Act (PREA), an NDA or supplement to an NDA must contain data or a plan to collect such data to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective, unless a waiver applies. If regulatory approval of a potential product is granted, this approval will be limited to those disease states and conditions for which the product is approved. Marketing or promoting a drug for an unapproved indication is generally prohibited. Furthermore, FDA approval may entail ongoing requirements for risk management, including post-marketing, or Phase 4, studies. Even if approval is obtained, each marketed product, is subject to payment of a significant annual program user fee and continuing review and periodic inspections by the FDA. Discovery of previously unknown problems with a product, manufacturer or facility may result in restrictions on the product or manufacturer, including labeling changes, warning letters, costly recalls or withdrawal of the product from the market.

Any drug is likely to produce some toxicities or undesirable side effects in animals and in humans when administered at sufficiently high doses and/or for sufficiently long periods of time. Unacceptable toxicities or side effects may occur at any dose level at any time in the course of studies in animals designed to identify unacceptable effects of a product candidate, known as toxicological studies, or during clinical trials of our potential products. The appearance of any unacceptable toxicity or side effect could cause us or regulatory authorities to interrupt, limit, delay or abort the development of any of our product candidates. Further, such unacceptable toxicity or side effects could ultimately prevent a potential product's approval by the FDA or foreign regulatory authorities for any or all targeted indications or limit any labeling claims and market acceptance, even if the product is approved.

In addition, as a condition of approval, the FDA may require an applicant to develop a risk evaluation and mitigation strategy (REMS). A REMS uses risk minimization strategies beyond the professional labeling to ensure that the benefits of the product outweigh the potential risks. To determine whether a REMS is needed, the FDA will consider the size of the population likely to use the product, seriousness of the disease, expected benefit of the product, expected duration of treatment, seriousness of known or potential adverse events, and whether the product is a new molecular entity. REMS can include medication guides, physician communication plans for healthcare professionals, and elements to assure safe use (ETASU). ETASU may include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patient registries. The FDA may require a REMS before approval or post-approval if it becomes aware of a serious risk associated with use of the product. The requirement for a REMS can materially affect the potential market and profitability of a product.

We and our collaborators and contract manufacturers also are required to comply with the applicable FDA GMP regulations. GMP regulations include requirements relating to quality control and quality assurance as well as the corresponding maintenance of records and documentation. Manufacturing facilities are subject to inspection by the FDA. These facilities must be approved before we can use them in commercial manufacturing of our potential products and must maintain ongoing compliance for commercial product manufacture. The FDA may conclude that we or our collaborators or contract manufacturers are not in compliance with applicable GMP requirements and other FDA regulatory requirements, which may result in delay or failure to approve applications, warning letters, product recalls and/or imposition of fines or penalties.

If a product is approved, we must also comply with post-marketing requirements, including, but not limited to, compliance with advertising and promotion laws enforced by various government agencies, including the FDA's Office of Prescription Drug Promotion, and through such laws as federal and state anti-fraud and abuse laws, including anti-kickback and false claims laws, healthcare information privacy and security laws, post-marketing safety surveillance, and disclosure of payments or other transfers of value to healthcare professionals and entities. In addition, we are subject to other federal and state regulation including, for example, the implementation of corporate compliance programs.

In order to distribute products commercially, we must comply with state laws that require the registration of manufacturers and wholesale distributors of pharmaceutical products in a state, including, in certain states, manufacturers and distributors who ship products into the state even if such manufacturers or distributors have no place of business within the state. Some states also impose requirements on manufacturers and distributors to establish the pedigree of product in the chain of distribution, including some states that require manufacturers and others to adopt new technology capable of tracking and tracing product as it moves through the distribution chain.

Outside of the United States, our ability to market a product is contingent upon receiving a marketing authorization from the appropriate regulatory authorities. The requirements governing the conduct of clinical trials, marketing authorization, pricing and reimbursement vary widely from country to country. If the regulatory authority is satisfied that adequate evidence of safety, quality and efficacy has been presented, marketing authorization will be granted. This foreign regulatory approval process involves all of the risks associated with FDA marketing approval discussed above. In addition, foreign regulations may include applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws, and implementation of corporate compliance programs and reporting of payments or other transfers of value to healthcare professionals and entities.

Coverage and Reimbursement

Sales of NUPLAZID and of trofinetide or our other product candidates, if approved, depend and will depend, in part, on the extent to which such products will be covered by third-party payors, such as government health care programs, commercial insurance and managed healthcare organizations. These third-party payors are increasingly limiting coverage and/or reducing reimbursements for medical products and services. A third-party payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a drug product does not ensure that other payors will also provide coverage for the drug product. Coverage policies and third-party payor reimbursement rates may change at any time. In addition, the U.S. government, state legislatures and foreign governments have continued implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit our net revenue and results. Decreases in third-party payor reimbursement or a decision by a third-party payor to not cover NUPLAZID, trofinetide, if approved, or any other future approved products could reduce physician usage of our products, and have a material adverse effect on our sales, results of operations and financial condition.

In the United States, the Medicare Part D program provides a voluntary outpatient drug benefit to Medicare beneficiaries for certain products. NUPLAZID is available for coverage under Medicare Part D, but the individual Part D plans offer coverage subject to various factors such as those described above. In addition, while Medicare Part D plans have historically included "all or substantially all" drugs in the following designated classes of "clinical concern" on their formularies: anticonvulsants, antidepressants, antineoplastics, antipsychotics, antiretrovirals, and immunosuppressants, the Centers for Medicare & Medicaid Services (CMS), has in the past proposed, but not adopted, changes to this policy. If this policy is changed in the future and if CMS no longer considers the antipsychotic class to be of "clinical concern", Medicare Part D plans would have significantly more discretion to reduce the number of products covered in that class, including coverage of NUPLAZID. Furthermore, private third-party payors often follow Medicare coverage policies and payment limitations in setting their own coverage policies.

Healthcare Laws and Regulations

We are subject to healthcare regulation and enforcement by the federal government and the states and foreign governments in which we conduct our business. The healthcare laws and regulations that may affect our ability to operate include the following:

- The federal Anti-Kickback Statute makes it illegal for any person or entity to knowingly and willfully, directly or indirectly, solicit, receive, offer, or pay any remuneration that is in exchange for or to induce the referral of business, including the purchase, order, lease of any good, facility, item or service for which payment may be made under a federal healthcare program, such as Medicare or Medicaid. The term "remuneration" has been broadly interpreted to include anything of value.
- Federal false claims and false statement laws, including the federal civil False Claims Act, and civil monetary penalties laws, prohibit, among other things, any person or entity from knowingly presenting, or causing to be presented, for payment to, or approval by, federal programs, including Medicare and Medicaid, claims for items or services, including drugs, that are false or fraudulent.
- The U.S. federal Health Insurance Portability and Accountability Act of 1996 (HIPAA), created additional federal criminal statutes that prohibit among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors or making any false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services.
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH), and their implementing regulations, imposes obligations on covered entities, including certain healthcare providers, health plans, and healthcare clearinghouses, and their respective business associates that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity as well as their covered subcontractors, with respect to safeguarding the privacy, security and transmission of individually identifiable health information. In addition, the European Union (EU) and United Kingdom (UK) have each established their own data security and privacy legal framework, including but not limited to the EU's General Data Protection Regulation (EU) 2016/79 and the so-called "UK GDPR" (together, the GDPR), which contain provisions specifically directed at the processing of health information, higher sanctions than previously applicable data protection laws and extra-territoriality measures intended to bring non-EU/-UK companies' processing operations under the scope of these regulations in certain circumstances (including where the relevant processing relates to the monitoring of behaviors of individuals in the EU/UK – such as in the context of the conduct of a clinical trial). We currently conduct clinical trials in the EU and the UK and will need to be compliant with these requirements. We anticipate that over time we may expand our business operations to include additional operations in the EU and/or UK. With such expansion, we would be subject to increased governmental regulation in the territories in which we might operate, including the GDPR.
- The federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to CMS information related to payments or other transfers of value made to physicians (as defined to include doctors of medicine, dentists, optometrists, podiatrists and chiropractors by such law), other healthcare professionals (such as physician assistants and nurse practitioners), and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members.

Also, many states have similar laws and regulations, such as anti-kickback and false claims laws that may be broader in scope and may apply regardless of payor, in addition to items and services reimbursed under Medicaid and other state programs. Additionally, we may be subject to state laws that require pharmaceutical companies to comply with the federal government's and/or pharmaceutical industry's voluntary compliance guidelines, state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures, state laws that require drug manufacturers to report information on the pricing of certain drugs, state and local laws that require the registration of pharmaceutical sales representatives, as well as state and foreign laws governing the privacy and security of health information, many of which differ from each other in significant ways and often are not preempted by HIPAA.

If we are found to be in violation of any of these laws or any other federal or state regulations, we may be subject to significant administrative, civil and/or criminal penalties, damages, fines, disgorgement, imprisonment, exclusion from federal health care programs, additional reporting requirements and/or oversight, and the curtailment or restructuring of our operations.

Additionally, to the extent that our product is sold in a foreign country, we may be subject to similar foreign laws.

Healthcare Reform

The United States and some foreign jurisdictions are considering or have enacted a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. By way of example, in March 2010, Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the ACA) was signed into law, which intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add transparency requirements for the healthcare and health insurance industries, impose taxes and fees on the health industry and impose additional health policy reforms.

Among the provisions of the ACA of importance to NUPLAZID, trofinetide and our other product candidates are:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13.0% of the average manufacturer price for branded and generic drugs, respectively;
- extension of a manufacturer's Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;
- a Medicare Part D coverage gap discount program, in which manufacturers must now agree to offer 70% point-of-sale discounts to negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for a manufacturer's outpatient drugs to be covered under Medicare Part D;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;
- a requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

There have been executive, judicial and Congressional challenges to certain aspects of the ACA. For example, on June 17, 2021 the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Thus, the ACA will remain in effect in its current form. Prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the ACA marketplace. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. On August 16, 2022, President Biden signed the Inflation Reduction Act of 2022 (IRA) into law, which among other things, extends enhanced subsidies for individuals purchasing health insurance coverage in ACA marketplaces through plan year 2025. The IRA also eliminates the "donut hole" under the Medicare Part D program beginning in 2025 by significantly lowering the beneficiary maximum out-of-pocket cost and creating a new manufacturer discount program. It is possible that the ACA will be subject to judicial or Congressional challenges in the future. It is unclear how such challenges and the healthcare reform measures of the Biden administration will impact the ACA.

Other legislative changes have been proposed and adopted in the United States since the ACA. Through the process created by the Budget Control Act of 2011, there are automatic reductions of Medicare payments to providers up to 2% per fiscal year, which went into effect in April 2013 and, due to subsequent legislative amendments, including the Infrastructure

Investment and Jobs Act, will remain in effect through 2031 unless additional Congressional action is taken. However, coronavirus disease 2019 (COVID-19) relief support legislation suspended the 2% Medicare sequester from May 1, 2020 through March 31, 2022. Under current legislation the actual reduction in Medicare payments will vary from 1% in 2022 to up to 4% in the final fiscal year of this sequester. Additionally, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminates the statutory Medicaid drug rebate cap, currently set at 100% of a drug's average manufacturer price, for single source and innovator multiple source drugs, beginning January 1, 2024. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to certain providers.

Moreover, recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their commercial products. There have been several recent U.S. Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the cost of drugs under Medicare, and reform government program reimbursement methodologies for drugs. For example, in July 2021, the Biden administration released an executive order, "Promoting Competition in the American Economy," with multiple provisions aimed at prescription drugs. In response to Biden's executive order, on September 9, 2021, the U.S. Department of Health and Human Services (HHS) released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue as well as potential administrative actions HHS can take to advance these principles. In addition, the IRA, among other things, (1) directs HHS to negotiate the price of certain single-source drugs and biologics covered under Medicare and (2) imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation. These provisions will take effect progressively starting in fiscal year 2023, although they may be subject to legal challenges. It is currently unclear how the IRA will be implemented but is likely to have a significant impact on the pharmaceutical industry. Further, the Biden administration released an additional executive order on October 14, 2022, directing HHS to submit a report on how the Center for Medicare and Medicaid Innovation can be further leveraged to test new models for lowering drug costs for Medicare and Medicaid beneficiaries. However, it is unclear whether this executive order or similar policy initiatives will be implemented in the future. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

We expect that healthcare reform measures that may be adopted in the future may result in more rigorous coverage criteria and lower reimbursement, and additional downward pressure on the price that we receive for NUPLAZID and any future approved products. Further, it is possible that additional governmental action will be taken in response to the COVID-19 pandemic. We cannot predict what healthcare reform initiatives may be adopted in the future.

Manufacturing and Distribution

We currently outsource, and plan to continue to outsource, manufacturing activities for NUPLAZID, as well as for trofinetide and our other existing and future product candidates for development and commercial purposes. We believe this manufacturing strategy will enable us to direct our financial resources to our commercial activities and to the ongoing development of pimavanserin without devoting the substantial resources and capital required to build manufacturing facilities.

We licensed worldwide intellectual property rights related to pimavanserin in certain indications to Acadia Pharmaceuticals GmbH, our wholly-owned Swiss subsidiary (Acadia GmbH). Our active pharmaceutical ingredient (API) has been manufactured in Switzerland for over 10 years and we anticipate continuing to manufacture in Switzerland. Acadia GmbH manages the worldwide supply chain of our pimavanserin API, and maintains sufficient materials to manufacture our API beyond our one-year production plan.

Acadia GmbH has contracted with Siegfried AG (Siegfried), to manufacture our API to be used in NUPLAZID for commercial sale. Under the manufacturing agreement, Acadia GmbH has agreed to purchase from Siegfried specified percentages of our commercial requirements of API for the United States and Europe. The parties may also agree in the future on additional services under the manufacturing agreement with respect to non-commercial supply or development activities. The term of the manufacturing agreement ended in December 2021 and renewed for a two-year term and will automatically renew for subsequent two-year terms unless either party provides timely notice of its intent not to renew, or unless the manufacturing agreement is terminated earlier pursuant to its terms. Either party may terminate the manufacturing agreement prior to expiration upon an uncured material breach by the other party, upon the dissolution or liquidation of the

other party, the commencement of insolvency procedures that are not dismissed within a certain period of time, the appointment of any receiver, trustee or assignee to take possession of the properties of the other party or the cessation of all or substantially all of the other party's business operations, upon certain continuing patent infringement, regulatory litigation or other legal proceedings involving the manufacture of our API, upon a continuing force majeure affecting the other party, or if no services are currently being provided under the manufacturing agreement. Additionally, if the parties agree on development services under the manufacturing agreement, the parties may terminate such services by mutual agreement if reasonable efforts to achieve the goals of such services fail. Acadia GmbH also may terminate any services under the manufacturing agreement for any reason on 90 days' prior notice to Siegfried, subject to the requirements of the manufacturing agreement.

We have contracted with Patheon Pharmaceuticals Inc. (Patheon), to manufacture NUPLAZID 10 mg tablet and 34 mg capsule drug product for commercial use in the United States. We have also contracted with a second contract manufacturing organization to manufacture NUPLAZID 34 mg drug product for commercial use in the United States. Under the manufacturing agreement with Patheon, we have agreed to purchase from Patheon a specified percentage of our commercial requirements of NUPLAZID for the United States. Under the agreement, Patheon will also perform specified validation services. The term of the manufacturing agreement ends in the first quarter of 2023 and will automatically renew for subsequent two-year terms unless either party provides timely notice of its intent not to renew, or unless the manufacturing agreement is terminated early pursuant to its terms. Each party may terminate the manufacturing agreement prior to expiration upon the uncured material breach by the other party, upon the bankruptcy or insolvency of the other party or in the event of a continuing force majeure event affecting the other party. The manufacturing agreement will also terminate if we provide notice to Patheon that we no longer require manufacturing services because NUPLAZID has been discontinued. Additionally, we may terminate the manufacturing agreement, subject to certain limitations, if any regulatory authority takes any action or raises any objection that prevents us from continuing to commercialize NUPLAZID or takes an enforcement action against Patheon's manufacturing site that relates to NUPLAZID or could reasonably be expected to adversely affect Patheon's ability to supply NUPLAZID, if we determine to discontinue commercialization of NUPLAZID for safety or efficacy reasons, or if Patheon uses any debarred person in performing its service obligations under the manufacturing agreement. We also may terminate the manufacturing agreement for any other reason on three years' prior notice to Patheon. Patheon may terminate the manufacturing agreement if we assign the manufacturing agreement or any of our rights under the manufacturing agreement to a Patheon competitor.

We sell NUPLAZID to a limited number of specialty pharmacies (SPs), and specialty distributors (SDs), which we collectively refer to as our customers. SPs subsequently dispense NUPLAZID to patients based on the fulfillment of a prescription and SDs subsequently sell NUPLAZID to government facilities, long-term care pharmacies, and in-patient hospital pharmacies. Four customers, each based in the United States, accounted for approximately 73% of our total revenue for the year ended December 31, 2022. We have retained third-party service providers to perform a variety of functions related to the distribution of NUPLAZID, including warehousing, customer service, order-taking, invoicing, collections, and shipment and returns processing.

We have contracted with manufacturers to produce supplies of trofinetide to support the development program and for commercial sale. Under these agreements, we have the right to purchase API for trofinetide products at specified prices and volumes. The term of the latest to expire agreement will end in 2027 and will automatically renew for subsequent two-year terms unless either party provides timely notice of its intent not to renew. Under the manufacturing agreement with Patheon described above, we also have the right to purchase trofinetide products for commercial use.

Under the manufacturing agreement with Patheon described above, we also have the right to purchase trofinetide products for commercial use.

If any other product candidate is approved by the FDA or other regulatory agencies for commercial sale, we will need to contract with a third party to manufacture such products for commercial sale in the U.S. and/or in such other jurisdictions.

Sales and Marketing

We have U.S. sales specialists that are focused on promoting NUPLAZID to physicians who treat PDP patients, including neurologists, psychiatrists and long-term care physicians. This sales force is supported by an experienced sales leadership team. Our experienced commercial team is comprised of experienced professionals in marketing, key account management, patient access services, commercial operations, and sales force planning and management. In addition, our commercial infrastructure includes capabilities in manufacturing, health outcomes, medical affairs, quality control, and compliance.

We launched NUPLAZID in May 2016, and our focus is to continue to establish NUPLAZID as the standard of care for patients with PDP. In order to help us achieve this goal, we are continuing to increase awareness of NUPLAZID's benefits in PDP with a prescriber and patient education campaign consisting of key opinion leader speaker programs, attendance at medical meetings, digital outreach, multimedia campaigns, and direct-to-patient programs.

In selected markets outside of the United States in which NUPLAZID may be approved, if any, we may choose to commercialize NUPLAZID independently or by establishing one or more strategic alliances.

We have begun expanding our commercial team to support the commercialization of trofinetide.

Long-Lived Assets

Our tangible long-lived assets are comprised of intangible assets and property and equipment. Our property and equipment totaled $6.0 million, $8.0 million, and $9.2 million as of December 31, 2022, 2021 and 2020, respectively. All of our tangible long-lived assets are located in the United States. Our intangible assets, comprised of right-of-use assets and other intangibles acquired, totaled $55.6 million, $58.3 million and $48.4 million as of December 31, 2022, 2021 and 2020, respectively.

Employees and Human Capital

Employees. At December 31, 2022, we had a total of 513 employees, 511 of whom were full-time. We employ physicians, scientists and professionals in research and development, clinical, regulatory, manufacturing, marketing, sales, finance, legal and other functions that are important to our business. We also will continue to use temporary workers in certain instances in order to maximize our employment flexibility in light of our business needs. Additionally, when we think it is in the best interest of our business, we will rely upon external advisers and consultants rather than our employees.

Employee Engagement, Benefits & Development. We believe that our future success is dependent upon our ability to recruit, hire and retain exceptional employees. We provide our employees with competitive cash compensation, opportunities to own equity, and an employee benefit program that promotes well-being, including wellness programs, healthcare, retirement planning and paid vacation time. We also provide employees with opportunities to continue their education and growth, including leadership development and tuition reimbursement. In order to receive feedback from our employees and evaluate our level of employee engagement, we regularly conduct employee surveys.

Diversity, Equity & Inclusion. We value diversity, equity, and inclusion across our workforce, in our communities, and in the work that we do. We will continue to focus on diversity, equity, and inclusion initiatives that support a culture that is centered on belonging while aligning with our shared corporate mission and values.

Item 1A. *Risk Factors.*

You should consider carefully the following information about the risks described below, together with the other information contained in this Annual Report and in our other public filings, in evaluating our business. If any of the following risks actually occurs, our business, financial condition, results of operations, and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock would likely decline.

Risks Related to Our Business

Our prospects are highly dependent on the continued successful commercialization of NUPLAZID. To the extent we cannot maintain or increase sales of NUPLAZID, our business, financial condition and results of operations may be materially adversely affected and the price of our common stock may decline.

NUPLAZID is our only drug that has been approved for sale and it has only been approved for the treatment of hallucinations and delusions associated with PDP, in the U.S. since April 2016. In recent years, we have focused most of our activities and resources on NUPLAZID, because we believe that our prospects are highly dependent on, and the vast majority of the value of our company relates to, our ability to continue the successful commercialization of NUPLAZID in the U.S.

Continued successful commercialization of NUPLAZID is subject to many risks, and there is no guarantee that we will be able to maintain or increase sales of NUPLAZID or to successfully commercialize NUPLAZID for additional approved indications beyond PDP. There are numerous examples of failures to meet high expectations of market potential, including

by pharmaceutical companies with more experience and resources than us. While we have established our commercial team and have hired our U.S. sales force, we may need to further expand and develop the team in order to successfully commercialize NUPLAZID for additional indications. Even if we are successful in developing our commercial team, there are many factors that could negatively impact our sales of NUPLAZID or cause the continued commercialization of NUPLAZID to be unsuccessful, including a number of factors that are outside our control. Because no drug has previously been approved by the FDA for the treatment of hallucinations and delusions associated with PDP, it is especially difficult to estimate NUPLAZID's market potential for its approved indication and potential additional indications, if any. The continued commercial success of NUPLAZID currently depends on the extent to which patients and physicians recognize and diagnose PDP and accept and adopt NUPLAZID as a treatment for hallucinations and delusions associated with PDP, and we do not know whether our or others' estimates in this regard will be accurate. We have changed, and may continue to change, the price of NUPLAZID from time to time. Physicians may not prescribe NUPLAZID and patients may be unwilling to use NUPLAZID if coverage is not provided, coverage changes in the future or reimbursement is inadequate to cover a significant portion of the cost. Additionally, any negative publicity related to NUPLAZID, or negative development for NUPLAZID in our post-marketing commitments, in clinical development in additional indications, or in regulatory processes in other jurisdictions, may adversely impact the commercial results and potential of NUPLAZID. Thus, significant uncertainty remains regarding the commercial potential of NUPLAZID.

If the continued commercialization of NUPLAZID or future sales are less successful than expected or perceived as disappointing, our stock price could decline significantly and the long-term success of the product and our company could be harmed.

Our prospects are also dependent on the success of trofinetide. To the extent regulatory approval of trofinetide is delayed or not granted or, if approved, trofinetide is not commercially successful, our business, financial condition and results of operations may be materially adversely affected and the price of our common stock may decline.

The research, testing, manufacturing, labeling, approval, sale, import, export, marketing, and distribution of pharmaceutical product candidates are subject to extensive regulation by the FDA and other regulatory authorities in the U.S. and other countries. We have focused a significant portion of our activities and resources on the development of trofinetide, and we believe our prospects are also dependent on our ability to obtain regulatory approval for and successfully commercialize trofinetide in the U.S. The regulatory approval and successful commercialization of trofinetide is subject to many risks, including those discussed in other risk factors, and trofinetide may not receive approval from the FDA. If the results or timing of regulatory filings, the regulatory process, regulatory developments, commercialization, or other activities, actions or decisions related to trofinetide do not meet our or others' expectations, the market price of our common stock could decline significantly.

In December 2021, we announced positive results from our pivotal Phase 3 LAVENDER study. The study demonstrated a statistically significant improvement over placebo for both co-primary endpoints as well as key secondary endpoint. We submitted to the FDA an NDA for trofinetide for the treatment of Rett syndrome in July 2022.The FDA accepted the NDA filing in September 2022 with a PDUFA target action date of March 12, 2023.

The FDA retains complete discretion in deciding whether to approve the NDA for trofinetide and there are many components to an NDA filing beyond the efficacy and safety data provided to the FDA. For example, the FDA will review our internal systems and processes, as well as those of our vendors, related to our development of trofinetide, including those pertaining to our clinical trials and manufacturing processes. No assurances can be given that the FDA will approve trofinetide for the treatment of Rett syndrome, or that if approved, we will successfully commercialize trofinetide.

The terms of the FDA's approval of NUPLAZID for the treatment of hallucinations and delusions associated with PDP may limit its commercial potential. Additionally, NUPLAZID is still subject to an ongoing post-marketing commitment.

The scope and terms of the FDA's approval of NUPLAZID may limit our ability to commercialize NUPLAZID and, therefore, our ability to generate substantial sales revenues. The FDA has approved NUPLAZID only for the treatment of hallucinations and delusions associated with PDP. The label for NUPLAZID also contains a "boxed" warning that elderly patients with DRP treated with antipsychotic drugs are at an increased risk of death, and that NUPLAZID is not approved for the treatment of patients with DRP unrelated to the hallucinations and delusions associated with PDP. This "boxed" warning may discourage physicians from prescribing NUPLAZID to patients diagnosed with PDP, including those with dementia.

In connection with the FDA approval, we agreed to four post-marketing commitments (PMCs): (i) a randomized withdrawal trial of pimavanserin 34 mg/day compared to placebo, (ii) a placebo-controlled trial (or trials) of pimavanserin 34

mg/day for eight weeks in at least 500 predominantly frail and elderly subjects, (iii) a drug-drug interaction study to measure the effect of a strong CYP3A4 inducer on the exposure to pimavanserin, and (iv) re-analysis of tissue samples from certain previously conducted preclinical studies. We have fulfilled three PMCs; the PMC covering a trial (or trials) in frail and elderly subjects is in process and expected to be completed in accordance with the timeline agreed with the FDA. Failure to complete the remaining PMC may result in regulatory action by the FDA. The results of any post-marketing study may cause the FDA to update the label and/or cause the FDA to request additional studies or require risk mitigation plans.

The manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion and recordkeeping for NUPLAZID will also continue to be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMPs, good clinical practices, international council for harmonization guidelines and good laboratory practices, each of which are regulations and guidelines enforced by the FDA for all of our nonclinical and clinical development and for any clinical trials that we conduct post-approval.

Discovery of any issues post-approval, including any safety concerns, such as unexpected side effects or drug-drug interaction problems, adverse events of unanticipated severity or frequency, or concerns over misuse or abuse of the product, problems with the facilities where the product is manufactured, packaged or distributed, or failure to comply with regulatory requirements, may result in, among other things, restrictions on NUPLAZID or on us, including:

- withdrawal of approval, addition of warnings or narrowing of the approved indication in the product label;
- requirement of a Risk Evaluation and Mitigation Strategy to mitigate the risk of off-label use in populations where the FDA may believe that the potential risks of use may outweigh its benefits;
- voluntary or mandatory recalls;
- warning letters;
- suspension of any ongoing clinical studies;
- refusal by the FDA or other regulatory authorities to approve pending applications or supplements to approved applications filed by us, or suspension or revocation of product approvals;
- restrictions on operations, including restrictions on the marketing or manufacturing of the product or the imposition of costly new manufacturing requirements; or
- seizure or detention, or refusal to permit the import or export of products.

If any of these actions were to occur, we may have to discontinue the commercialization of NUPLAZID, limit our sales and marketing efforts, conduct further post-approval studies, and/or discontinue or change any other ongoing or planned clinical studies, which in turn could result in significant expense and delay or limit our ability to generate sales revenues.

NUPLAZID has only been studied in a limited number of patients and in limited populations. As we continue to commercialize NUPLAZID, it is becoming available to a much larger number of patients and in broader populations, and we do not know whether the results of NUPLAZID use in such larger number of patients and broader populations will be consistent with the results from our clinical studies.

Prior to commencing our commercial launch of NUPLAZID in May 2016, NUPLAZID was administered only to a limited number of patients and in limited populations in clinical studies, including our successful pivotal -020 Phase 3 trial with NUPLAZID for the treatment of PDP. We do not know whether the results, when broader populations are exposed to NUPLAZID, including results related to safety and efficacy, will be consistent with the results from the clinical studies of NUPLAZID that served as the basis for its approval. For instance, we have an ongoing post-marketing commitment to the FDA to conduct a study or studies in predominantly frail and elderly patients. New data relating to NUPLAZID, including from adverse event reports and post-marketing studies in the U.S. (including our ongoing post-marketing commitment), and from other ongoing clinical studies, may result in changes to the product label and may adversely affect sales, or result in withdrawal of NUPLAZID from the market. The FDA and regulatory authorities in other jurisdictions may also consider the new data in reviewing NUPLAZID marketing applications for indications other than in PDP and/or in other jurisdictions, or impose additional post-approval requirements. If any of these actions were to occur, it could result in significant expense and delay or limit our ability to generate sales revenues.

We have historically relied on a limited internal commercial team and a limited network of third-party distributors and pharmacies to market and sell NUPLAZID, our only commercial product. If this approach ceases to be effective, our commercialization of NUPLAZID may be adversely affected, and NUPLAZID may not be profitable.

NUPLAZID is our only drug that has been approved for sale by any regulatory body, and it became available for prescription in the U.S. in May 2016. We employ our own internal specialty sales force to commercialize NUPLAZID for the treatment of PDP as part of our commercialization strategy in the U.S. If we receive marketing approval for pimavanserin in any other indication, we will need to increase our U.S. sales force significantly, and expand our commercial, medical affairs and general and administrative support functions to support commercialization for that indication. We will be competing with other pharmaceutical and biotechnology companies to recruit, hire, train and retain such personnel. These efforts will be expensive and time consuming, and we cannot be certain that we will be able to successfully expand, refine and further develop our sales force and related functional teams.

Additionally, our strategy in the U.S. includes distributing NUPLAZID solely through a limited network of third-party specialty distributors and specialty pharmacies. While we have entered into agreements with each of these distributors and pharmacies to distribute NUPLAZID in the U.S., they may not perform as agreed or they may terminate their agreements with us. Also, we may need to enter into agreements with additional distributors or pharmacies, and there is no guarantee that we will be able to do so on commercially reasonable terms or at all. In the event we are unable to maintain, or expand, if needed, our commercial team, including our U.S. sales force, or maintain and, if needed, expand, our network of third-party specialty distributors and specialty pharmacies, our ability to continue commercializing NUPLAZID would be limited, and NUPLAZID may not be profitable.

If we do not obtain regulatory approval of pimavanserin for other indications in addition to treatment of PDP in the U.S., we will not be able to market pimavanserin for other indications in the U.S., which will limit our commercial revenues.

While pimavanserin has been approved in the U.S. by the FDA for the treatment of hallucinations and delusions associated with PDP, it has not been approved by the FDA for any other indications, and it has not been approved in any other jurisdiction for this indication or for any other indication. In order to market pimavanserin for other indications or in other jurisdictions, we must obtain regulatory approval for each of those indications and in each of the applicable jurisdictions, and we may never be able to obtain such approval. Approval of NUPLAZID by the FDA for the treatment of hallucinations and delusions associated with PDP does not ensure that NUPLAZID will be approved by the FDA for any other indication. For example, following the successful completion of our Phase 3 HARMONY study, we submitted an sNDA to the FDA for the treatment of DRP on June 3, 2020. On April 2, 2021, we received a CRL from the FDA, indicating that the FDA had completed its review of the application and determined that it could not be approved in its present form. In February 2022, we resubmitted the aforementioned sNDA refining the proposed indication to treatment of hallucinations and delusions associated with ADP. On August 4, 2022 we received a CRL from the FDA regarding our ADP sNDA resubmission. At this time, we are not planning to conduct any additional studies for pimavanserin in ADP.

We initiated a Phase 3 program for pimavanserin as an adjunctive treatment for major depressive disorder (MDD) in April 2019. In July 2020, we announced that our Phase 3 CLARITY study, which combined two identical, double-blind, placebo-controlled studies, did not achieve statistical significance on the primary endpoint. As a result, at this time we do not plan on initiating any additional Phase 3 studies to evaluate pimavanserin for adjunctive use with selective serotonin reuptake inhibitor (SSRI)/ serotonin-norepinephrine reuptake inhibitor (SNRI) drugs for the treatment of MDD.

We initiated the Phase 3 ADVANCE-2 study of pimavanserin for the treatment of the negative symptoms of schizophrenia in August 2020. We project completing the enrollment this year with top-line results in the first half of 2024. There is no guarantee that our ongoing study will be successful, or that the FDA or any regulatory authority in foreign jurisdictions will approve pimavanserin for that indication.

The research, testing, manufacturing, labeling, approval, sale, import, export, marketing, and distribution of pharmaceutical product candidates are subject to extensive regulation by the FDA and other regulatory authorities in the U.S. and other countries, whose regulations differ from country to country. We will be required to comply with different regulations and policies of the jurisdictions where we seek approval for our product candidates, and we have not yet identified all of the requirements that we will need to satisfy to submit NUPLAZID for approval for other indications or in other jurisdictions. This will require additional time, expertise and expense, including the potential need to conduct additional studies or development work for other jurisdictions beyond the work that we have conducted to support our NDA submission in PDP. If we do not receive marketing approval for NUPLAZID for any other indication, we will never be able to

commercialize NUPLAZID for any other indication in the U.S. Even if we do receive additional regulatory approvals, we may not be successful in commercializing those opportunities.

If the results or timing of regulatory filings, the regulatory process, regulatory developments, clinical trials or preclinical studies, or other activities, actions or decisions related to NUPLAZID do not meet our or others' expectations, the market price of our common stock could decline significantly and the long-term success of the product and our company could be harmed.

If we are unable to effectively train and equip our sales force, our ability to successfully commercialize NUPLAZID and trofinetide, if approved, will be harmed.

NUPLAZID is the first drug approved by the FDA for the treatment of hallucinations and delusions associated with PDP, and the FDA filed our NDA for trofinetide for the treatment of Rett syndrome in September 2022. As a result, we are and will continue to be required to expend significant time and resources to train our sales force to be credible, persuasive, and compliant with applicable laws in marketing NUPLAZID for the treatment of hallucinations and delusions associated with PDP and trofinetide, if approved, for the treatment of Rett syndrome to neurologists, psychiatrists, pharmacists, physicians in long-term care facilities and other healthcare providers, as appropriate. In addition, we must ensure that consistent and appropriate messages about NUPLAZID and trofinetide, if approved, are being delivered to our potential customers by our sales force. If we are unable to effectively train our sales force and equip them with current, effective materials, including medical and sales literature to help them inform and educate potential customers about the benefits of NUPLAZID and trofinetide, if approved, and their proper administration, our efforts to successfully commercialize NUPLAZID and trofinetide, if approved, could be put in jeopardy, which would negatively impact our ability to generate product revenues.

NUPLAZID may not gain maximal acceptance among physicians, patients, and the medical community, thereby limiting our potential to generate revenues.

The degree of market acceptance by physicians, healthcare professionals and third-party payors of NUPLAZID, and any other product for which we obtain regulatory approval, and our profitability and growth, will depend on a number of factors, including:

- the ability to provide acceptable evidence of safety and efficacy;
- the scope of the approved indication(s) for the product;
- the inclusion of any warnings or contraindications in the product label;
- the relative convenience and ease of administration;
- the prevalence and severity of any adverse side effects;
- the availability of alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies, and our ability to increase awareness of our approved products through marketing efforts;
- pricing and cost effectiveness, which may be subject to regulatory control;
- effectiveness of our or our collaborators' sales and marketing strategy;
- publicity concerning us, our products or competing products and treatments; and
- our ability to obtain sufficient third-party insurance coverage or adequate reimbursement levels.

If a product does not provide a treatment regimen that is at least as beneficial as the current standard of care or otherwise does not provide patient benefit, that product will not achieve market acceptance and will not generate sufficient revenues to achieve or maintain profitability.

With respect to NUPLAZID specifically, successful commercialization will depend on whether and to what extent physicians, long-term care facilities and pharmacies, over whom we have no control, determine to utilize NUPLAZID. NUPLAZID is available to treat hallucinations and delusions associated with PDP, an indication for which no other FDA-approved pharmaceutical treatment currently exists. Because of this, it is particularly difficult to estimate NUPLAZID's market potential and how physicians, payors and patients will respond to changes in the price of NUPLAZID. Additionally,

the growth of NUPLAZID net sales was negatively impacted due to the COVID-19 pandemic, and the continuing effects of COVID-19 on NUPLAZID net sales are difficult to assess or predict at this time. Industry sources and analysts have a divergence of estimates for the near- and long-term market potential of NUPLAZID, and a variety of assumptions directly impact the estimates for NUPLAZID's market potential, including assumptions regarding the prevalence of PDP, the rate of diagnosis of PDP, the prevalence and rate of hallucinations and delusions in patients diagnosed with PDP, the rate of physician adoption of NUPLAZID, the potential impact of payor restrictions regarding NUPLAZID, and patient adherence and compliance rates. Small differences in these assumptions can lead to widely divergent estimates of the market potential of NUPLAZID. For example, certain research suggests that patients with Parkinson's disease may be hesitant to report symptoms of PDP to their treating physicians for a variety of reasons, including apprehension about societal stigmas relating to mental illness. Research also suggests that physicians who typically treat patients with Parkinson's disease may not ask about or identify symptoms of PDP. For these reasons, even if PDP occurs in high rates among patients with Parkinson's disease, it may be underdiagnosed. Even if PDP is diagnosed, physicians may not prescribe treatment for hallucinations and delusions associated with PDP, and if they do prescribe treatment, they may prescribe other drugs, even though they are not approved in PDP, instead of NUPLAZID. In addition, even if NUPLAZID is prescribed for the treatment of hallucinations and delusions associated with PDP, issues may arise with respect to patient adherence and compliance rates. If patients do not adhere to the recommended dosing of NUPLAZID, patients and physicians may believe that NUPLAZID is less effective, and as a result they may stop taking it and prescribing it.

The label for NUPLAZID also contains a "boxed" warning that elderly patients with DRP treated with antipsychotic drugs are at an increased risk of death, and that NUPLAZID is not approved for the treatment of patients with DRP unrelated to the hallucinations and delusions associated with PDP. There has also been attention to publicly reported deaths of patients that were prescribed NUPLAZID, and the FDA conducted an evaluation of available information about NUPLAZID. On September 20, 2018 the FDA issued a statement concluding: "The U.S. FDA has completed a review of all post marketing reports of deaths and serious adverse events (SAEs) reported with the use of NUPLAZID. Based on an analysis of all available data, FDA did not identify any new or unexpected safety findings with NUPLAZID, or findings that are inconsistent with the established safety profile currently described in the drug label. After a thorough review, FDA's conclusion remains unchanged that the drug's benefits outweigh its risks for patients with hallucinations and delusions of Parkinson's disease psychosis." Although the FDA did not identify any new or unexpected safety risks, the FDA indicated that some potentially concerning prescribing patterns were observed, such as the concomitant use of other antipsychotic drugs or drugs that can cause QT prolongation, a potential cause of heart rhythm disorder. The FDA reminded healthcare providers to be aware of the risks described in the NUPLAZID prescribing information and that none of the other antipsychotic medications are approved for the treatment of PDP. Regardless, perceptions that NUPLAZID is unsafe, even if unfounded, may discourage physicians from prescribing or patients from taking NUPLAZID.

The commercial success of NUPLAZID depends on acceptance by patients and physicians, and there are a number of factors that could skew our or others' estimates about prescribing behaviors and market adoption. If we fail to gain the acceptance of patients and physicians, or if our estimates are inaccurate, these events could negatively impact our business, results of operations, financial condition and prospects.

Our ability to generate product revenues will be diminished if NUPLAZID's coverage from payors is decreased or if patients have unacceptably high co-pay amounts.

Patients who are prescribed medicine for the treatment of their conditions generally rely on third-party payors, including governmental healthcare programs, such as Medicare and Medicaid, managed care organizations and commercial payors, among others, to reimburse all or part of the costs associated with their prescription drugs. Coverage and adequate reimbursement from third-party payors is critical to product acceptance. Coverage decisions may depend upon clinical and economic standards that disfavor drug products when lower cost therapeutic alternatives are already available or subsequently become available. Even with coverage for NUPLAZID, or other products we may market, the resulting reimbursement payment rates might not be adequate or may require co-payments that patients find unacceptably high. Patients may not use NUPLAZID if coverage is not provided or reimbursement is inadequate to cover a significant portion of its cost.

In addition, the market for NUPLAZID depends significantly on access to third-party payors' drug formularies, or lists of medications for which third-party payors provide coverage and reimbursement. The industry competition to be included in such formularies often leads to downward pricing pressures on pharmaceutical companies. Also, third-party payors may refuse to include a particular branded drug in their formularies or otherwise restrict patient access to a branded drug when a less costly alternative is available, even if not approved for the indication for which NUPLAZID is approved.

Third-party payors, whether governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. The current environment is putting pressure on companies to price products below what they may feel is appropriate. Selling NUPLAZID at less than an optimized price would impact our revenues and could impact our overall success as a company. We have changed, and may continue to change, the price of NUPLAZID from time to time, however, we do not know if the price we have selected, or may select in the future, for NUPLAZID is or will be the optimized price. Additionally, we do not know whether and to what extent third-party payors will react to any possible future changes in the price of NUPLAZID. In the U.S., no uniform policy of coverage and reimbursement for drug products exists among third-party payors. Further, one payor's determination to provide coverage and reimbursement for a product does not ensure that other payors will also provide coverage and reimbursement for the product. Therefore, coverage and reimbursement for NUPLAZID may differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of NUPLAZID to each payor separately, with no assurance that coverage will be obtained. Coverage policies and third-party payor reimbursement rates may change at any time. Therefore, even if favorable coverage and reimbursement status is attained, less favorable coverage policies and reimbursement rates may be implemented in the future. If we are unable to obtain coverage of, and adequate payment levels for, NUPLAZID or any other products we may market to third-party payors, physicians may limit how much or under what circumstances they will prescribe or administer them and patients may decline to purchase them. This in turn could affect our ability to successfully commercialize NUPLAZID, or any other products we may market, and thereby adversely impact our profitability, results of operations, financial condition, and future success.

We are solely responsible for the development and commercialization of pimavanserin.

We have full responsibility for the pimavanserin program throughout the world. We expect our research and development costs for continued development of pimavanserin to be substantial. We are currently undertaking ongoing development work for pimavanserin, including clinical trials of pimavanserin for indications other than in PDP. In the event of approval for additional indications, we would need to add significant resources, and possibly raise additional capital, in order to further commercialize pimavanserin, and to conduct the necessary sales and marketing activities, and to conduct further development activities. Our current strategy is to continue to commercialize NUPLAZID for the treatment of hallucinations and delusions associated with PDP in the U.S. using our specialty sales force focused primarily on neurologists, a small group of psychiatrists, and pharmacists and physicians in long-term care facilities who treat PDP patients. If we are approved to commercialize NUPLAZID in markets outside of the U.S., we may need to establish one or more strategic alliances in the future for that purpose. Without future additional resources or collaboration partners in the U.S. and abroad, we might not be able to realize the full value of NUPLAZID.

Furthermore, even though NUPLAZID is approved for the treatment of hallucinations and delusions associated with PDP, a failure in a subsequent pimavanserin study for another indication, including our ongoing study in schizophrenia, or any additional studies, or a failure in our post-marketing studies could harm our ability to successfully market NUPLAZID for the treatment of hallucinations and delusions associated with PDP or could lead to it being withdrawn from the market. If we are unable to develop pimavanserin for other indications, we may not be able to maximize the potential of the compound and that could have a material adverse effect on our future revenues and our success as a company.

Drug development is a long, expensive and unpredictable process with a high risk of failure.

Preclinical testing and clinical trials are long, expensive and unpredictable processes that can be subject to delays. It may take several years to complete the preclinical testing and clinical development necessary to commercialize a drug, and delays or failure can occur at any stage. Preliminary, initial, top-line or interim results of clinical trials do not necessarily predict final results and such results may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final results. In addition, success in preclinical testing and early clinical trials does not ensure that later clinical trials will be successful. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in advanced clinical trials even after promising results in earlier trials.

Our drug development programs are at various stages of development and the historical rate of failures for product candidates is extremely high. In fact, we had an unsuccessful Phase 3 trial with NUPLAZID in 2009. An unfavorable outcome in any of our ongoing or future development efforts or in the post-marketing studies for NUPLAZID could be a major set-back for the program and for us, generally. In particular, an unfavorable outcome in our NUPLAZID program or in the post-marketing studies may require us to delay, devote additional substantial resources to, reduce the scope of, or eliminate this program and could have a material adverse effect on us and the value of our common stock.

In addition, based on positive top-line results from CLARITY, a Phase 2 study evaluating pimavanserin as an adjunctive treatment for MDD, we initiated our Phase 3 CLARITY program, consisting of two Phase 3 studies, CLARITY-2 and CLARITY-3, evaluating pimavanserin as an adjunctive treatment with SSRI/SNRI drugs for MDD. Despite the positive results observed in the Phase 2 CLARITY study, our Phase 3 CLARITY study, did not achieve statistical significance on the primary endpoint. In July 2019, we announced top-line results from the Phase 3 ENHANCE study evaluating pimavanserin as a treatment in inadequate response schizophrenia. In this study, pimavanserin did not achieve statistical significance on either the primary endpoint or the key secondary endpoint.

Following the successful completion of our Phase 3 HARMONY study, we submitted an sNDA to the FDA for pimavanserin for the treatment of DRP on June 3, 2020. On April 2, 2021, we received a CRL indicating that the FDA had completed its review of the application and determined that it could not be approved in its present form. In February 2022, we resubmitted the aforementioned DRP sNDA with updated labeling for the treatment of hallucinations and delusions associated with ADP to the FDA based on previously submitted studies and new analyses. On August 4, 2022, we received a CRL from the FDA regarding our submission of the sNDA. At this time, we are not planning to conduct any additional studies for pimavanserin for the treatment of hallucinations and delusions associated with ADP.

We are currently conducting several studies, including early stage studies of an internally-developed compound known as ACP-204, which is akin to pimavanserin, and may conduct additional studies in the future.

In connection with clinical trials, we face risks that:

- a product candidate may not prove to be efficacious or safe;
- patients may die or suffer other adverse effects for reasons that may or may not be related to the product candidate being tested;
- the results may not be consistent with positive results of earlier trials; and
- the results may not meet the level of statistical significance required by the FDA or other regulatory agencies.

If we do not successfully complete preclinical and clinical development, we will be unable to market and sell products derived from our product candidates and to generate product revenues. Even if we do successfully complete clinical trials, those results are not necessarily predictive of results of additional trials that may be needed before an NDA may be submitted to the FDA. Of the large number of drugs in development, only a small percentage result in the submission of an NDA to the FDA and even fewer are approved for commercialization.

Delays, suspensions and terminations in our clinical trials could result in increased costs to us and delay our ability to generate product revenues.

The commencement of clinical trials can be delayed for a variety of reasons, including delays in:

- demonstrating sufficient safety and efficacy to obtain regulatory approval to commence a clinical trial;
- reaching agreement on acceptable terms with prospective contract research organizations (CROs) and clinical trial sites;
- manufacturing sufficient quantities of a product candidate;
- obtaining clearance from the FDA to commence clinical trials pursuant to an Investigational New Drug application;
- obtaining approval to conduct clinical trials in countries outside the United States pursuant to evolving regional and local regulations (e.g., EU Clinical Trials Regulation (EU No. 536/2014));
- obtaining institutional review board approval to conduct a clinical trial at a prospective clinical trial site; and
- patient recruitment, which is a function of many factors, including the size of the patient population, the nature of the protocol, the proximity of patients to clinical trial sites, the availability of effective treatments for the relevant disease and the eligibility criteria for the clinical trial.

Once a clinical trial has begun, it may be delayed, suspended or terminated due to a number of factors, including:

- competition for internal and external resources, including clinical sites and study patients, that we may choose to allocate to other programs;
- ongoing discussions with regulatory authorities regarding the scope or design of our clinical trials or requests by them for supplemental information with respect to our clinical trial results;
- imposition of clinical holds by regulatory authorities or institutional review boards;
- failure to conduct clinical trials in accordance with regulatory requirements;
- inability to monitor patients adequately during or after treatment;
- difficulty monitoring multiple study sites;
- patient enrollment, which is a function of many factors, including the size of the patient population, the nature of the protocol, the proximity of patients to clinical trial sites, the availability of effective treatments for the relevant disease and the eligibility criteria for the clinical trial;
- lower than anticipated screening or retention rates of patients in clinical trials;
- serious adverse events or side effects experienced by participants; and
- insufficient supply or deficient quality of product candidates or other materials necessary for the conduct of our clinical trials.

In addition, enrollment and retention of patients in, or the ability to receive results from, clinical trials could be disrupted by geopolitical or macroeconomic developments. For example, as a result of the ongoing conflict between Ukraine and Russia, we experienced temporary delays in accessing historical records of certain clinical trial sites located in Russia. Also, as a result of the COVID-19 pandemic, we temporarily paused enrollment of new patients in our ongoing clinical trials, as well as the commencement of new trials. However, we have re-initiated enrollment in clinical trials on a study-by-study and site-by-site basis. It is possible that future enrollment in these studies, or enrollment in future studies, could be impacted due to the same or similar geopolitical or macroeconomic developments. If patients withdraw from our trials, miss scheduled doses or follow-up visits or otherwise fail to follow trial protocols, or if our trial results are otherwise disrupted or disputed due to such developments, the integrity of data from our trials may be compromised or not accepted by the FDA or other regulatory authorities, which would represent a significant setback for the applicable program.

Many of these factors may also ultimately lead to denial of regulatory approval of a current or potential product candidate. If we experience delays, suspensions or terminations in a clinical trial, the commercial prospects for the related product candidate will be harmed, and our ability to generate product revenues will be delayed.

If we are unable to attract, retain, and motivate key management, research and development, and sales and marketing personnel, our drug development programs, our research and discovery efforts, and our commercialization plans may be delayed and we may be unable to successfully commercialize our products, or develop our product candidates.

Our success depends on our ability to attract, retain, and motivate highly qualified management, scientific, and commercial personnel. In particular, our development programs depend on our ability to attract and retain highly skilled development personnel, especially in the fields of CNS disorders, including neuropsychiatric and related disorders. We are currently hiring, and in the future we expect to need to continue to hire, additional personnel as we expand our research and development efforts for pimavanserin and trofinetide, and commercial activities for NUPLAZID. We face competition for experienced scientists, clinical operations personnel, commercial and other personnel from numerous companies and academic and other research institutions. Competition for qualified personnel is particularly intense in the San Diego, California area. Many of the other biotechnology and pharmaceutical companies with whom we compete for qualified personnel have greater financial and other resources, different risk profiles and longer histories in the industry than we do. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high quality candidates than that which we have to offer. If we are unable to continue to attract and retain high quality personnel, the rate and success at which we can develop and commercialize products and product candidates will be limited. If we are unable to attract and retain the necessary personnel, it will significantly impede our commercialization efforts for NUPLAZID and trofinetide, if approved, and the achievement of our research and development objectives.

All of our employees are “at will” employees, which means that any employee may quit at any time and we may terminate any employee at any time. We do not carry “key person” insurance covering members of senior management.

If we receive approval of NUPLAZID in additional indications, or approval of trofinetide in Rett syndrome, we may need to continue to increase the size of our organization. We may encounter difficulties with managing our growth, which could adversely affect our results of operations.

As of December 31, 2022, we employed approximately 510 employees. Our current infrastructure may be inadequate to support our development and commercialization efforts and expected growth. Future growth will impose significant added responsibilities on members of management, including the need to identify, recruit, and integrate additional employees and retain existing employees, and may take time away from running other aspects of our business, including development and commercialization of our product candidates.

Our future financial performance and our ability to commercialize NUPLAZID and any other product candidates that receive regulatory approval and to compete effectively will depend, in part, on our ability to manage any future growth effectively. In particular, as we commercialize NUPLAZID, we will need to support the training and ongoing activities of our sales force. To that end, we must be able to:

- manage our development efforts effectively;
- integrate additional management, administrative and manufacturing personnel;
- develop our marketing and sales organization; and
- maintain sufficient administrative, accounting and management information systems and controls.

We may not be able to accomplish these tasks or successfully manage our operations and, accordingly, may not achieve our research, development, and commercialization goals. Our failure to accomplish any of these goals could harm our financial results and prospects.

If we fail to develop, acquire or in-license other product candidates or products, our business and prospects would be limited. Even if we obtain rights to other product candidates or products, we will incur a variety of costs and may never realize the anticipated benefits.

A key element of our strategy is to develop, acquire or in-license businesses, technologies, product candidates or products that we believe are a strategic fit with our business. The success of this strategy depends in large part on the combination of our regulatory, development and commercial capabilities and expertise and our ability to identify, select and acquire or in-license clinically-enabled product candidates for the treatment of neurological disorders, or for therapeutic indications that complement or augment our current product candidates, or that otherwise fit into our development or strategic plans on terms that are acceptable to us. Identifying, selecting and acquiring or in-licensing promising product candidates requires substantial technical, financial and human resources expertise, and we have limited experience in identifying acquisition targets, successfully completing proposed acquisitions and integrating any acquired businesses, technologies, services or products into our current infrastructure. Efforts to do so may not result in the actual acquisition or in-license of a particular product candidate, potentially resulting in a diversion of our management’s time and the expenditure of our resources with no resulting benefit. If we are unable to identify, select and acquire or license suitable product candidates from third parties on terms acceptable to us, our business and prospects will be limited. In particular, if we are unable to add additional commercial products to our portfolio, we may not be able to successfully leverage our commercial organization that we have assembled for the marketing and sale of NUPLAZID.

The process of integrating any acquired business, technology, service, or product may result in unforeseen operating difficulties and expenditures and may divert significant management attention from our ongoing business operations. As a result, we will incur a variety of costs in connection with an acquisition and may never realize its anticipated benefits. Moreover, any product candidate we identify, select and acquire or license may require additional, time-consuming development or regulatory efforts prior to commercial sale, including preclinical studies, if applicable, and extensive clinical testing and approval by the FDA and applicable foreign regulatory authorities. All product candidates are prone to the risk of failure that is inherent in pharmaceutical product development, including the possibility that the product candidate will not be shown to be sufficiently safe and/or effective for approval by regulatory authorities. In addition, we cannot assure you that any such products that are approved will be manufactured or produced economically, successfully commercialized or widely accepted in the marketplace or be more effective or desired than other commercially available alternatives.

In addition, if we fail to successfully commercialize and further develop NUPLAZID or other product candidates, there is a greater likelihood that we will fail to successfully develop a pipeline of other product candidates, and our business and prospects would therefore be harmed.

We expect our net losses to continue for the next few years and are unable to predict the extent of future losses or when we will become profitable, if ever.

We have experienced significant net losses since our inception. As of December 31, 2022, we had an accumulated deficit of approximately $2.4 billion. We expect to incur net losses over the next few years as we invest in the commercialization of NUPLAZID and advance our development programs, including developing additional internal systems and infrastructure and hiring additional personnel. We also expect such investments and advancements will increase our expenses in the coming years. Thus, our future operating results and profitability may fluctuate from period to period, and we will need to generate significant revenues to achieve and maintain profitability and positive cash flow on a sustained basis.

We expect that our revenues over the next few years will be entirely dependent on our ability to generate product sales. Substantially all of our revenues since May 2016 were from net product sales of NUPLAZID. To the extent that we cannot generate significant revenues from the sale of NUPLAZID to cover our expenses, including the significant expenses associated with commercializing NUPLAZID and continuing to develop pimavanserin in additional indications, we may never achieve profitability and/or may have to reduce our commercialization and/or research and development activities to become profitable, which would harm our future growth prospects. Additionally, to obtain revenues from product candidates other than NUPLAZID, we must succeed, either alone or with others, in developing, obtaining regulatory approval for, manufacturing and marketing compounds with significant market potential. We may never succeed in these activities and may never generate revenues from our commercialization of NUPLAZID, or from other product candidates that may be approved, that are significant enough to achieve profitability.

If we fail to obtain the capital necessary to fund our operations, we will be unable to successfully continue the development and commercialization of NUPLAZID or successfully develop and commercialize our other product candidates.

We have consumed substantial amounts of capital since our inception. Our cash, cash equivalents, and investment securities totaled $416.8 million at December 31, 2022. While we believe that our existing cash resources will be sufficient to fund our cash requirements through at least the next twelve months, we may require significant additional financing in the future to continue to fund our operations. Our future capital requirements will depend on, and could increase significantly as a result of, many factors including:

- the progress in, and the costs of, our ongoing and planned development activities for pimavanserin, post-marketing studies for NUPLAZID to be conducted over the next several years, ongoing and planned commercial activities for NUPLAZID, and other research and development programs;
- the costs of our development activities for trofinetide, our early-stage pipeline programs and any other product candidates;
- the costs of commercializing NUPLAZID, including the maintenance and development of our sales and marketing capabilities;
- the costs of establishing, or contracting for, sales and marketing capabilities for other product candidates;
- the amount of U.S. product sales from NUPLAZID;
- the costs of preparing applications for regulatory approvals for NUPLAZID in jurisdictions other than the U.S., and in additional indications other than in PDP, and for other product candidates, as well as the costs required to support review of such applications;
- the costs of manufacturing and distributing NUPLAZID for commercial use in the U.S.;
- our ability to obtain regulatory approval for, and subsequently generate product sales from, NUPLAZID in jurisdictions other than the U.S. or in additional indications other than in PDP, or from trofinetide, our early-stage pipeline programs and any other product candidates;
- the costs of acquiring additional product candidates or research and development programs;
- the scope, prioritization and number of our research and development programs;

- the ability of our collaborators and us to reach the milestones and other events or developments triggering payments under our collaboration or license agreements, or our collaborators' ability to make payments under these agreements;
- our ability to enter into new collaboration and license agreements;
- the extent to which we are obligated to reimburse collaborators or collaborators are obligated to reimburse us for costs under collaboration agreements;
- the costs involved in filing, prosecuting, enforcing, and defending patent claims and other intellectual property rights;
- the costs of maintaining or securing manufacturing arrangements and supply for clinical or commercial production of pimavanserin, trofinetide or other product candidates; and
- the costs associated with litigation, including the costs incurred in defending against any product liability claims that may be brought against us related to NUPLAZID.

Unless and until we can generate significant cash from our operations, we expect to satisfy our future cash needs through our existing cash, cash equivalents and investment securities, strategic collaborations, public or private sales of our securities, debt financings, grant funding, or by licensing all or a portion of our product candidates or technology. In the past, periods of turmoil and volatility in the financial markets have adversely affected the market capitalizations of many biotechnology companies, and generally made equity and debt financing more difficult to obtain. For example, as a result of geopolitical and macroeconomic developments, including the ongoing conflict between Ukraine and Russia, related sanctions, the COVID-19 pandemic and actions taken to slow its spread, the global credit and financial markets have experienced extreme volatility and disruptions, including diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. These events, coupled with other factors, may limit our access to additional financing in the future. This could have a material adverse effect on our ability to access sufficient funding. We cannot be certain that additional funding will be available to us on acceptable terms, or at all. If funds are not available, we will be required to delay, reduce the scope of, or eliminate one or more of our research or development programs or our commercialization efforts. We also may be required to relinquish greater or all rights to product candidates at an earlier stage of development or on less favorable terms than we would otherwise choose. Additional funding, if obtained, may significantly dilute existing stockholders and could negatively impact the price of our stock.

We expect that our results of operations will fluctuate, which may make it difficult to predict our future performance from period to period.

Our operating results have fluctuated in the past and are likely to do so in future periods. Some of the factors that could cause our operating results to fluctuate from period to period include:

- the success of our commercialization of NUPLAZID in the U.S. for the treatment of hallucinations and delusions associated with PDP;
- the impact of geopolitical and macroeconomic developments, such as general political, health and economic conditions, including the Ukraine-Russia conflict, the COVID-19 pandemic, economic slowdowns, recessions, inflation, rising interest rates and tightening of credit markets on our business;
- the impact of the COVID-19 pandemic on our business, including the ability of our field sales force to meet with healthcare providers, visit physician's offices, hospitals and other healthcare facilities (including long-term care and skilled nursing facilities);
- the status and cost of our post-marketing commitments for NUPLAZID;
- the variation in our gross-to-net adjustments from quarter to quarter, primarily because of the fluctuation in our share of the donut hole for Medicare Part D patients;
- the status and cost of development and commercialization of pimavanserin for indications other than in PDP;
- the status and cost of development and commercialization of our product candidates, including compounds being developed under our collaborations;
- whether we acquire or in-license additional product candidates or products, and the status of development and commercialization of such product candidates or products;

- whether we generate revenues or reimbursements by achieving specified research, development or commercialization milestones under any agreements or otherwise receive potential payments under these agreements;
- whether we are required to make payments due to achieving specified milestones under any licensing or similar agreements or otherwise make payments under these agreements;
- the incurrence of preclinical or clinical expenses that could fluctuate significantly from period to period, including reimbursement obligations pursuant to our collaboration agreements;
- the initiation, termination, or reduction in the scope of our collaborations or any disputes regarding these collaborations;
- the timing of our satisfaction of applicable regulatory requirements;
- the rate of expansion of our clinical development, other internal research and development efforts, and pre-commercial and commercial efforts;
- the effect of competing technologies and products and market developments;
- the costs associated with litigation, including the costs incurred in defending against any product liability claims that may be brought against us related to NUPLAZID; and
- general and industry-specific economic conditions.

We believe that comparisons from period to period of our financial results are not necessarily meaningful and should not be relied upon as indications of our future performance.

From time to time, we provide guidance relating to our expectations for NUPLAZID net sales and certain expense line items based on estimates and the judgment of management. If, for any reason, our actual net sales or expenses differ materially from our guidance, we may have to revise our previously announced financial guidance. If we change, update or fail to meet any element of such guidance, our stock price could decline.

Changes in tax laws or regulations that are applied adversely to us or our customers may have a material adverse effect on our business, cash flow, financial condition or results of operations.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, which could adversely affect our business operations and financial performance. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. For example, legislation enacted in 2017 informally titled the Tax Cuts and Jobs Act, the Coronavirus Aid, Relief, and Economic Security Act and the Inflation Reduction Act enacted many significant changes to the U.S. tax laws. Effective January 1, 2022, the Tax Cuts and Jobs Act of 2017 eliminated the option to deduct research and development expenses for tax purposes in the year incurred and requires taxpayers to capitalize and subsequently amortize such expenses over five years for research activities conducted in the United States and over 15 years for research activities conducted outside the United States. Unless the United States Department of the Treasury issues regulations that narrow the application of this provision to a smaller subset of our research and development expenses or the provision is deferred, modified, or repealed by Congress, we expect a decrease in our cash flows from operations and an offsetting similarly sized increase in our net deferred tax assets over these amortization periods. The actual impact of this provision will depend on multiple factors, including the amount of research and development expenses we will incur and whether we conduct our research and development activities inside or outside the United States. Future guidance from the Internal Revenue Service and other tax authorities with respect to such legislation may affect us, and certain aspects of such legislation could be repealed or modified in future legislation. In addition, it is uncertain if and to what extent various states will conform to federal tax laws. Future tax reform legislation could have a material impact on the value of our deferred tax assets, could result in significant one-time charges, and could increase our future U.S. tax expense.

Our ability to use net operating losses and certain other tax attributes to offset future taxable income or taxes may be limited.

Portions of our net operating loss carryforwards could expire unused and be unavailable to offset future income tax liabilities. Under current law, federal net operating losses incurred in tax years beginning after December 31, 2017, may be carried forward indefinitely, but the deductibility of such federal net operating losses is limited to 80% of taxable income. It is uncertain if and to what extent various states will conform to federal tax laws. In addition, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the Code), and corresponding provisions of state law, if a corporation

undergoes an “ownership change,” which is generally defined as a greater than 50 percent change, by value, in its equity ownership over a three-year period, the corporation’s ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income or taxes may be limited. We have experienced ownership changes in the past and we may experience additional ownership changes in the future as a result of subsequent shifts in our stock ownership, some of which may be outside of our control. If an ownership change occurs and our ability to use our net operating loss carryforwards is materially limited, it would harm our future operating results by effectively increasing our future tax obligations. In addition, at the state level, there may be periods during which the use of net operating loss carryforwards is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. As a result, if we earn net taxable income, we may be unable to use all or a material portion of our net operating loss carryforwards and other tax attributes, which could potentially result in increased future tax liability to us and adversely affect our future cash flows.

Tax authorities could reallocate our taxable income among our subsidiaries, which could increase our overall tax liability.

In 2015, we licensed worldwide intellectual property rights related to pimavanserin in certain indications to Acadia Pharmaceuticals GmbH, our wholly owned Swiss subsidiary (Acadia GmbH), and in July 2020 we licensed additional related rights to Acadia GmbH. Our goals for the establishment of Acadia GmbH, and the licensing of worldwide intellectual property rights for pimavanserin, include building a platform for long-term operational and financial efficiencies, including tax-related efficiencies. Future changes in U.S. and non-U.S. tax laws, including implementation of international tax reform relating to the tax treatment of multinational corporations, if enacted, may reduce or eliminate any potential financial efficiencies that we hoped to achieve by establishing this operational structure. Additionally, taxing authorities, such as the U.S. Internal Revenue Service, may audit and otherwise challenge these types of arrangements, and have done so with other companies in the pharmaceutical industry. If any such changes in tax law are enacted, or our licensing of worldwide intellectual property rights for pimavanserin to our Swiss subsidiary is otherwise challenged, this could materially adversely affect our business.

Unfavorable 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 economies, the U.S. and global financial markets and adverse macroeconomic developments. U.S. and global market and economic conditions have been, and continue to be, disrupted and volatile due to many factors, including the ongoing COVID-19 pandemic and actions taken to slow its spread, material shortages and related supply chain challenges, geopolitical developments such as the conflict between Ukraine and Russia and related sanctions, and increasing inflation rates and the responses by central banking authorities to control such inflation, among others. General business and economic conditions that could affect our business, financial condition or results of operations include fluctuations in economic growth, debt and equity capital markets, liquidity of the global financial markets, the availability and cost of credit, investor and consumer confidence, and the strength of the economies in which we, our collaborators, our manufacturers and our suppliers operate.

A severe or prolonged global economic downturn could result in a variety of risks to our business. For example, inflation rates, particularly in the United States, have increased recently to levels not seen in years, and increased inflation may result in increases in our operating costs (including our labor costs), reduced liquidity and limits on our ability to access credit or otherwise raise capital on acceptable terms, if at all. In addition, the U.S. Federal Reserve has raised, and may again raise, interest rates in response to concerns about inflation, which coupled with reduced government spending and volatility in financial markets may have the effect of further increasing economic uncertainty and heightening these risks. Risks of a prolonged global economic downturn are particularly true in Europe, which is undergoing a continued severe economic crisis. A weak or declining economy could also strain our suppliers and manufacturers, possibly resulting in supply and clinical trial disruption. 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.

Public health threats, including the continuing COVID-19 pandemic, have impacted our clinical trials and could have an adverse effect on our operations and financial results, or may cause us to modify or suspend our financial guidance.

The COVID-19 pandemic has had a major impact on the financial markets, the global economy and the economies of particular countries or regions, and led to, among other things, travel restrictions, quarantines, “work-at-home” and “shelter-in-place” orders imposed by authorities and the extended shutdown of certain non-essential businesses in the U.S. throughout the world, including in countries where we have planned or active clinical trials. In an effort to protect the health and safety of our employees, our community, and our stakeholders, we have developed dynamic pandemic and workplace health policies applicable to all of our employees. These policies are localized based on current COVID-19 conditions, regulatory

guidance, public health and scientific recommendations, and federal, state, and local laws. We have reopened our offices to allow employees to return, but will continue to closely monitor the COVID-19 situation. We may face several challenges or disruptions upon a return back to the workplace, including re-integration challenges by our employees and distractions to management related to such transition. The effects and duration of such measures could have a material adverse impact on our business, results of operations, financial condition and prospects.

Our sales force had physical access to hospitals, clinics, long-term care and skilled nursing facilities, healthcare providers and pharmacies curtailed, and we are still assessing the effects such curtailment had on our sales or may have on our future sales. Currently, healthcare providers are conducting patient visits in-person and through telemedicine and our sales force has been able to call upon medical clinics, hospitals, long-term care facilities and skilled nursing facilities either in person in accordance with applicable regulatory guidance and local policies or virtually. While digital tools are available to our field employees to facilitate remote meetings with healthcare providers that are unable to meet in-person, we cannot ensure that these methods will be effective. Additionally, patients who are currently using NUPLAZID or who are eligible to use NUPLAZID, may be unable to meet with their healthcare providers in person, which may reduce the number of prescription refills or new patient starts, affecting our revenues both in our currently approved indication and potentially impacting our anticipated launches in other indications, if approved.

Our clinical trials were impacted by the COVID-19 pandemic as we temporarily paused enrollment in our ongoing clinical trials as well as commencement of new trials, and experienced delays in our data collection and site monitoring activities While we have re-initiated enrollment in clinical trials and related activities on a study-by-study and site-by-site basis, it is possible that our studies could be impacted due to COVID-19 in the future.

Since the beginning of the pandemic the growth of sales of NUPLAZID have been negatively impacted by ongoing conditions related to the pandemic, including a reduction in patient office visits, continuing reduced occupancy rates at long-term care facilities, and reduced access to healthcare professionals. While we observed incremental improvements in some of these factors since 2021, their levels are still below where they were pre-pandemic. It remains difficult to predict the duration of the pandemic's impact and the pace of, and no assurances can be given that the pandemic will not continue to have additional negative impacts on our business, results of operations, financial condition and prospects.

The geo-political turmoil resulting from Russia's invasion of Ukraine, including the widespread and significant economic sanctions imposed on Russia, has caused significant disruptions of our clinical trial activities in Russia and Ukraine.

We have engaged clinical research organizations (CROs) to conduct clinical trials worldwide. Certain of our trials have a limited number of clinical sites in Russia and Ukraine where patient recruiting and screening were not complete at the time of Russia's military aggression in Ukraine. The resulting geo-political turmoil has caused significant disruptions, including the suspension of further new enrollment of patients at our clinical trial sites in Ukraine and Russia. Existing patients may have been evacuated or relocated far from clinical sites, making it difficult for participation in our clinical trials. Site personnel and/or CRO personnel may be unavailable or otherwise unable to conduct clinical trial activities. Furthermore, the widespread sanctions imposed on Russia have affected clinical sites in Russia managed by our CROs. In addition, clinical sites, their personnel and patients may not be able to continue in the trials and we may need to suspend or terminate the trials in Russia. While we have a limited number of clinical sites in Ukraine and Russia, these significant disruptions and the suspension/termination of clinical trial activities could potentially delay the completion of enrollment in our clinical trials and complicate the analysis of data, as affected clinical sites might not be able to have their data be validated or protocol assessments may be missed. Even if data collection can be completed, the FDA may be unable to audit clinical trial sites in Ukraine or Russia. Interruptions of clinical trials may further delay our clinical development and the potential authorization or approval of our product candidates, which could materially increase our costs and adversely affect our ability to commence product sales and generate revenues.

Earthquake or fire damage to our facilities could delay our research and development efforts and adversely affect our business.

Our headquarters and research and development facilities in San Diego are located in a seismic zone, and we face the possibility of one or more earthquakes, which could be disruptive to our operations and result in delays in our research and development efforts. In addition, while our facilities have not been adversely impacted by local wildfires, there is the possibility of future fires in the area. In the event of an earthquake or fire, if our facilities or the equipment in our facilities is significantly damaged or destroyed for any reason, we may not be able to rebuild or relocate our facilities or replace any damaged equipment in a timely manner and our business, financial condition, and results of operations could be materially and adversely affected. We do not have insurance for damages resulting from earthquakes. While we do have fire insurance

for our property and equipment located in San Diego, any damage sustained in a fire could cause a delay in our research and development efforts and our results of operations could be materially and adversely affected.

Our business involves the use of hazardous materials, and we and our third-party manufacturers and suppliers must comply with environmental, health and safety laws and regulations, which can be expensive and restrict how we do, or interrupt our, business.

Our research and development activities and our third-party manufacturers' and suppliers' activities involve the generation, storage, use and disposal of hazardous materials, including the components of our products and product candidates and other hazardous compounds and wastes. We and our manufacturers and suppliers are subject to environmental, health and safety laws and regulations governing, among other matters, the use, manufacture, generation, storage, handling, transportation, discharge and disposal of these hazardous materials and wastes and worker health and safety. In some cases, these hazardous materials and various wastes resulting from their use are stored at our and our manufacturers' facilities pending their use and disposal. We cannot eliminate the risk of contamination or injury, which could result in an interruption of our commercialization efforts, research and development efforts and business operations, damages and significant cleanup costs and liabilities under applicable environmental, health and safety laws and regulations. We also cannot guarantee that the safety procedures utilized by our third-party manufacturers for handling and disposing of these materials and wastes generally comply with the standards prescribed by these laws and regulations. We may be held liable for any resulting damages costs or liabilities, which could exceed our resources, and state or federal or other applicable authorities may curtail our use of certain materials and/or interrupt our business operations. Furthermore, environmental, health and safety laws and regulations are complex, change frequently and have tended to become more stringent. We cannot predict the impact of such changes and cannot be certain of our future compliance. Failure to comply with these environmental, health and safety laws and regulations may result in substantial fines, penalties or other sanctions. We do not currently carry hazardous waste insurance coverage.

Risks Related to Our Relationships with Third Parties

We previously have depended, and in the future may depend, on collaborations with third parties to develop and commercialize selected product candidates other than pimavanserin, and we have limited control over how those third parties conduct development and commercialization activities for such product candidates.

In the past, we have selectively entered into collaboration agreements with third parties. We relied on our collaborators for financial resources and for development, regulatory, and commercialization expertise for selected product candidates and we had limited control over the amount and timing of resources that our collaborators devoted to our product candidates. We may choose to rely on collaborations in the future for certain portions of our pimavanserin program or other product candidates, or for the commercialization of NUPLAZID in certain territories outside of the U.S.

Our collaborators may fail to develop or effectively commercialize products using our product candidates or technologies because they:

- do not have sufficient resources or decide not to devote the necessary resources due to internal constraints such as limited cash or human resources or a change in strategic focus;
- may not properly maintain, enforce or defend our intellectual property rights or may use our proprietary information in a manner that could jeopardize or invalidate our proprietary information or expose us to potential litigation;
- terminate the arrangement or allow it to expire, which would delay the development and commercialization and may increase the cost of developing and commercializing our products or product candidates;
- may sell, transfer or divest assets or programs related to our partnered product or product candidates;
- may not pursue further development and commercialization of products resulting from the strategic collaboration arrangement;
- decide to pursue a competitive product developed outside of the collaboration; or
- cannot obtain the necessary regulatory approvals.

Collaborations are complex and time-consuming to negotiate and document. We also will face competition in our search for new collaborators, if we seek a new partner for our pimavanserin program or other programs. Given the current

economic and industry environment, it is possible that competition for new collaborators may increase. 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 additional collaborations on a timely basis, on acceptable terms, or at all. If we are unable to find new collaborations, we may not be able to continue advancing our programs alone.

If conflicts arise with our collaborators, they may act in their self-interests, which may be adverse to our interests.

Conflicts may arise in our collaborations due to one or more of the following:

- disputes or breaches with respect to payments that we believe are due under the applicable agreements, particularly in the current environment when companies, including large established ones, may be seeking to reduce external payments;
- disputes on strategy as to what development or commercialization activities should be pursued under the applicable agreements;
- disputes as to the responsibility for conducting development and commercialization activities pursuant to the applicable collaboration, including the payment of costs related thereto;
- disagreements with respect to ownership of intellectual property rights;
- unwillingness on the part of a collaborator to keep us informed regarding the progress of its development and commercialization activities, or to permit public disclosure of these activities;
- delay or reduction of a collaborator's development or commercialization efforts with respect to our product candidates; or
- termination or non-renewal of the collaboration.

Conflicts arising with our collaborators could impair the progress of our product candidates, harm our reputation, result in a loss of revenues, reduce our cash position, and cause a decline in our stock price.

In addition, in our past collaborations, we generally have agreed not to conduct independently, or with any third party, any research that is directly competitive with the research conducted under the applicable program. Any collaborations we establish in the future may have the effect of limiting the areas of research that we may pursue, either alone or with others. Conversely, the terms of any collaboration we may establish in the future might not restrict our collaborators from developing, either alone or with others, products in related fields that are competitive with the products or potential products that are the subject of these collaborations. Competing products, either developed by our collaborators or to which our collaborators have rights, may result in the allocation of resources by our collaborators to competing products and their withdrawal of support for our product candidates or may otherwise result in lower demand for our potential products.

We rely on third parties to conduct our clinical trials and perform data collection and analysis, which may result in costs and delays that prevent us from successfully commercializing product candidates.

Although we design and manage our current preclinical studies and clinical trials, we currently do not have the ability to conduct clinical trials for our product candidates on our own. We rely on CROs, medical institutions, clinical investigators, and contract laboratories to perform data collection and analysis and other aspects of our clinical trials. In addition, we also rely on third parties to assist with our preclinical studies, including studies regarding biological activity, safety, absorption, metabolism, and excretion of product candidates. Some of these third parties may experience shutdowns or other disruptions as a result of the COVID-19 pandemic and therefore may be unable to provide the level of service that we have received in the past.

Our preclinical activities or clinical trials may be delayed, suspended, or terminated if:

- these third parties do not successfully carry out their contractual duties or fail to meet regulatory obligations or expected deadlines;
- these third parties need to be replaced; or
- the quality or accuracy of the data obtained by these third parties is compromised due to their failure to adhere to our clinical protocols or regulatory requirements or for other reasons.

Failure to perform by these third parties may increase our development costs, delay our ability to obtain regulatory approval, and delay or prevent the commercialization of our product candidates. We currently use several CROs to perform services for our preclinical studies and clinical trials. While we believe that there are numerous alternative sources to provide these services, in the event that we seek such alternative sources, we may not be able to enter into replacement arrangements without delays or additional expenditures, any of which could affect our business, results of operations, financial condition and prospects.

Even if we or our collaborators successfully complete the clinical trials of product candidates, the product candidates may fail for other reasons.

Of the large number of product candidates in development, only a small percentage result in the submission of an NDA to the FDA or comparable regulatory filing to regulatory authorities in other jurisdictions, and even fewer are approved for marketing. We cannot assure you that, even if clinical trials are completed, either we or our collaborators will submit applications for required authorizations to manufacture and/or market potential products or that any such application will be reviewed and approved by the appropriate regulatory authorities in a timely manner, if at all. Even if we or our collaborators successfully complete the clinical trials of product candidates and apply for such required authorizations, the product candidates, such as pimavanserin, may fail for other reasons, including the possibility that the product candidates will:

- fail to receive the regulatory clearances required to market them as drugs;
- be subject to proprietary rights held by others requiring the negotiation of a license agreement prior to marketing;
- be difficult or expensive to manufacture on a commercial scale;
- have adverse side effects that make their use less desirable; or
- fail to compete with product candidates or other treatments commercialized by competitors.

We currently depend, and in the future will continue to depend, on third parties to manufacture NUPLAZID, trofinetide and any other product candidates. If these manufacturers fail to provide us or our collaborators with adequate supplies of clinical trial materials and commercial product or fail to comply with the requirements of regulatory authorities, we may be unable to develop or commercialize NUPLAZID, trofinetide or any other product candidates.

We have no manufacturing facilities and only limited experience as an organization in the manufacturing of drugs or in designing drug-manufacturing processes. We have contracted with third-party manufacturers to produce, in collaboration with us, NUPLAZID, trofinetide and our other product candidates.

We have contracted with Patheon Pharmaceuticals Inc. to manufacture NUPLAZID 10 mg tablet and 34 mg capsule drug product for commercial use in the U.S. We have also contracted with a second contract manufacturing organization to manufacture NUPLAZID 34 mg drug product for commercial use in the U.S. Additionally, we have contracted with Siegfried AG to manufacture active pharmaceutical ingredient (API), to be used in the manufacture of NUPLAZID drug product for commercial use. However, we have not entered into any agreements with any alternate suppliers for 10 mg NUPLAZID drug product or NUPLAZID API, and we may face delays or increased costs in our supply chain that could jeopardize the commercialization of NUPLAZID. While we currently have sufficient API and NUPLAZID finished product on hand to continue our commercial and clinical operations as planned, depending on the effects of geopolitical and macroeconomic developments and whether such developments cause disruptions, we may face such delays or costs in future years. If any third party in our supply or distribution chain for materials or finished product is adversely impacted by geopolitical and macroeconomic developments, such as the ongoing conflict between Ukraine and Russia or the COVID-19 pandemic, including staffing shortages, production slowdowns and disruptions in delivery systems, our supply chain may be disrupted, limiting our ability to manufacture and distribute NUPLAZID for commercial sales and our product candidates for our clinical trials and research and development operations. Additionally, if NUPLAZID is approved for commercial sale in jurisdictions outside the U.S., we will need to contract with a third party to manufacture such products for commercial sale in the U.S. and/or in such other jurisdictions. We may not be able to enter into such contracts in a timely manner or on acceptable terms, if at all.

We have contracted with manufacturers to produce clinical supplies of trofinetide to support the development program. If trofinetide or any other product candidate is approved by the FDA or other regulatory agencies for commercial sale, we will need to contract with a third party to manufacture such products for commercial sale in the U.S. and/or in such other jurisdictions. We may not be able to enter into such a contract in a timely manner or on acceptable terms, if at all.

Even though we have agreements with Patheon for the manufacture of NUPLAZID 10 mg tablet and agreements with Patheon and another manufacturer for the manufacture of 34 mg capsule drug product, and with Siegfried for the manufacture of NUPLAZID API for commercial use, and even if we successfully enter into long-term agreements with other manufacturers, the FDA may not approve the facilities of such manufacturers, the manufacturers may not perform as agreed, or the manufacturers may terminate their agreements with us. Presently, we have only one supplier of API, two suppliers for the 34 mg capsule and one supplier for the 10mg tablet of NUPLAZID. If any of the foregoing circumstances occur, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, maintain or obtain, as applicable, regulatory approval for or market NUPLAZID or trofinetide or any other product candidates. While we believe that there will be alternative sources available to manufacture NUPLAZID and trofinetide and any other product candidates, in the event that we seek such alternative sources, we may not be able to enter into replacement arrangements without delays or additional expenditures. We cannot estimate these delays or costs with certainty but, if they were to occur, they could cause a delay in our development and commercialization efforts.

The manufacturers of NUPLAZID and trofinetide and any other product candidates, including Patheon and Siegfried, are obliged to operate in accordance with FDA-mandated cGMPs, and we have limited control over the ability of third-party manufacturers to maintain adequate quality control, quality assurance and qualified personnel to ensure compliance with cGMPs. In addition, the facilities used by our third-party manufacturers to manufacture NUPLAZID and trofinetide and any other product candidates must be approved by the FDA pursuant to inspections that will be conducted prior to any grant of regulatory approval by the FDA. If any of our third-party manufacturers are unable to successfully manufacture material that conforms to our specifications and the FDA's strict regulatory requirements, or pass regulatory inspection, they will not be able to secure or maintain approval for the manufacturing facilities. Additionally, a failure by any of our third-party manufacturers to establish and follow cGMPs or to document their adherence to such practices may lead to significant delays in clinical trials or in obtaining regulatory approval of product candidates, or result in issues maintaining regulatory approval of NUPLAZID and trofinetide and any other product candidate that receives regulatory approval, negatively impact our commercialization of NUPLAZID, or lead to significant delays in the launch and commercialization of trofinetide or any other products we may have in the future. Failure by our third-party manufacturers or us to comply with applicable regulations could result in sanctions being imposed on us, including fines, injunctions, civil penalties, failure of the government to grant pre-market approval of drugs, delays, suspension or withdrawal of approvals, seizures or recalls of products, operating restrictions, and criminal prosecutions.

The manufacture of pharmaceutical products requires significant capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of pharmaceutical products often encounter difficulties in production. These problems include difficulties with production costs and yields, quality control, including stability of the product, quality assurance testing, shortages of qualified personnel, as well as compliance with strictly enforced federal, state and foreign regulations. We cannot assure you that any issues relating to the manufacture of NUPLAZID or trofinetide or any other product candidates will not occur in the future. Additionally, our manufacturers may experience manufacturing difficulties due to resource constraints or as a result of labor disputes or unstable political environments. If our manufacturers were to encounter any of these difficulties, or otherwise fail to comply with their contractual obligations, our ability to commercialize NUPLAZID in the U.S., or provide trofinetide or any other product candidates to patients in clinical trials, would be jeopardized. Any delay or interruption in our ability to meet commercial demand for NUPLAZID and any other approved products will result in the loss of potential revenues and could adversely affect our ability to gain market acceptance for these products. In addition, any delay or interruption in the supply of clinical trial supplies could delay the completion of clinical trials, increase the costs associated with maintaining clinical trial programs and, depending upon the period of delay, require us to commence new clinical trials at additional expense or terminate clinical trials completely.

Failures or difficulties faced at any level of our supply chain could materially adversely affect our business and delay or impede the development and commercialization of NUPLAZID or trofinetide or any other product candidates and could have a material adverse effect on our business, results of operations, financial condition and prospects.

If we fail to comply with the obligations in agreements under which we license intellectual property rights from third parties, we could lose license rights to certain of our product candidates.

In August 2018, we entered into a license agreement with Neuren, and obtained exclusive North American rights to develop and commercialize trofinetide for Rett syndrome and other indications. In January 2022, we entered into a license and collaboration agreement with Stoke to discover, develop and commercialize novel RNA-based medicines for the potential treatment of severe and rare genetic neurodevelopmental diseases of the CNS.

Our agreements with Neuren and Stoke impose, and we expect that future agreements where we in-license intellectual property will impose, 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 bankruptcy-related proceedings, 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.

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 patents and other rights to third parties;
- 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;
- our right to transfer or assign the license; 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 not be able to successfully develop and commercialize the related product candidates, which would have a material adverse effect on our business.

We may not be able to continue or fully exploit our collaborations with outside scientific and clinical advisors, which could impair the progress of our clinical trials and our research and development efforts.

We work with scientific and clinical advisors at academic and other institutions who are experts in the field of CNS disorders. They assist us in our research and development efforts and advise us with respect to our clinical trials. These advisors are not our employees and may have other commitments that would limit their future availability to us. Although our scientific and clinical advisors generally agree not to engage in competing work, if a conflict of interest arises between their work for us and their work for another entity, we may lose their services, which may impair our reputation in the industry and delay the development or commercialization of our product candidates.

Risks Related to Our Intellectual Property

Our ability to compete may decline if we do not adequately protect our proprietary rights.

Our commercial success depends on obtaining and maintaining intellectual property rights to our products and product candidates, including NUPLAZID, and technologies, as well as successfully defending these rights against third-party challenges. Successful challenges to, or misappropriation of, our intellectual property could enable competitors to quickly duplicate or surpass our technological achievements, thus eroding our competitive position in our market. To protect our intellectual property, we rely on a combination of patents, trade secret protection and contracts requiring confidentiality and nondisclosure. If our patents are successfully challenged, we may face generic competition prior to the expiration dates of our U.S. Orange Book listed patents. In addition, potential competitors have in the past and may in the future file an Abbreviated New Drug Application (ANDA) with the FDA for generic versions of NUPLAZID, seeking approval prior to the expiration of our patents. In response, we have filed complaints against these companies alleging infringement of certain of our Orange Book-listed patents covering NUPLAZID. For a more detailed description of these matters, see section captioned “Legal Proceedings” elsewhere in this report. While we intend to defend the validity of such patents vigorously, and will seek to use all appropriate methods to prevent their infringement, such efforts are expensive and time consuming. Any substantial decrease in the revenue and income derived from NUPLAZID would have an adverse effect on our results of operations.

With regard to patents, although we have filed numerous patent applications worldwide with respect to pimavanserin, not all of our patent applications resulted in an issued patent, or they resulted in an issued patent that is susceptible to challenge by a third party. Our ability to obtain, maintain, and/or defend our patents covering our product candidates and technologies is uncertain due to a number of factors, including:

- we may not have been the first to make the inventions covered by our pending patent applications or issued patents;
- we may not have been the first to file patent applications for our product candidates or the technologies we rely upon;
- others may develop similar or alternative technologies or design around our patent claims to produce competitive products that fall outside of the scope of our patents;
- our disclosures in patent applications may not be sufficient to meet the statutory requirements for patentability;
- we may not seek or obtain patent protection in all countries that will eventually provide a significant business opportunity;
- any patents issued to us or our collaborators may not provide a basis for commercially viable products, may not provide us with any competitive advantages, or are easily susceptible to challenges by third parties;
- our proprietary technologies may not be patentable;
- changes to patent laws that limit the exclusivity rights of patent holders or make it easier to render a patent invalid;
- recent decisions by the U.S. Supreme Court limiting patent-eligible subject matter;
- litigation regarding our patents may include challenges to the validity, enforceability, scope and term of one or more patents;
- the passage of The Leahy-Smith America Invents Act (the America Invents Act), introduced new procedures for challenging pending patent applications and issued patents; and
- technology that we may in-license may become important to some aspects of our business; however, we generally would not control the patent prosecution, maintenance or enforcement of any such in-licensed technology.

Even if we have or obtain patents covering our product candidates or technologies, we may still be barred from making, using and selling our product candidates or technologies because of the patent rights of others. Others have or may have filed, and in the future are likely to file, patent applications covering compounds, assays, genes, gene products or therapeutic products that are similar or identical to ours. There are many issued U.S. and foreign patents relating to genes, nucleic acids, polypeptides, chemical compounds or therapeutic products, and some of these may encompass reagents utilized in the identification of candidate drug compounds or compounds that we desire to commercialize. Numerous U.S. and foreign issued patents and pending patent applications owned by others exist in the area of CNS disorders and the other fields in which we are developing products. These could materially affect our freedom to operate. Moreover, because patent applications can take many years to issue, there may be currently pending applications, unknown to us, that may later result in issued patents that our product candidates or technologies may infringe. These patent applications may have priority over patent applications filed by us.

We regularly conduct searches to identify patents or patent applications that may prevent us from obtaining patent protection for our proprietary compounds or that could limit the rights we have claimed in our patents and patent applications. Disputes may arise regarding the ownership or inventorship of our inventions. For applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third-party or instituted by the U.S. Patent and Trademark Office (U.S. PTO), to determine who was the first to invent the invention at issue. It is difficult to determine how such disputes would be resolved. Applications containing a claim not entitled to priority before March 16, 2013, are not subject to interference proceedings due the change brought by the America Invents Act to a “first-to-file” system. However, a derivation proceeding can be brought by a third-party alleging that the inventor derived the invention from another.

Periodic maintenance fees on any issued patent are due to be paid to the U.S. PTO and foreign patent agencies in several stages over the lifetime of the patent. The U.S. PTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In such an event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

Some of our academic institutional licensors, research collaborators and scientific advisors have rights to publish data and information to which we have rights. We generally seek to prevent our collaborators from disclosing scientific discoveries until we have the opportunity to file patent applications on such discoveries, but in some cases, we are limited to relatively short periods to review a proposed publication and file a patent application. If we cannot maintain the confidentiality of our technology and other confidential information in connection with our collaborations, then our ability to receive patent protection or protect our proprietary information may be impaired.

Confidentiality agreements with employees and others may not adequately prevent disclosure of our trade secrets and other proprietary information and may not adequately protect our intellectual property, which could limit our ability to compete.

Because we operate in the highly technical field of drug discovery and development of small molecule drugs, we rely in part on trade secret protection in order to protect our proprietary technology and processes. However, trade secrets are difficult to protect. We enter into confidentiality, nondisclosure, and intellectual property assignment agreements with our corporate partners, employees, consultants, outside scientific collaborators, sponsored researchers, and other advisors. These agreements generally require that the other party keep confidential and not disclose to third parties all confidential information developed by the party or made known to the party by us during the course of the party's relationship with us. These agreements also 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. Enforcing a claim that a party illegally obtained and is using our trade secrets is difficult, expensive and time consuming and the outcome is unpredictable. In addition, courts outside the U.S. may be less willing to protect trade secrets. We also have not entered into any noncompete agreements with any of our employees. Although each of our employees is required to sign a confidentiality agreement with us at the time of hire, we cannot guarantee that the confidential nature of our proprietary information will be maintained in the course of future employment with any of our competitors. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, we will not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, operating results and financial condition.

A dispute concerning the infringement or misappropriation of our proprietary rights or the proprietary rights of others could be time-consuming and costly, and an unfavorable outcome could harm our business.

There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries, as well as administrative proceedings for challenging patents, including post-issuance review proceedings before the U.S. PTO or oppositions and other comparable proceedings in foreign jurisdictions.

Central provisions of the America Invents Act went into effect on September 16, 2012 and on March 16, 2013. The America Invents Act includes a number of significant changes to U.S. patent law. These changes include provisions that affect the way patent applications are being filed, prosecuted and litigated. For example, the America Invents Act enacted proceedings involving post-issuance patent review procedures, such as inter partes review (IPR), and post-grant review, that allow third parties to challenge the validity of an issued patent in front of the U.S. PTO Patent Trial and Appeal Board. Each proceeding has different eligibility criteria and different patentability challenges that can be raised. IPRs permit any person (except a party who has been litigating the patent for more than a year) to challenge the validity of the patent on the grounds that it was anticipated or made obvious by prior art. Patents covering pharmaceutical products have been subject to attack in IPRs from generic drug companies and from hedge funds. If it is within nine months of the issuance of the challenged patent, a third party can petition the U.S. PTO for post-grant review, which can be based on any invalidity grounds and is not limited to prior art patents or printed publications.

In post-issuance proceedings, U.S. PTO rules and regulations generally tend to favor patent challengers over patent owners. For example, unlike in district court litigation, claims challenged in post-issuance proceedings are given their broadest reasonable meaning, which increases the chance a claim might be invalidated by prior art or lack support in the patent specification. As another example, unlike in district court litigation, there is no presumption of validity for an issued patent, and thus, a challenger's burden to prove invalidity is by a preponderance of the evidence, as opposed to the heightened clear and convincing evidence standard. As a result of these rules and others, statistics released by the U.S. PTO show a high percentage of claims being invalidated in post-issuance proceedings. Moreover, with few exceptions, there is no standing requirement to petition the U.S. PTO for inter partes review or post-grant review. In other words, companies that have not been charged with infringement or that lack commercial interest in the patented subject matter can still petition the U.S. PTO for review of an issued patent. Thus, even where we have issued patents, our rights under those patents may be challenged and ultimately not provide us with sufficient protection against competitive products or processes.

We may be exposed to future litigation by third parties based on claims that our product candidates, technologies or activities infringe the intellectual property rights of others. In particular, there are many patents relating to specific genes, nucleic acids, polypeptides or the uses thereof to identify product candidates. Some of these may encompass genes or polypeptides that we utilize in our drug development activities. If our drug development activities are found to infringe any such patents, and such patents are held to be valid and enforceable, we may have to pay significant damages or seek licenses to such patents. A patentee could prevent us from using the patented genes or polypeptides for the identification or development of drug compounds. There are also many patents relating to chemical compounds and the uses thereof. If our compounds are found to infringe any such patents, and such patents are held to be valid and enforceable, we may have to pay significant damages or seek licenses to such patents. A patentee could prevent us from making, using or selling the patented compounds.

In addition to the patent infringement lawsuits that we have recently initiated against the filers of ANDAs pertaining to NUPLAZID, we may need to resort to litigation to enforce other patents issued to us, protect our trade secrets or determine the scope and validity of third-party proprietary rights. From time to time, we may hire scientific personnel formerly employed by other companies involved in one or more areas similar to the activities conducted by us. Either we or these individuals may be subject to allegations of trade secret misappropriation or other similar claims as a result of their prior affiliations. If we become involved in litigation, it could consume a substantial portion of our managerial and financial resources, regardless of whether we win or lose. We may not be able to afford the costs of litigation. Any legal action against us or our collaborators could lead to:

- payment of damages, which could potentially be trebled if we are found to have willfully infringed a party's patent rights;
- injunctive or other equitable relief that may effectively block our ability to further develop, commercialize, and sell products; or
- we or our collaborators having to enter into license arrangements that may not be available on commercially acceptable terms, or at all.

As a result, we could be prevented from commercializing current or future products.

Furthermore, because of the substantial amount of pre-trial document and witness 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. In addition, during the course of this kind of litigation, there could 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 substantial adverse effect on the trading price of our common stock.

The patent applications of pharmaceutical and biotechnology companies involve highly complex legal and factual questions, which, if determined adversely to us, could negatively impact our patent position.

The strength of patents in the pharmaceutical and biotechnology field can be highly uncertain and involve complex legal and factual questions. For example, some of our patent applications may cover the uses of gene sequences. The patentability of gene sequences and the use of gene sequences has been seriously undermined by recent decisions of the U.S. Supreme Court. The U.S. PTO's interpretation of the Supreme Court's decisions and the standards for patentability it sets forth are uncertain and could change in the future. Consequently, the issuance and scope of patents cannot be predicted with certainty. Patents, if issued, may be challenged, invalidated or circumvented. U.S. patents and patent applications may also be

subject to interference proceedings as mentioned above, and U.S. patents may be subject to reexamination and post-issuance proceedings in the U.S. PTO (and foreign patents may be subject to opposition or comparable proceedings in the corresponding foreign patent office), which 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. Similarly, opposition or invalidity proceedings could result in loss of rights or reduction in the scope of one or more claims of a patent in foreign jurisdictions. In addition, such interference, reexamination, post-issuance and opposition proceedings may be costly. Accordingly, rights under any issued patents may not provide us with sufficient protection against competitive products or processes.

In addition, changes in or different interpretations of patent laws in the U.S. and foreign countries may permit others to use our discoveries or to develop and commercialize our technology and products without providing any compensation to us or may limit the number of patents or claims we can obtain. In particular, there have been proposals to shorten the exclusivity periods available under U.S. patent law that, if adopted, could substantially harm our business. The product candidates that we are developing are protected by intellectual property rights, including patents and patent applications. If any of our product candidates becomes a marketable product, we will rely on our exclusivity under patents to sell the compound and recoup our investments in the research and development of the compound. If the exclusivity period for patents is shortened, then our ability to generate revenues without competition will be reduced and our business could be materially adversely impacted. The laws of some countries do not protect intellectual property rights to the same extent as U.S. laws and those countries may lack adequate rules and procedures for defending our intellectual property rights. For example, some countries, including many in Europe, do not grant patent claims directed to methods of treating humans and, in these countries, patent protection may not be available at all to protect our product candidates. In addition, U.S. patent laws may change which could prevent or limit us from filing patent applications or patent claims to protect our products and/or technologies or limit the exclusivity periods that are available to patent holders. For example, the America Invents Act (2012) included a number of significant changes to U.S. patent law. These included changes to transition from a “first-to-invent” system to a “first-to-file” system and to the way issued patents are challenged. These changes may favor larger and more established companies that have more resources to devote to patent application filing and prosecution. It is still not clear what, if any, impact the America Invents Act will ultimately have on the cost of prosecuting our patent applications, our ability to obtain patents based on our discoveries and our ability to enforce or defend our issued patents.

If we fail to obtain and maintain patent protection and trade secret protection of our product candidates, proprietary technologies and their uses, we could lose our competitive advantage and competition we face would increase, reducing our potential revenues and adversely affecting our ability to attain or maintain profitability.

Risks Related to Government Regulation and Our Industry

Healthcare reform measures may negatively impact our ability to sell NUPLAZID or our product candidates, if approved, profitably.

In both the U.S. and certain foreign jurisdictions, there have been a number of legislative and regulatory proposals to change the healthcare system in ways that could impact our ability to sell NUPLAZID, and any other potential products, as described in greater detail in the Government Regulation section of our Annual Report.

For example, the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010 (collectively the ACA), as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we may receive for any approved product, including NUPLAZID. With respect to pharmaceutical products, the ACA, among other things, expanded and increased industry rebates for drugs covered by Medicaid and made changes to the coverage requirements under Medicare Part D, Medicare’s prescription drug benefits program. There have been legal and political challenges to certain aspects of the ACA. Furthermore, on June 17, 2021, the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the “individual mandate” was repealed by Congress. Moreover, prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the ACA marketplace, which began on February 15, 2021 and remained open through August 15, 2021. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. Further, on August 16, 2022, President Biden signed the Inflation Reduction Act of 2022 (IRA) into law, which among other things, extends enhanced subsidies for individuals purchasing health insurance coverage in ACA marketplaces through plan

year 2025. The IRA also eliminates the "donut hole" under the Medicare Part D program beginning in 2025 by significantly lowering the beneficiary maximum out-of-pocket cost and through a newly established manufacturer discount program. It is possible that the ACA will be subject to judicial or Congressional challenges in the future. It is unclear how any such challenges and additional healthcare reform measures of the Biden administration will impact the ACA and our business.

Other legislative changes have been proposed and adopted in the U.S. since the ACA. Through the process created by the Budget Control Act of 2011, there are automatic reductions of Medicare payments to providers up to 2% per fiscal year, which went into effect in April 2013 and, due to subsequent legislative amendments, including the Infrastructure Investment and Jobs Act, will remain in effect through 2031 unless additional Congressional action is taken. However, COVID-19 pandemic relief legislation suspended the 2% Medicare sequester from May 1, 2020 through March 31, 2022. Under current legislation the actual reduction in Medicare payments will vary from 1% in 2022 to up to 4% in the final fiscal year of this sequester. Additionally, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminates the statutory Medicaid drug rebate cap, currently set at 100% of a drug's average manufacturer price, for single source and innovator multiple source drugs, beginning January 1, 2024. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to certain providers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. In addition, Congress is considering additional health reform measures as part of the budget reconciliation process.

An expansion in the government's role in the U.S. healthcare industry may increase existing congressional or governmental agency scrutiny on price increases, such as the ones we have implemented for NUPLAZID, cause general downward pressure on the prices of prescription drug products, lower reimbursements for providers using NUPLAZID or any other product for which we obtain regulatory approval, reduce product utilization and adversely affect our business and results of operations. There have been several recent U.S. presidential executive orders, Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the cost of drugs under Medicare, and reform government program reimbursement methodologies for drugs. For example, in July 2021, the Biden administration released an executive order that included multiple provisions aimed at prescription drugs. In response to Biden's executive order, on September 9, 2021, the Department of Health and Human Services (HHS) released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform. The plan sets out a variety of potential legislative policies that Congress could pursue as well as potential administrative actions HHS can take to advance these principles. In addition, the IRA, among other things, (1) directs HHS to negotiate the price of certain single-source drugs and biologics covered under Medicare and (2) imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation. These provisions will take effect progressively starting in fiscal year 2023, although they may be subject to legal challenges. It is currently unclear how the IRA will be implemented but is likely to have a significant impact on the pharmaceutical industry. Further, the Biden administration released an additional executive order on October 14, 2022, directing HHS to submit a report on how the Center for Medicare and Medicaid Innovation can be further leveraged to test new models for lowering drug costs for Medicare and Medicaid beneficiaries. It is unclear whether these this executive order or similar policy initiatives will be implemented in the future. Individual states in the U.S. have also increasingly passed legislation and implemented regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

The implementation of cost-containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize NUPLAZID or any other products for which we may receive regulatory approval. It is also possible that additional governmental action may be taken in response to the COVID-19 pandemic.

We are subject, directly and indirectly, to federal, state and foreign healthcare laws and regulations, including healthcare fraud and abuse laws, false claims laws, physician payment transparency laws and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

Our operations are directly, and indirectly through our customers and third-party payors, subject to various U.S. federal and state healthcare laws and regulations, including, without limitation, the U.S. federal Anti-Kickback Statute, the U.S. federal False Claims Act, and physician payment sunshine laws and regulations. These laws may impact, among other things, our clinical research, sales, marketing, grants, charitable donations, and education programs and constrain the business or financial arrangements with healthcare providers, physicians, charitable foundations that support Parkinson's disease patients generally, and other parties that have the ability to directly or indirectly influence the prescribing, ordering, marketing, or

distribution of our products for which we obtain marketing approval. In addition, we and any current or potential future collaborators, partners or service providers are or may become subject to data privacy and security regulation by both the U.S. federal government and the states in which we conduct our business, including laws and regulations that apply to our processing of personal data or the processing of personal data on our behalf. Finally, we may be subject to additional healthcare, statutory and regulatory requirements and enforcement by foreign regulatory authorities in jurisdictions in which we conduct our business. The laws that may affect our ability to operate include:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or paying any remuneration (including any kickback, bribe, or certain rebates), directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for, either the referral of an individual, or the purchase, lease, order or recommendation of any good, facility, item or service, for which payment may be made, in whole or in part, under U.S. federal and state healthcare programs such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- the U.S. federal civil and criminal false claims laws, including the civil False Claims Act, which can be enforced through civil whistleblower or *qui tam* actions, and civil monetary penalties laws, which impose criminal and civil penalties on individuals or entities for, among other things, knowingly presenting, or causing to be presented to the U.S. federal government, claims for payment or approval that are false or fraudulent or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the U.S. federal government. In addition, the government may assert that a claim including items and services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- the U.S. federal Health Insurance Portability and Accountability Act of 1996 (HIPAA), which imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statement, in connection with the delivery of, or payment for, healthcare benefits, items or services. Similar to the U.S. federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, and its implementing regulations, and as amended again by the Final HIPAA Omnibus Rule, Modifications to the HIPAA Privacy, Security, Enforcement and Breach Notification Rules Under the Health Information Technology for Economic and Clinical Health Act (HITECH) and the Genetic Information Nondiscrimination Act; Other Modifications to the HIPAA Rules, published in January 2013, which imposes certain obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information on covered entities subject to the rule, such as health plans, healthcare clearinghouses and certain healthcare providers as well as their business associates, individuals or entities that perform certain services involving the use or disclosure of individually identifiable health information on behalf of a covered entity and their subcontractors that use, disclose or otherwise process individually identifiable health information;
- the U.S. Federal Food, Drug and Cosmetic Act (FDCA), which prohibits, among other things, the adulteration or misbranding of drugs, biologics and medical devices;
- the U.S. federal physician payment transparency requirements, sometimes referred to as the “Physician Payments Sunshine Act”, which was enacted as part of the ACA and its implementing regulations and requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid, or the Children’s Health Insurance Program to report annually to the Centers for Medicare and Medicaid Services (CMS) information related to certain payments and other transfers of value made to physicians (as defined to include doctors of medicine, dentists, optometrists, podiatrists and chiropractors under such law), other healthcare professionals (such as physician assistants and nurse practitioners), and teaching hospitals, as well as information regarding ownership and investment interests held by physicians and their immediate family members; and
- analogous state and local laws and regulations, including: state anti-kickback and false claims laws, which may apply to our business practices, including but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by any third-party payor, including

private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state and local laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information, which requires tracking gifts and other remuneration and items of value provided to healthcare professionals and entities and/or the registration of pharmaceutical sales representatives; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Ensuring that our internal operations and future business arrangements with third parties comply with applicable healthcare laws and regulations could involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. For example, contributions to third-party charitable foundations are a current area of significant governmental and congressional scrutiny, and we could face action if a federal or state governmental authority were to conclude that our charitable contributions to foundations that support Parkinson's disease patients generally are not compliant. If our operations are found to be in violation of any of the laws described above or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, exclusion from U.S. government-funded healthcare programs, such as Medicare and Medicaid, disgorgement, imprisonment, contractual damages, reputational harm, diminished profits, additional reporting requirements and/or oversight, and the curtailment or restructuring of our operations. Moreover, while we do not bill third-party payors directly and our customers make the ultimate decision on how to submit claims, from time-to-time, for NUPLAZID, and any other product candidates that may be approved, we may provide reimbursement guidance to patients and healthcare providers. If a government authority were to conclude that we provided improper advice and/or encouraged the submission of a false claim for reimbursement, we could face action against us by government authorities. If any of the physicians or other providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government-funded healthcare programs and imprisonment. If any of the above occur, it could adversely affect our ability to operate our business and our results of operations. In addition, the approval and commercialization of NUPLAZID, or any other product candidates that may be approved, outside the U.S. will also likely subject us to foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

We are subject to stringent and evolving U.S. and foreign laws, regulations, rules, contractual obligations, policies and other obligations related to data privacy and security. Our actual or perceived failure to comply with such obligations could lead to regulatory investigations or actions; litigation; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; and other adverse business consequences.

In the ordinary course of business, we collect, receive, store, process, generate, use, transfer, disclose, make accessible, protect, secure, dispose of, transmit, and share (collectively, processing) personal data and other sensitive information, including proprietary and confidential business data, trade secrets, intellectual property, data we collect about trial participants in connection with clinical trials, sensitive third-party data, business plans, transactions, financial information and medical information collected by our patient access management team (collectively, sensitive data). Our data processing activities may subject us to numerous data privacy and security obligations, such as various laws, regulations, guidance, industry standards, external and internal privacy and security policies, contractual requirements, and other obligations relating to data privacy and security.

In the United States, federal, state, and local governments have enacted numerous data privacy and security laws, including data breach notification laws, personal data privacy laws, consumer protection laws (e.g., Section 5 of the Federal Trade Commission Act), and other similar laws (e.g., wiretapping laws). For example, HIPAA, as amended by HITECH, imposes specific requirements relating to the privacy, security, and transmission of individually identifiable health information. For example, the California Consumer Privacy Act of 2018 (CCPA) requires businesses to provide specific disclosures in privacy notices and honor requests of California residents to exercise certain privacy rights. The CCPA provides for civil penalties of up to $7,500 per violation and allows private litigants affected by certain data breaches to recover significant statutory damages. Although the CCPA exempts some data processed in the context of clinical trials, the CCPA may increase compliance costs and potential liability with respect to other personal data we may maintain about California residents. In addition, the California Privacy Rights Act of 2020 (CPRA), which became operative January 1, 2023, expands the CCPA's requirements, including applying to personal information of business representatives and employees and establishing a new regulatory agency to implement and enforce the law. Other states, such as Virginia and Colorado, have also passed comprehensive privacy laws, and similar laws are being considered in several other states, as well

as at the federal and local levels. While these states, like the CCPA, also exempt some data processed in the context of clinical trials, these developments further complicate compliance efforts and increase legal risk and compliance costs for us and the third parties upon whom we rely.

Outside the United States, an increasing number of laws, regulations, and industry standards may govern data privacy and security. For example, the EU GDPR, UK GDPR, Brazil's General Data Protection Law (Lei Geral de Proteção de Dados Pessoais, or LGPD) (Law No. 13,709/2018), and China's Personal Information Protection Law (PIPL) impose strict requirements for processing personal data. For example, companies may face temporary or definitive bans on data processing and other corrective actions; fines of up to 20 million Euros under the EU GDPR / 17.5 million pounds sterling under the UK GDPR or 4% of annual global revenue, whichever is greater; or private litigation related to processing of personal data brought by classes of data subjects or consumer protection organizations authorized at law to represent their interests.

In addition, we may be unable to transfer personal data from Europe and other jurisdictions to the United States or other countries due to data localization requirements or limitations on cross-border data flows. Europe and other jurisdictions have enacted laws requiring data to be localized or limiting the transfer of personal data to other countries. In particular, the European Economic Area (EEA) and the UK have significantly restricted the transfer of personal data to the United States and other countries whose privacy laws it believes are inadequate. Other jurisdictions may adopt similarly stringent interpretations of their data localization and cross-border data transfer laws. Although there are currently various mechanisms that may be used to transfer personal data from the EEA and UK to the United States in compliance with law, such as the EEA and UK's standard contractual clauses, these mechanisms are subject to legal challenges, and there is no assurance that we can satisfy or rely on these measures to lawfully transfer personal data to the United States. If there is no lawful manner for us to transfer personal data from the EEA, the UK, or other jurisdictions to the United States, or if the requirements for a legally-compliant transfer are too onerous, we could face significant adverse consequences, including by limiting our ability to conduct clinical trial activities in Europe and elsewhere, the interruption or degradation of our operations, the need to relocate part of or all of our business or data processing activities to other jurisdictions at significant expense, increased exposure to regulatory actions, substantial fines and penalties, the inability to transfer data and work with partners, vendors and other third parties, and injunctions against our processing or transferring of personal data necessary to operate our business. Some European regulators have ordered certain companies to suspend or permanently cease certain transfers of personal data to recipients outside Europe for allegedly violating the EU GDPR's cross-border data transfer limitations. Additionally, companies that transfer personal data to recipients outside of the EEA and/or UK to other jurisdictions, particularly to the United States, are subject to increased scrutiny from regulators individual litigants and activist groups.

In addition to data privacy and security laws, we may be contractually subject to industry standards adopted by industry groups and may become subject to such obligations in the future. We may also be bound by other contractual obligations related to data privacy and security, and our efforts to comply with such obligations may not be successful. We may publish privacy policies, marketing materials, and other statements, such as compliance with certain certifications or self-regulatory principles, regarding data privacy and security. If these policies, materials or statements are found to be deficient, lacking in transparency, deceptive, unfair, or misrepresentative of our practices, we may be subject to investigation, enforcement actions by regulators, or other adverse consequences.

Obligations related to data privacy and security are quickly changing, becoming increasingly stringent, and creating regulatory uncertainty. Additionally, these obligations may be subject to differing applications and interpretations, which may be inconsistent or conflict among jurisdictions. Preparing for and complying with these obligations requires us to devote significant resources and may necessitate changes to our services, information technologies, systems, and practices and to those of any third parties that process personal data on our behalf.

We may at times fail (or be perceived to have failed) in our efforts to comply with our data privacy and security obligations. Moreover, despite our efforts, our personnel or third parties on whom we rely on may fail to comply with such obligations, which could negatively impact our business operations. If we or the third parties on which we rely fail, or are perceived to have failed, to address or comply with applicable data privacy and security obligations, we could face significant consequences, including but not limited to: government enforcement actions (e.g., investigations, fines, penalties, audits, inspections, and similar); litigation (including class-action claims); additional reporting requirements and/or oversight; bans on processing personal data; and orders to destroy or not use personal data. Any of these events could have a material adverse effect on our reputation, business, or financial condition, including but not limited to loss of customers; inability to process personal data or to operate in certain jurisdictions; limited ability to develop or commercialize our products; expenditure of time and resources to defend any claim or inquiry; adverse publicity; or substantial changes to our business model or operations.

If we fail to comply with our reporting and payment obligations under the Medicaid Drug Rebate Program or other governmental pricing programs in the U.S., we could be subject to additional reimbursement requirements, fines, sanctions and exposure under other laws which could have a material adverse effect on our business, results of operations and financial condition.

We participate in the Medicaid Drug Rebate Program, as administered by CMS, and other federal and state government pricing programs in the U.S., and we may participate in additional government pricing programs in the future. These programs generally require us to pay rebates or otherwise provide discounts to government payors in connection with drugs that are dispensed to beneficiaries/recipients of these programs. In some cases, such as with the Medicaid Drug Rebate Program, the rebates are based on pricing that we report on a monthly and quarterly basis to the government agencies that administer the programs. Pricing requirements and rebate/discount calculations are complex, vary among products and programs, and are often subject to interpretation by governmental or regulatory agencies and the courts. The requirements of these programs, including, by way of example, their respective terms and scope, change frequently. For example, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminates the statutory Medicaid drug rebate cap, currently set at 100% of a drug's average manufacturer price (AMP), for single source and innovator multiple source drugs, beginning January 1, 2024. Responding to current and future changes may increase our costs, and the complexity of compliance will be time consuming. Invoicing for rebates is provided in arrears, and there is frequently a time lag of up to several months between the sales to which rebate notices relate and our receipt of those notices, which further complicates our ability to accurately estimate and accrue for rebates related to the Medicaid program as implemented by individual states. Thus, there can be no assurance that we will be able to identify all factors that may cause our discount and rebate payment obligations to vary from period to period, and our actual results may differ significantly from our estimated allowances for discounts and rebates. Changes in estimates and assumptions may have a material adverse effect on our business, results of operations and financial condition.

In addition, the HHS Office of Inspector General and other Congressional, enforcement and administrative bodies have recently increased their focus on pricing requirements for products, including, but not limited to the methodologies used by manufacturers to calculate AMP, and best price (BP), for compliance with reporting requirements under the Medicaid Drug Rebate Program. We are liable for errors associated with our submission of pricing data and for any overcharging of government payors. For example, failure to submit monthly/quarterly AMP and BP data on a timely basis could result in significant civil monetary penalties for each day the submission is late beyond the due date. Failure to make necessary disclosures and/or to identify overpayments could result in allegations against us under the civil False Claims Act and other laws and regulations. Any required refunds to the U.S. government or responding to a government investigation or enforcement action would be expensive and time consuming and could have a material adverse effect on our business, results of operations and financial condition. In addition, in the event that the CMS were to terminate our rebate agreement, no federal payments would be available under Medicaid or Medicare for our covered outpatient drugs.

The FDA granted marketing approval of NUPLAZID for the treatment of hallucinations and delusions associated with PDP, and we could face liability if a regulatory authority determines that we are promoting NUPLAZID for any "off-label" uses.

A company may not promote "off-label" uses for its drug products. An off-label use is the use of a product for an indication or patient population that is not described in the product's FDA-approved label in the U.S. or for uses in other jurisdictions that differ from those approved by the applicable regulatory agencies. Physicians, on the other hand, may prescribe products for off-label uses. Although the FDA and other regulatory agencies do not regulate a physician's choice of drug treatment made in the physician's independent medical judgment, they do restrict promotional communications from pharmaceutical companies or their sales force with respect to off-label uses of products for which marketing clearance has not been issued. A company that is found to have promoted off-label use of its product may be subject to significant liability, including civil and criminal sanctions. We intend to comply with the requirements and restrictions of the FDA and other regulatory agencies with respect to our promotion of NUPLAZID and any other products we may market, but we cannot be sure that the FDA or other regulatory agencies will agree that we have not violated their restrictions. As a result, we may be subject to criminal and civil liability. In addition, our management's attention could be diverted to handle any such alleged violations. A significant number of pharmaceutical companies have been the target of inquiries and investigations by various U.S. federal and state regulatory, investigative, prosecutorial and administrative entities in connection with the promotion of products for unapproved uses and other sales practices, including the Department of Justice (DOJ), and various U.S. Attorneys' Offices, the HHS Office of Inspector General, the FDA, the Federal Trade Commission and various state Attorneys General offices. These investigations have alleged violations of various U.S. federal and state laws and regulations, including claims asserting antitrust violations, violations of the FDCA, the civil False Claims Act, the Prescription Drug Marketing Act, anti-kickback laws, and other alleged violations in connection with the promotion of products for unapproved

uses, pricing and Medicare and/or Medicaid reimbursement. If the FDA, DOJ, or any other governmental agency initiates an enforcement action against us, or if we are the subject of a qui tam suit and it is determined that we violated prohibitions relating to the promotion of products for unapproved uses, we could be subject to substantial civil or criminal fines or damage awards and other sanctions such as consent decrees and corporate integrity agreements pursuant to which our activities would be subject to ongoing scrutiny and monitoring to ensure compliance with applicable laws and regulations. Any such fines, awards or other sanctions would have an adverse effect on our revenue, business, financial prospects, and reputation.

Changes at the FDA and other government agencies could delay or prevent new products from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal functions on which the operation of our business may rely, which could negatively impact our business.

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

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, including beginning on December 22, 2018 and ending on January 25, 2019, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical government employees and stop critical activities. If repeated or prolonged government shutdowns occur, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, and negatively impact other government operations on which we rely, which could have a material adverse effect on our business.

We are subject to stringent regulation in connection with the marketing of NUPLAZID and any other products derived from our product candidates, which could delay the development and commercialization of our products.

The pharmaceutical industry is subject to stringent regulation by the FDA and other regulatory agencies in the U.S. and by comparable authorities in other countries. Neither we nor our collaborators can market a pharmaceutical product, including NUPLAZID, in the U.S. until it has completed rigorous preclinical testing and clinical trials and an extensive regulatory clearance process implemented by the FDA. Satisfaction of regulatory requirements typically takes many years, depends upon the type, complexity and novelty of the product, and requires substantial resources. Even if regulatory approval is obtained, the FDA and other regulatory agencies may impose significant restrictions on the indicated uses, conditions for use, labeling, advertising, promotion, and/or marketing of such products, and requirements for post-approval studies, including additional research and development and clinical trials. These limitations may limit the size of the market for the product or result in the incurrence of additional costs. Any delay or failure in obtaining required approvals could have a material adverse effect on our ability to generate revenues from the particular product candidate.

Outside the U.S., the ability to market a product is contingent upon receiving approval from the appropriate regulatory authorities. The requirements governing the conduct of clinical trials, marketing authorization, pricing, and reimbursement vary widely from country to country. Only after the appropriate regulatory authority is satisfied that adequate evidence of safety, quality, and efficacy has been presented will it grant a marketing authorization. Approval by the FDA does not automatically lead to the approval by regulatory authorities outside the U.S. and, similarly, approval by regulatory authorities outside the U.S. will not automatically lead to FDA approval.

In addition, U.S. and foreign government regulations control access to and use of some human or other tissue samples in our research and development efforts. U.S. and foreign government agencies may also impose restrictions on the use of data derived from human or other tissue samples. Accordingly, if we fail to comply with these regulations and restrictions, the commercialization of our product candidates may be delayed or suspended, which may delay or impede our ability to generate product revenues.

If our competitors develop and market products that are more effective than NUPLAZID, trofinetide or our other product candidates, they may reduce or eliminate our commercial opportunity.

Competition in the pharmaceutical and biotechnology industries is intense and expected to increase. We face competition from pharmaceutical and biotechnology companies, as well as numerous academic and research institutions and

governmental agencies, both in the U.S. and abroad. Some of these competitors have products or are pursuing the development of drugs that target the same diseases and conditions that are the focus of our drug development programs.

For example, the use of NUPLAZID for the treatment of PDP competes with off-label use of various antipsychotic drugs, including the generic drugs quetiapine, clozapine, risperidone, aripiprazole, and olanzapine. Pimavanserin for the treatment of negative symptoms of schizophrenia, if approved for that indication, would compete with off-label use of Vraylar, marketed by Allergan, Rexulti, marketed by Otsuka Pharmaceutical Co., Ltd., Latuda, marketed by Sunovion Pharmaceuticals Inc., Caplyta, marketed by IntraCellular Therapeutics and various generic drugs, including quetiapine, clozapine, risperidone, aripiprazole, and olanzapine. In addition, trofinetide, if approved would compete indirectly with off-label usage of branded and generic prescription medications targeted at individual symptoms of Rett syndrome, including antiepileptics, antipsychotics, antidepressants and benzodiazepines. Several academic institutions and pharmaceutical companies are currently conducting clinical trials for the treatment of various symptoms of Rett syndrome.

Many of our competitors and their collaborators have significantly greater experience than we do in the following:

- identifying and validating targets;
- screening compounds against targets;
- preclinical studies and clinical trials of potential pharmaceutical products;
- obtaining FDA and other regulatory approvals; and
- commercializing pharmaceutical products.

In addition, many of our competitors and their collaborators have substantially greater capital and research and development resources, manufacturing, sales and marketing capabilities, and production facilities. Smaller companies also may prove to be significant competitors, particularly through proprietary research discoveries and collaboration arrangements with large pharmaceutical and established biotechnology companies. Many of our competitors have products that have been approved or are in advanced development and may develop superior technologies or methods to identify and validate drug targets and to discover novel small molecule drugs. Our competitors, either alone or with their collaborators, may succeed in developing drugs that are more effective, safer, more affordable, or more easily administered than ours and may achieve patent protection or commercialize drugs sooner than us. Our competitors may also develop alternative therapies that could further limit the market for any drugs that we may develop. Our failure to compete effectively could have a material adverse effect on our business.

If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of NUPLAZID or any other product for which we obtain regulatory approval, or development or commercialization of our product candidates.

We face an inherent risk of product liability as a result of the commercial sales of NUPLAZID in the U.S. and the clinical testing of our product candidates, and will face an even greater risk following commercial launch of NUPLAZID in additional jurisdictions, if approved, or if we engage in the clinical testing of new product candidates or commercialize any additional products. For example, we may be sued if NUPLAZID or any other product we develop allegedly causes injury or is found to be otherwise unsuitable for administration in humans. 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, negligence, strict liability or a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our product candidates. Even successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our products or product candidates that we may develop;
- injury to our reputation;
- withdrawal of clinical trial participants;
- initiation of investigations by regulators;
- costs to defend the related litigation;
- a diversion of management’s time and our resources;

- substantial monetary awards to trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- exhaustion of any available insurance and our capital resources;
- the inability to commercialize our products or product candidates; and
- a decline in our stock price.

Although we currently have product liability insurance that covers our clinical trials and the commercialization of NUPLAZID, we may need to increase and expand this coverage, including if we commence larger scale trials and if other product candidates are approved for commercial sale. This insurance may be prohibitively expensive or may not fully cover our potential liabilities. Inability to obtain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims could prevent or inhibit the commercialization of products that we or our collaborators develop. If we determine that it is prudent to increase our product liability coverage, we may be unable to obtain such increased coverage on acceptable terms or at all. Our insurance policies also have various exclusions, and we may be subject to a product liability claim for which we have no coverage. Our liability could exceed our total assets if we do not prevail in a lawsuit from any injury caused by our drug products. Product liability claims could have a material adverse effect on our business and results of operations.

If our information technology systems or data, or those of third parties upon which we rely, are or were compromised, we could experience adverse consequences resulting from such compromise, including but not limited to regulatory investigations or actions, interruptions to operations or clinical trials, reputational harm, litigation, fines and penalties, disruptions of our business operations, and a loss of customers or sales.

In the ordinary course of our business, we , or the third parties upon which we rely, process, collect, receive, store, use, transmit, transfer, make accessible, protect, secure, dispose of, disclose and share proprietary, confidential, and sensitive data, including personal data (such as health-related data), intellectual property, and trade secrets.

Cyberattacks, malicious internet-based activity, online and offline fraud and other similar activities threaten the confidentiality, integrity, and availability of our sensitive information and information technology systems, and those of the third parties upon which we rely. These threats are prevalent, continue to rise, and are becoming increasingly difficult to detect. These threats come from a variety of sources, including traditional computer “hackers,” threat actors, personnel misconduct or error (such as through theft or misuse), organized criminal threat actors, sophisticated nation-states, and nation-state-supported actors. Some actors now engage and are expected to continue to engage in cyber-attacks, including without limitation nation-state actors for geopolitical reasons and in conjunction with military conflicts and defense activities. During times of war and other major conflicts, we and the third parties upon which we rely may be vulnerable to a heightened risk of these attacks, including retaliatory cyber-attacks, that could materially disrupt our systems and operations, supply chain, and ability to produce, sell and distribute our goods and services.

We and the third parties upon which we rely are subject to a variety of evolving threats, including but not limited to, social engineering attacks (including through phishing attacks), malicious code (such as viruses and worms), malware (including as a result of advanced persistent threat intrusions), denial-of-service attacks (such as credential stuffing), personnel misconduct or error, ransomware attacks, supply-chain attacks, software bugs, server malfunction, software or hardware failures, loss of data or other information technology assets, adware, telecommunications failures, earthquakes, fire, flood, and other similar threats.

Ransomware attacks, including by organized criminal threat actors, nation-states, and nation-state-supported actors, are becoming increasingly prevalent and severe and can lead to significant interruptions, delays, or outages in our operations, disruption of clinical trials, loss of data (including data related to clinical trials) and income, significant extra expenses to restore data or systems, reputational harm and the diversion of funds. Extortion payments may alleviate the negative impact of a ransomware attack, but we may be unwilling or unable to make such payments (including, for example, if applicable laws or regulations prohibit such payments). The COVID-19 pandemic and our partially remote workforce poses increased risks to our information technology systems and data, as more of our employees work from home, utilizing network connections outside our premises. Future or past business transactions (such as acquisitions or integrations) could expose us to additional cybersecurity risks and vulnerabilities, as our systems could be negatively affected by vulnerabilities present in acquired or integrated entities’ systems and technologies. Furthermore, we may discover security issues that were not found

during due diligence of such acquired or integrated entities, and it may be difficult to integrate companies into our information technology environment and security program.

We rely on third-party service providers and technologies to operate critical business systems to process sensitive information in a variety of contexts, including, without limitation, cloud-based infrastructure, drug suppliers, data center facilities, encryption and authentication technology, employee email, content delivery to customers, and other functions. Our ability to monitor these third parties' information security practices is limited, and these third parties may not have adequate information security measures in place. In addition, supply-chain attacks have increased in frequency and severity, and we cannot guarantee that third parties' infrastructure in our supply chain or our third-party partners' supply chains have not been compromised. For example, in May 2021, a key drug supplier notified us of a ransomware attack on our supplier's systems; however, to date we found no indication that our personal data was exposed.

Any of the previously identified or similar threats could cause a security incident or other interruption that could result in unauthorized, unlawful, or accidental acquisition, modification, destruction, loss, alteration, encryption, disclosure of, or access to our sensitive information or our information technology systems, or those of the third parties upon whom we rely. A security incident or other interruption could disrupt our ability (and that of third parties upon whom we rely) to provide our products.

We may expend significant resources, fundamentally change our business activities and practices (including our clinical trials) to try to protect against security incidents. Certain data privacy and security obligations may require us to implement and maintain specific security measures or industry-standard or reasonable security measures to protect our information technology systems and sensitive information. While we have implemented security measures designed to protect against security incidents, there can be no assurance that these measures will be effective. We may be unable in the future to detect vulnerabilities in our information technology systems (including our products) because such threats and techniques change frequently, are often sophisticated in nature, and may not be detected until after a security incident has occurred. Further, we may experience delays in developing and deploying remedial measures designed to address any such identified vulnerabilities.

Applicable data privacy and security obligations may require us to notify relevant stakeholders of security incidents. Such disclosures are costly, and the disclosure or the failure to comply with such requirements could lead to adverse consequences. If we (or a third party upon whom we rely) experience a security incident or are perceived to have experienced a security incident, we may experience adverse consequences. These consequences may include: government enforcement actions (for example, investigations, fines, penalties, audits, and inspections); additional reporting requirements and/or oversight; restrictions on processing sensitive information (including personal data); litigation (including class claims); indemnification obligations; negative publicity; reputational harm; monetary fund diversions; interruptions in our operations (including availability of data); financial loss; and other similar harms. Security incidents and attendant consequences may cause customers to stop using our products, deter new customers from using our products, and negatively impact our ability to grow and operate our business.

Our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to our data privacy and security obligations.

In addition, our insurance coverage may not be adequate or sufficient in type or amount to protect us from or to mitigate liabilities arising out of our privacy and security practices. The successful assertion of one or more large claims against us that exceeds our available insurance coverage, or results in changes to our insurance policies (including premium increases or the imposition of large deductible or co-insurance requirements), could have an adverse effect on our business.

Risks Related to Our Common Stock

Our stock price historically has been, and is likely to remain, highly volatile.

The market prices for securities of biotechnology companies in general, and drug discovery and development companies in particular, have been highly volatile and may continue to be highly volatile in the future. From the period between January 3, 2022 to February 24, 2023, the closing price of our common stock has ranged from a low of $13.01 per share to a high of $27.50 per share. Furthermore, especially as we and our market capitalization have grown, the price of our common stock has been increasingly affected by quarterly and annual comparisons with the valuations and recommendations

of the analysts who cover our business. The following factors, in addition to other risk factors described in this section, may have a significant impact on the market price of our common stock:

- the success of our commercialization of NUPLAZID in the U.S. for the treatment of hallucinations and delusions associated with PDP;
- the status and cost of development and commercialization of our product candidates, including compounds being developed under our collaborations;
- whether we acquire or in-license additional product candidates or products, and the status of development and commercialization of such product candidates or products;
- the status and cost of development and commercialization of pimavanserin for indications other than in PDP, including ADP, and in jurisdictions other than the U.S.;
- any other communications or guidance from the FDA or other regulatory authorities that pertain to NUPLAZID or our product candidates;
- the status and cost of our post-marketing commitments for NUPLAZID;
- the initiation, termination, or reduction in the scope of our collaborations or any disputes or developments regarding our collaborations;
- market conditions or trends related to biotechnology and pharmaceutical industries, or the market in general;
- announcements of technological innovations, new products, or other material events by our competitors or us, including any new products that we may acquire or in-license;
- disputes or other developments concerning our proprietary and intellectual property rights;
- changes in, or failure to meet, securities analysts' or investors' expectations of our financial performance;
- our failure to meet applicable Nasdaq listing standards and the possible delisting of our common stock from the Nasdaq Stock Market;
- additions or departures of key personnel;
- discussions of our business, products, financial performance, prospects, or stock price by the financial and scientific press and online investor communities such as blogs and chat rooms;
- public concern as to, and legislative action with respect to, genetic testing or other research areas of biopharmaceutical companies, the pricing and availability of prescription drugs, or the safety of drugs and drug delivery techniques;
- regulatory developments in the U.S. and in foreign countries;
- changes in the structure of healthcare payment systems;
- the announcement of, or developments in, any litigation matters;
- disruptions caused by geopolitical or macroeconomic developments or other business interruptions, including, for example, the ongoing conflict between Ukraine and Russia, related sanctions and the COVID-19 pandemic; and
- economic and political factors, including but not limited to economic and financial crises, wars, terrorism, and political unrest.

In the past, following periods of volatility in the market price of a particular company's securities, securities class action litigation has often been brought against that company. For example, we, and certain of our current and former officers and directors, are subject to numerous lawsuits related to prior statements about NUPLAZID and our sNDA seeking approval of pimavanserin for the treatment of hallucinations and delusions associated with DRP, as described in "Legal Proceedings". If we are not successful in defense of these claims, we may have to make significant payments to, or other settlements with, our stockholders and their attorneys. Even if such claims are not successful, the litigation could result in substantial costs and divert our management's attention and resources, which could have a material adverse effect on our business, operating results or financial condition.

If we or our stockholders sell substantial amounts of our common stock, the market price of our common stock may decline.

A significant number of shares of our common stock are held by a small number of stockholders. Sales of a significant number of shares of our common stock, or the expectation that such sales may occur, could significantly reduce the market price of our common stock. In connection with our March 2014 public offering of common stock, we agreed to provide resale registration rights for the shares of our common stock held by entities affiliated with one of our principal stockholders and two of our directors, Julian C. Baker and Dr. Stephen R. Biggar, which we refer to as the Baker Entities. In connection with our January 2016 public offering of common stock, we entered into a formal registration rights agreement with the Baker Entities to provide for these rights. Under the registration rights agreement, we have agreed that, if at any time and from time to time, the Baker Entities demand that we register their shares of our common stock for resale under the Securities Act, we would be obligated to effect such registration. On May 3, 2019, we filed a registration statement covering the sale of up to 40,203,111 shares of our common stock, which includes 489,269 shares of our common stock issuable upon the exercise of warrants that were owned by the Baker Entities as of April 29, 2019, and which represented approximately 28 percent of our outstanding shares at the time. Our registration obligations under this registration rights agreement, which cover all shares now held or later acquired by the Baker Entities, will be in effect for up to 10 years, and include our obligation to facilitate certain underwritten public offerings of our common stock by the Baker Entities in the future. If the Baker Entities sell a large number of our shares, or the market perceives that the Baker Entities intend to sell a large number of our shares, this could adversely affect the market price of our common stock. We also may elect to sell from time to time an indeterminate number of shares on our own behalf pursuant to a registration statement or in a private placement. Our stock price may decline as a result of the sale of the shares of our common stock included in any of these registration statements or future financings.

If our officers, directors, and largest stockholders choose to act together, they may be able to significantly influence our management and operations, acting in their best interests and not necessarily those of our other stockholders.

Our directors, executive officers and holders of 5% or more of our outstanding common stock and their affiliates beneficially own a substantial portion of our outstanding common stock. As a result, these stockholders, acting together, have the ability to significantly influence all matters requiring approval by our stockholders, including the election of all of our board members, amendments to our certificate of incorporation, going-private transactions, and the approval of mergers or other business combination transactions. The interests of this group of stockholders may not always coincide with our interests or the interests of other stockholders and they may act in a manner that advances their best interests and not necessarily those of our other stockholders.

Anti-takeover provisions in our charter documents and under Delaware law may make an acquisition of us more complicated and may make the removal and replacement of our directors and management more difficult.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that may delay or prevent a change in control, discourage bids at a premium over the market price of our common stock and adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. These provisions may also make it difficult for stockholders to remove and replace our board of directors and management. These provisions:

- establish that members of the board of directors may be removed only for cause upon the affirmative vote of stockholders owning at least a majority of our capital stock;
- authorize the issuance of “blank check” preferred stock that could be issued by our board of directors to increase the number of outstanding shares and prevent or delay a takeover attempt;
- limit who may call a special meeting of stockholders;
- establish advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted upon at stockholder meetings;
- prohibit our stockholders from making certain changes to our amended and restated certificate of incorporation or amended and restated bylaws except with $66^{2/3}$% stockholder approval; and
- provide for a board of directors with staggered terms.

We are also subject to provisions of the Delaware corporation law that, in general, prohibit any business combination with a beneficial owner of 15% or more of our common stock for three years unless the holder's acquisition of our stock was approved in advance by our board of directors. Although we believe these provisions collectively provide for an opportunity to receive higher bids by requiring potential acquirors to negotiate with our board of directors, they would apply even if the offer may be considered beneficial by some stockholders.

We do not intend to pay dividends on our common stock in the foreseeable future; as such, you must rely on stock appreciation for any return on your investment.

To date, we have not paid any cash dividends on our common stock, and we do not intend to pay any dividends in the foreseeable future. Instead, we intend to retain any future earnings to fund the development and growth of our business. For this reason, the success of an investment in our common stock, if any, will depend on the appreciation of our common stock, which may not occur. There is no guarantee that our common stock will appreciate, and therefore, a holder of our common stock may not realize a return on his or her investment.

General Risk Factors

Our management has broad discretion over the use of our cash and we may not use our cash effectively, which could adversely affect our results of operations.

Our management has significant flexibility in applying our cash resources and could use these resources for corporate purposes that do not increase our market value, or in ways with which our stockholders may not agree. We may use our cash resources for corporate purposes that do not yield a significant return or any return at all for our stockholders, which may cause our stock price to decline.

We have incurred, and expect to continue to incur, significant costs as a result of laws and regulations relating to corporate governance and other matters.

Laws and regulations affecting public companies, including provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act that was enacted in July 2010, the provisions of the Sarbanes-Oxley Act of 2002 (SOX), and rules adopted or proposed by the SEC and by The Nasdaq Stock Market, have resulted in, and will continue to result in, significant costs to us as we evaluate the implications of these rules and respond to their requirements. In the future, if we are not able to issue an evaluation of our internal control over financial reporting, as required, or we or our independent registered public accounting firm determine that our internal control over financial reporting is not effective, this shortcoming could have an adverse effect on our business and financial results and the price of our common stock could be negatively affected. New rules could make it more difficult or more costly for us to obtain certain types of insurance, including director and officer liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the coverage that is the same or similar to our current coverage. The impact of these events could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors and board committees, and as our executive officers. We cannot predict or estimate the total amount of the costs we may incur or the timing of such costs to comply with these rules and regulations.

Adverse securities and credit market conditions may significantly affect our ability to raise capital.

Historically, turmoil and volatility in the financial markets (including recent volatility as a result of geopolitical and macroeconomic developments such as the ongoing conflict between Ukraine and Russia and the COVID-19 pandemic) have adversely affected the market capitalizations of many biotechnology companies, and generally made equity and debt financing more difficult to obtain. These events, coupled with other factors, may limit our access to financing in the future. This could have a material adverse effect on our ability to access funding on acceptable terms, or at all, and our stock price may suffer further as a result.

Item 1B. ***Unresolved Staff Comments.***

This item is not applicable.

Item 2. ***Properties.***

As of December 31, 2022, our primary facility consists of approximately 98,000 square feet of office space in San Diego, California. We also lease a facility in Princeton, New Jersey that covers approximately 25,000 square feet of office space, which is leased through January 2025.

Item 3. ***Legal Proceedings.***

On July 24, 2020, we filed complaints against (i) Aurobindo Pharma Limited and its affiliate Aurobindo Pharma USA, Inc. and (ii) Teva Pharmaceuticals USA, Inc. and its affiliate Teva Pharmaceutical Industries Ltd., and on July 30, 2020, we filed complaints against (i) Hetero Labs Limited and its affiliates Hetero Labs Limited Unit-V and Hetero USA Inc., (ii) MSN Laboratories Private Ltd. and its affiliate MSN Pharmaceuticals, Inc., and (iii) Zydus Pharmaceuticals (USA) Inc. and its affiliate Cadila Healthcare Limited. These complaints, which were filed in the United States District Court for the District of Delaware, allege infringement of certain of our Orange Book-listed patents covering NUPLAZID. The cases have been assigned to the Honorable Richard G. Andrews. On September 1, 2020, Aurobindo filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity. On September 22, 2020, we filed our answer to Aurobindo's counterclaims. On August 31, 2020, Teva filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity. On September 21, 2020, we filed our answer to Teva's counterclaims. On October 5, 2020, Hetero filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity. On October 26, 2020, we filed our answer to Hetero's counterclaims. On September 30, 2020, MSN filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity regarding certain of our Orange Book-listed patents covering NUPLAZID. On November 5, 2020, we filed our first amended complaint against MSN in the United States District Court for the District of Delaware, alleging infringement of certain of our Orange Book-listed patents covering NUPLAZID. On November 19, 2020, MSN filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity regarding certain of our Orange Book-listed patents covering NUPLAZID. On December 10, 2020, we filed our answer to MSN's counterclaims. On November 2, 2020, Zydus filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity. On November 23, 2020, we filed our answer to Zydus's counterclaims. On December 8, 2020, the parties' joint proposed scheduling order was entered by Judge Andrews. On April 7, 2021, we filed our first amended complaints against Hetero and Teva and our second amended complaint against MSN, to include an additional Orange Book-listed patent covering NUPLAZID. On April 8, 2021, we filed our first amended complaint against Zydus and on April 9, 2021, we filed our first amended complaint against Aurobindo. On April 20, 2021, MSN filed its answer, affirmative defenses, and counterclaims to our second amended complaint, seeking declaratory judgments of noninfringement and invalidity regarding certain of our Orange Book-listed patents covering NUPLAZID. On April 21, 2021, Teva filed its answer, affirmative defenses, and counterclaims to our first amended complaint, seeking declaratory judgments of noninfringement and invalidity. On April 22, 2021, Zydus filed its answer, affirmative defenses, and counterclaims to our first amended complaint, seeking declaratory judgments of noninfringement and invalidity.

On April 22, 2021, Aurobindo filed its answer, affirmative defenses, and counterclaims to our first amended complaint, seeking declaratory judgments of noninfringement and invalidity. On May 11, 2021, we filed our answer to MSN's counterclaims. On May 12, we filed our answer to Teva's counterclaims. On May 13, we filed our answer to Zydus's counterclaims and our answer to Aurobindo's counterclaims. A joint trial in the matters is scheduled for May 15, 2023. We entered into an agreement effective April 22, 2021 with Hetero settling all claims and counterclaims in the litigation. The agreement allows Hetero to launch its generic pimavanserin product on July 27, 2038, subject to certain triggers for earlier launch. The Hetero case was dismissed by joint agreement on May 3, 2021.

On August 27, 2021, we filed our second amended complaint against Zydus to include an additional Orange Book-listed patent covering NUPLAZID. On September 10, 2021, Zydus filed its answer, affirmative defenses, and counterclaims to our second amended complaint, seeking declaratory judgments of noninfringement and invalidity. Also on September 10, 2021, the parties filed their Joint Claim Construction Chart. On October 1, 2021, we filed our answer to Zydus's counterclaims. On November 30, 2021, we filed a stipulation and proposed order to dismiss two of our Orange Book-listed patents covering NUPLAZID against Teva, which was ordered by the Court on December 1, 2021. On January 28, 2022, the parties filed their Joint Claim Construction Brief and Appendix. On February 23, 2022, the Court heard oral argument on claim construction. On April 6, 2022, the Court issued a Memorandum Opinion construing several terms at issue, adopting our construction on two terms, Defendants' construction on two terms, and one agreed-upon construction. On February 28, 2022, we filed a stipulation and proposed order to dismiss one patent against MSN, which was ordered by the Court on March 1, 2022. On March 10, 2022, we filed a stipulation and proposed order to dismiss one patent against Teva, which was ordered by the Court on March 10, 2022. On March 22, 2022, we filed a stipulation and proposed order to dismiss seven patents against Aurobindo, which was ordered by the Court on March 22, 2022. On March 30, 2022, we filed a stipulation

and proposed order to dismiss two patents against Zydus, which was ordered by the Court on March 31, 2022. On April 22, 2022, we filed a stipulation and proposed order of non-infringement against Aurobindo regarding certain of our Orange Book-listed patents covering NUPLAZID, which was ordered by the Court on April 22, 2022. On April 26, 2022, we filed a stipulation and proposed order of non-infringement against MSN regarding certain of our Orange Book-listed patents covering NUPLAZID, which was ordered by the Court on April 26, 2022. On April 26, 2022, we filed a stipulation and proposed order of non-infringement against Teva regarding certain of our Orange Book-listed patents covering NUPLAZID, which was ordered by the Court on April 27, 2022. On May 10, 2022, we filed our second amended complaint against Teva to include an additional Orange Book-listed patent covering NUPLAZID. On May 18, 2022, we filed a stipulation and proposed order of non-infringement against Zydus regarding certain of our Orange Book-listed patents covering NUPLAZID, which was ordered by the Court on May 19, 2022. On May 24, 2022, Teva filed its answer, affirmative defenses, and counterclaims to our second amended complaint, seeking declaratory judgments of noninfringement and invalidity regarding certain of our Orange Book-listed patents covering NUPLAZID. On June 1, 2022, we filed our second amended complaint against Aurobindo alleging infringement of certain of our Orange Book-listed patents covering NUPLAZID. On June 2, 2022, we filed our third amended complaint against Zydus alleging infringement of certain of our Orange Book-listed patents covering NUPLAZID. On June 14, 2022, we filed our answer to Teva's counterclaims. June 15, 2022, Aurobindo filed its answer, affirmative defenses, and counterclaims to our second amended complaint, seeking declaratory judgments of noninfringement and invalidity regarding certain of our Orange Book-listed patents covering NUPLAZID. On June 16, 2022, Zydus filed its answer, affirmative defenses, and counterclaims to our third amended complaint, seeking declaratory judgments of noninfringement and invalidity regarding certain of our Orange Book-listed patents covering NUPLAZID. On July 6, 2022, we filed our answer to Aurobindo's counterclaims.

On September 7, 2022, the consolidated cases were reassigned to the Honorable Judge Gregory B. Williams. On September 30, 2022, we filed a stipulation and proposed order to stay the claims currently asserted against Teva and for Teva to be bound by the result of the litigation rendered against the remaining Defendants, which was ordered by the Court on October 4, 2022. On October 21, 2021, we filed complaints against Aurobindo, MSN and Zydus in the United States District Court for the District of Delaware alleging infringement of an additional Orange Book-listed patent covering NUPLAZID.

On April 19, 2021, a purported stockholder of us filed a putative securities class action complaint (captioned Marechal v. Acadia Pharmaceuticals, Inc., Case No. 21-cv-0762) in the U.S. District Court for the Southern District of California against us and certain of our current executive officers. The complaint generally alleges that defendants violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 by failing to disclose that the materials submitted in support of our sNDA seeking approval of pimavanserin for the treatment of hallucinations and delusions associated with dementia-related psychosis contained statistical and design deficiencies and that the FDA was unlikely to approve the sNDA in our current form. The complaint seeks unspecified monetary damages and other relief. On September 29, 2021, the Court issued an order designating lead plaintiff and lead counsel. On December 10, 2021, lead plaintiff filed an amended complaint. Defendants filed a motion to dismiss the amended complaint on February 15, 2022. Lead plaintiff filed an opposition to Defendants' motion to dismiss on April 18, 2022, and Defendants filed a reply on June 2, 2022. On September 27, 2022, the Court issued an order denying Defendants' motion to dismiss. Defendants filed their answer to the amended complaint on October 19, 2022, and filed a motion for reconsideration on October 25, 2022. On February 3, 2023, the Court issued an order denying the motion for reconsideration.

We currently believe that none of the foregoing claims or actions pending against us as of December 31, 2022 is likely to have, individually or in the aggregate, a material adverse effect on our business, liquidity, financial position, or results of operations. Given the unpredictability inherent in litigation, however, we cannot predict the outcome of these matters. We are unable to estimate possible losses or ranges of losses that may result from these matters, and therefore we have not accrued any amounts in connection with these matters other than attorneys' fees incurred to date.

Item 4. ***Mine Safety Disclosures.***

This item is not applicable.

PART II

Item 5. ***Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.***

Market Information

Our common stock is traded on the Nasdaq Global Select Market under the symbol "ACAD".

Holders

As of February 21, 2023, there were 162,230,184 shares of common stock outstanding held by approximately 32 stockholders of record. Many stockholders hold their shares in street name and thus, the actual number of beneficial owners of such shares is not known or included in the foregoing number; however, we believe that there are approximately 49,000 beneficial owners of our common stock.

Dividends

To date, we have not paid any cash dividends on our common stock, and we do not intend to pay any dividends in the foreseeable future. Instead, we intend to retain any future earnings to fund the development and growth of our business.

Securities Authorized for Issuance Under Equity Compensation Plans

The information required by this Item regarding equity compensation plans is incorporated herein by reference to Item 12 of Part III of this Annual Report on Form 10-K.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

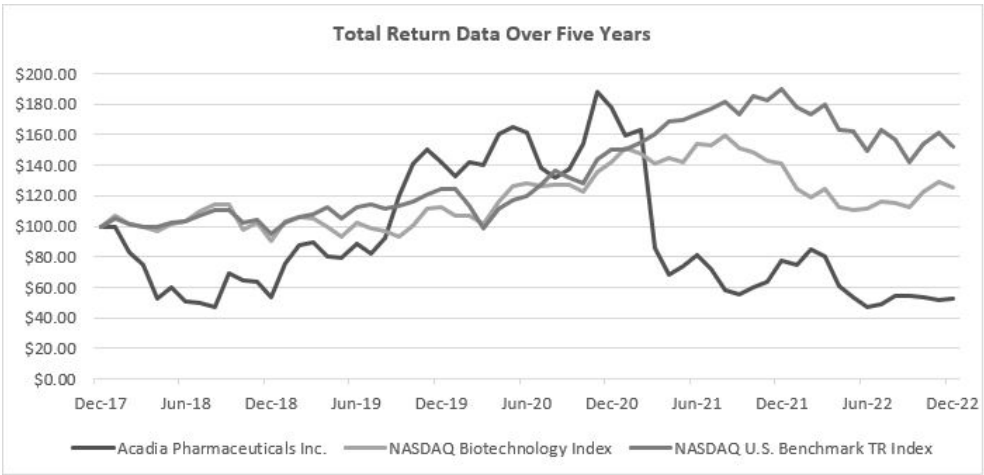
None.

Recent Sales of Unregistered Securities

Not applicable.

Performance Graph

The following graph shows a comparison of the total cumulative returns of an investment of $100 in cash from December 31, 2017 through December 31, 2022 in (i) our common stock, (ii) the Nasdaq Biotechnology Index, and (iii) the Nasdaq U.S. Benchmark TR Index. The comparisons in the graph are required by the SEC and are not intended to forecast or be indicative of the possible future performance of our common stock. The graph assumes that all dividends have been reinvested (to date, we have not declared any dividends).



Item 6. [Reserved]

Item 7. ***Management's Discussion and Analysis of Financial Condition and Results of Operations.***

The following discussion and analysis of our consolidated financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included elsewhere in this report. Past operating results are not necessarily indicative of results that may occur in future periods. This discussion contains forward-looking statements, which involve a number of risks and uncertainties. Such forward-looking statements include statements about the benefits to be derived from NUPLAZID® (pimavanserin), trofinetide and from our other drug candidates, the potential market opportunities for pimavanserin and our drug candidates, our strategy for the commercialization of NUPLAZID, our plans for exploring and developing pimavanserin for indications other than Parkinson's disease psychosis, trofinetide as a treatment for Rett syndrome, ACP-204 as a treatment for ADP and our ASO programs, our plans and timing with respect to seeking regulatory approvals, the potential commercialization of any of our drug candidates that receive regulatory approval, the progress, timing, results or implications of clinical trials and other development activities involving pimavanserin, trofinetide and our other drug candidates, our strategy for discovering, developing and, if approved, commercializing drug candidates, our existing and potential future collaborations, our estimates of future payments, revenues and profitability, our estimates regarding our capital requirements, future expenses and need for additional financing, the potential or expected impacts of geopolitical and macroeconomic developments, possible changes in legislation, and other statements that are not historical facts, including statements which may be preceded by the words "believes," "expects," "hopes," "may," "will," "plans," "intends," "estimates," "could," "should," "would," "continues," "seeks," "aims," "projects," "predicts," "pro forma," "anticipates," "potential" or similar words. In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this report, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain. For forward-looking statements, we claim the protection of the Private Securities Litigation Reform Act of 1995. Readers of this report are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date on which they are made. We undertake no obligation to update or revise publicly any forward-looking statements. Forward-looking statements are not guarantees of performance. Actual results or events may differ materially from those anticipated in our forward-looking statements as a result of various factors, including those set forth under the section captioned "Risk Factors" elsewhere in this report. Information in the following discussion for a yearly period means for the year ended December 31 of the indicated year.

Overview

Background

We are a biopharmaceutical company focused on the development and commercialization of innovative medicines that address unmet medical needs in CNS disorders and rare diseases. We have a portfolio of commercial stage products, in-development product opportunities, and research programs that are designed to address significant unmet needs in CNS disorders and rare diseases. In order to achieve significant long-term growth, we will develop our current portfolio, expand our pipeline of early and late-stage programs through strategic business development, and invest in targeted internal research efforts.

We developed and successfully commercialized NUPLAZID (pimavanserin), which was approved by the FDA, in April 2016 for the treatment of hallucinations and delusions associated with PDP, and is the first and only drug approved in the United States for this condition. NUPLAZID is a selective serotonin inverse agonist/antagonist, preferentially targeting 5-HT_{2A}receptors with no appreciable affinity for dopaminergic, histaminergic, or muscarinic receptors. Through this novel mechanism, NUPLAZID demonstrated significant efficacy in reducing the hallucinations and delusions associated with PDP without negatively impacting motor function in our Phase 3 pivotal trial. NUPLAZID has the potential to avoid many of the debilitating side effects of existing antipsychotics, none of which are approved by the FDA for the treatment of PDP. We hold worldwide commercialization rights to pimavanserin. NUPLAZID is available in 34 mg capsules and 10 mg tablets dosage forms.

We are currently in registration for trofinetide, an investigational new drug for the treatment of Rett syndrome, a rare genetic neurodevelopmental disorder. If approved, trofinetide would be the first and only drug approved in the United States for this condition. We acquired an exclusive North American license to develop and commercialize trofinetide for Rett syndrome and other indications from Neuren in August of 2018. We submitted to the FDA an NDA for trofinetide for the

treatment of Rett syndrome in July 2022 based on the positive results from our pivotal Phase 3 Lavender™ study which demonstrated statistically significant improvement over placebo for both co-primary endpoints as well as the key secondary endpoint. The FDA filed the NDA in September 2022 and assigned a PDUFA target action date of March 12, 2023.

Through its unique mechanism and the clinical studies conducted to date, we believe that pimavanserin has the potential to address important unmet medical needs in neurological and psychiatric disorders in addition to PDP. Today we are evaluating pimavanserin for the treatment of the negative symptoms of schizophrenia in a Phase 3 clinical development program. The negative symptoms of schizophrenia have been associated with poor long-term outcomes and disability even when the positive symptoms are well-controlled, and today there are no FDA-approved therapies. In the fourth quarter of 2019 we announced positive results from our pivotal ADVANCE study and in the third quarter of 2020, we initiated a second pivotal study, ADVANCE-2. The Phase 3 program is evaluating the efficacy of pimavanserin in patients with predominantly negative symptoms of schizophrenia who have achieved adequate control of positive symptoms with their existing antipsychotic treatment. We project completing the enrollment this year with top-line results in early 2024.

In addition, we recently announced that we are developing an internally discovered new molecule, ACP-204, which builds upon the learnings of pimavanserin in the treatment of neuropsychiatric symptoms, and is currently being evaluated in a Phase 1 clinical program. Upon completion of our Phase 1 work, we plan to initiate studies evaluating various doses of ACP-204 in patients with Alzheimer's disease psychosis. ACP-204 is a new chemical entity for which we hold the worldwide rights.

In January 2022, we entered into a license and collaboration agreement with Stoke to discover, develop and commercialize novel RNA-based medicines for the potential treatment of severe and rare genetic neurodevelopmental diseases of the CNS. The collaboration includes SYNGAP1 syndrome, Rett syndrome (MECP2), and an undisclosed neurodevelopmental target. For the SYNGAP1 program, the two companies will jointly share global research, development and commercialization responsibilities and share 50/50 in all worldwide costs and future profits. For the Rett syndrome (MECP2) and the undisclosed neurodevelopmental program, Stoke will lead research and pre-clinical development activities, while we will lead clinical development and commercialization activities.

We have incurred substantial operating losses since our inception due in large part to expenditures for our research and development activities. As of December 31, 2022, we had an accumulated deficit of $2.4 billion. Contingent on the level of business development activities we may complete as well as pipeline programs we may advance, we may continue to incur operating losses for the next few years as we incur significant research and development costs and costs for potential approval and commercialization of trofinetide for the treatment of Rett syndrome.

Impact of COVID-19 on our Business

As a result of the COVID-19 pandemic, there have been changes in the practice of medical care and medical education. For example, many health care providers initially expanded their utilization of telemedicine to conduct patient visits, and in many regions within the United States the ability of our commercial and medical field teams to call upon medical clinics, hospitals, long-term care facilities and skilled nursing facilities was restricted or converted to virtual access. We continue to access our customers both in person and virtually. Currently, health care providers are conducting patient visits in-person and through telemedicine and our sales force has been able to call upon medical clinics, hospitals, long-term care facilities and skilled nursing facilities either in person in accordance with applicable regulatory guidance and local policies or virtually. Most medical congresses, an important means for medical education, are being conducted both in person and virtually and enrollment in clinical trials is being assessed based on local COVID-19 conditions and regional regulation and public health guidance.

In an effort to protect the health and safety of our employees, our community, and our stakeholders, we have developed dynamic pandemic and workplace health policies applicable to all of our employees. These policies are localized based on current COVID-19 conditions, regulatory guidance, public health and scientific recommendations, and federal, state, and local laws. Some examples of these policies include a mandatory COVID-19 vaccination policy and increasing systemic precautions in our offices. In addition, we have expanded our wellness programs to support the overall health and wellbeing of our employees.

Since the beginning of the pandemic, we have been able to provide an uninterrupted supply of NUPLAZID to patients. We are monitoring our supply chain closely and do not anticipate disruptions in our ability to continue delivering NUPLAZID to patients.

Since the beginning of the pandemic the growth of sales of NUPLAZID have been negatively impacted by ongoing conditions related to the pandemic, including a reduction in patient office visits, continuing reduced occupancy rates at long-term care facilities, and reduced access to healthcare professionals. While we observed incremental improvements in some of these factors since 2021, their levels are still meaningfully below where they were pre-pandemic. It remains difficult to predict the duration of the pandemic's impact and the pace of recovery, and no assurances can be given that the pandemic will not continue to have additional negative impacts on our business, results of operations, financial condition and prospects.

Financial Operations Overview

Product and Collaborative Revenues

Product sales, net consist of sales of NUPLAZID, our first and only commercial product to date. The FDA approved NUPLAZID in April 2016 for the treatment of hallucinations and delusions associated with PDP, and we launched the product in the United States in May 2016.

Cost of Product Sales

Cost of product sales consists of third-party manufacturing costs, freight, and indirect overhead costs associated with sales of NUPLAZID. Cost of product sales may also include period costs related to certain inventory manufacturing services, excess or obsolete inventory adjustment charges, unabsorbed manufacturing and overhead costs, and manufacturing variances.

License Fees and Royalties

License fees and royalties consist of milestone payments expensed or capitalized and subsequently amortized under our 2006 license agreement with the Ipsen Group. License fees and royalties also include royalties of 2% due to the Ipsen Group based upon net sales of NUPLAZID. This obligation terminated in October 2021.

Research and Development Expenses

Our research and development expenses have consisted primarily of fees paid to external service providers, salaries and related personnel expenses, facilities and equipment expenses, and other costs incurred related to pre-commercial product candidates. We charge all research and development expenses to operations as incurred. Our research and development activities have focused on pimavanserin, trofinetide, ACP-204 and other early-stage programs. We currently are responsible for all costs incurred in the ongoing development of pimavanserin and we expect to continue to make substantial investments in clinical studies of pimavanserin for the treatment of the negative symptoms of schizophrenia. In connection with the FDA approval of NUPLAZID, we committed to conduct four post-marketing studies. The fourth commitment, a randomized, placebo-controlled eight-week study or studies in predominantly frail and elderly patients that would add to the NUPLAZID safety database by exposing an aggregate of at least 500 patients to NUPLAZID, remains ongoing. We are responsible for all costs incurred for these post-marketing studies. While we submitted an NDA to the FDA for trofinetide for the treatment of Rett syndrome in July 2022, at this time, due to the risks in the regulatory and approval processes, it is difficult to estimate the costs we might incur for any additionally required development activities to support the review and potential approval of the NDA. In addition, we expect to incur increased research and development expenses as a result of advancement of our early-stage development pipeline programs.

We use external service providers to manufacture our product candidates and for the majority of the services performed in connection with the preclinical and clinical development of pimavanserin, trofinetide, and our early-stage programs. Historically, we have used our internal research and development resources, including our employees and discovery infrastructure, across several projects and many of our costs have not been attributable to a specific project. Accordingly, we have not reported our internal research and development costs on a project basis. To the extent that external expenses are not attributable to a specific project, they are included in other early-stage programs.

The following table summarizes our research and development expenses for the years ended December 31, 2022, 2021, and 2020 (in thousands):

	Years Ended December 31,		
	2022	2021	2020
Costs of external service providers:			
NUPLAZID (pimavanserin)	$ 62,746	$ 73,696	$ 96,705
Trofinetide	62,300	39,814	47,614
Early stage programs	64,786	35,964	14,691
Upfront and milestone payments*	88,741	10,999	72,666
Subtotal	278,573	160,473	231,676
Internal costs	60,422	56,973	56,140
Stock-based compensation	22,580	21,969	31,314
Total research and development expenses	$ 361,575	$ 239,415	$ 319,130

* Includes upfront and milestone consideration as well as transaction costs associated with acquired in-process research and development.

Although NUPLAZID was approved by the FDA for the treatment of hallucinations and delusions associated with PDP, at this time, due to the risks inherent in regulatory requirements and clinical development, we are unable to estimate with certainty the costs we will incur for the ongoing or additional development of pimavanserin for the negative symptoms of schizophrenia, to support the potential approval and commercialization of trofinetide for the treatment of Rett syndrome, as well as the further development of our early-stage pipeline programs. Due to these same factors, we are unable to determine with any certainty the anticipated completion dates for our current research and development programs. Clinical development and regulatory approval timelines, probability of success, and development costs vary widely. While our current development efforts are primarily focused on advancing the development of pimavanserin for the treatment of the negative symptoms of schizophrenia and the development of ACP-204, we anticipate that we will make determinations as to which programs to pursue and how much funding to direct to each program on an ongoing basis in response to the scientific and clinical success of each product candidate, as well as an ongoing assessment of the commercial potential of each opportunity and our financial position. We cannot forecast with any degree of certainty which product opportunities will be subject to future collaborative or licensing arrangements, when such arrangements will be secured, if at all, and to what degree any such arrangements would affect our development plans and capital requirements. Similarly, we are unable to estimate with certainty the costs we will incur for post-marketing studies that we committed to conduct in connection with FDA approval of NUPLAZID.

We expect our research and development expenses continue to be substantial as we conduct studies pursuant to our post-marketing commitments and pursue the development of pimavanserin for the negative symptoms of schizophrenia and trofinetide for the treatment of Rett syndrome as well as the further development of ACP-204 and other early-stage pipeline programs. The lengthy process of completing clinical trials and supporting development activities and seeking regulatory approval for our product opportunities requires the expenditure of substantial resources. Any failure by us or delay in completing clinical trials, or in obtaining regulatory approvals, could cause our research and development expenses to increase and, in turn, have a material adverse effect on our results of operations.

Selling, General and Administrative Expenses

Our selling, general and administrative expenses consist of salaries and other related costs, including stock-based compensation expense, for our commercial personnel, including our specialty sales force, our medical education professionals, and our personnel serving in executive, finance, business development, and business operations functions. Also included in selling, general and administrative expenses are fees paid to external service providers to support our commercial activities associated with NUPLAZID, professional fees associated with legal and accounting services, costs associated with patents and patent applications for our intellectual property and charitable donations to independent charitable foundations that support Parkinson’s disease patients generally. Changes in selling, general and administrative expenses in future periods are subject to the evolving PDP market dynamics, the regulatory and approval processes of trofinetide and our further development of pimavanserin in additional indications other than PDP.

Critical Accounting Policies and Estimates

A summary of the significant accounting policies is provided in Note 2 to our Consolidated Financial Statements.

The preparation of financial statements in accordance with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. We evaluate our estimates on an ongoing basis. Our estimates are based on historical experience and on various other assumptions and factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the reported amounts of revenues and expenses that are not readily apparent from other sources. Actual results may differ from those estimates under different assumptions and conditions.

Management considers an accounting estimate to be critical if:

- it requires a significant level of estimation uncertainty; and
- changes in the estimate are reasonably likely to have a material effect on our financial condition or results of operations.

We believe the following critical accounting policies and estimates describe the more significant judgments and estimates used in the preparation of our consolidated financial statement.

Product Sales, Net

We sell our product through SPs and SDs. SPs dispense product to a patient based on the fulfillment of a prescription and SDs sell product to government facilities, long-term care pharmacies, or in-patient hospital pharmacies. Product shipping and handling costs are included in cost of product sales.

We recognize revenue from product sales at the net sales price (the “transaction price”) which includes estimates of variable consideration for which reserves are established and reflects each of these as either a reduction to the related account receivable or as an accrued liability, depending on how the amount payable is settled. Overall, these reserves reflect our best estimates of the amount of consideration to which we are entitled based on the terms of the contract. Actual amounts of consideration ultimately received may differ from our estimates. If actual results in the future vary from estimates, we may need to adjust our estimates, which would affect net revenue in the period of adjustment. The following sales discounts and allowances involve a substantial degree of judgment:

Rebates: Allowances for rebates include mandated discounts under the Medicaid Drug Rebate Program and the Medicare Part D prescription drug benefit. Rebates are amounts owed after the final dispensing of the product to a benefit plan participant and are based upon contractual agreements with, or statutory requirements pertaining to, Medicaid and Medicare benefit providers. The allowance for rebates is based on statutory discount rates and expected utilization. Our estimates for expected utilization of rebates is based on historical data received from the SPs and SDs since product launch. Rebates are generally invoiced and paid in arrears so that the accrual balance consists of an estimate of the amount expected to be incurred for the current quarter’s activity, plus an accrual balance for prior quarters’ unpaid rebates still estimated to be incurred. Allowances for rebates also include amounts due under the Inflation Reduction act of 2022 for Medicare Part D unit sales with applicable period AMP increases that outpace inflation over the benchmark period. The applicable period will be twelve months on October 1 of each year, with the initial applicable period beginning on October 1, 2022. The benchmark period AMP price is January 1, 2021 through September 30, 2021. Our estimates are based Medicare Part D sales as a percentage of gross sales and the rate AMP for the current period will be in excess the benchmark period. We regularly monitor our estimates and record adjustments when rebate trends, rebate programs and contract terms, legislative changes, or other significant events indicate that a change in the estimates is appropriate. To date, our estimates have not differed materially from actual rebates. However, subsequent changes in estimates may result in a material change in our accruals, which could also materially affect our balance sheet and results of operations.

Chargebacks: Chargebacks are discounts and fees that relate to contracts with government and other entities purchasing from the SDs at a discounted price. The SDs charge back to us the difference between the price initially paid by the SDs and the discounted price paid to the SDs by these entities. We also incur group purchasing organization fees for transactions through certain purchasing organizations. We estimate sales with these entities and accrue for anticipated chargebacks and organization fees, based on the applicable contractual terms. To date, our estimates have not differed

materially from the actual chargebacks and organization fees. However, subsequent changes in estimates may result in a material change in our accruals, which could also materially affect our balance sheet and results of operations.

Research and Development Accruals

We estimate certain costs and expenses and accrue for these liabilities as part of our process of preparing financial statements. Examples of areas in which subjective judgments may be required include, among other things, costs associated with services provided by contract organizations for preclinical development, manufacturing of our product candidates and clinical trials, and personnel related expenses. We accrue for costs incurred as the services are being provided by monitoring the status of the trial or services provided, and the invoices received from our external service providers. In the case of clinical trials, a portion of the estimated cost normally relates to the projected cost to treat a patient in the trials, and this cost is recognized based on the number of patients enrolled in the trial. Other indirect costs are generally recognized on a straight-line basis over the estimated period of the study. As actual costs become known to us, we adjust our accruals. To date, our estimates have not differed materially from the actual costs incurred. However, subsequent changes in estimates may result in a material change in our accruals, which could also materially affect our balance sheet and results of operations

Stock-Based Compensation

The fair value of each employee stock option and each employee stock purchase plan right granted is estimated on the grant date under the fair value method using the Black-Scholes valuation model, which requires us to make a number of assumptions including the estimated expected life of the award and related volatility. The fair value of restricted stock units is estimated based on the market price of our common stock on the date of grant. The estimated fair values of stock options, purchase plan rights, and regular restricted stock units are then expensed over the vesting period. For restricted stock units requiring satisfaction of both market and service conditions, the estimated fair values are generally expensed over the longest of the explicit, implicit and derived service periods. Performance-based stock awards vest upon the achievement of certain pre-defined company-specific performance-based criteria. Expense related to these performance-based stock awards is generally recognized ratably over the expected performance period once the pre-defined performance-based criteria for vesting becomes probable. See also Item 15 of Part IV, “Notes to Consolidated Financial Statements—Note 2—Summary of Significant Accounting Policies” for further discussion of our assumptions and estimates related to our stock-based compensation.

Results of Operations

Fluctuations in Operating Results

Our results of operations have fluctuated significantly from period to period in the past and are likely to continue to do so in the future. We anticipate that our quarterly and annual results of operations will be impacted for the foreseeable future by several factors, including the progress and timing of expenditures related to our commercial activities associated with NUPLAZID and the extent to which we generate revenue from product sales, our potential approval and commercialization of trofinetide for the treatment of Rett syndrome, our development of pimavanserin for the negative symptoms of schizophrenia, our further development of the early-stage pipeline programs and the progress and timing of expenditures related to studies of NUPLAZID in PDP pursuant to our post-marketing commitments. Further, we expect our sales allowances to vary from quarter to quarter due to fluctuations in our Medicare Part D Coverage Gap liability and the volume of purchases eligible for government mandated discounts and rebates, as well as changes in discount percentages that may be impacted by potential future price increases and other factors. We cannot predict with certainty what the full impact that macroeconomic developments, including the ongoing conflict between Ukraine and Russia and the COVID-19 pandemic, may have on our business, results of operations, financial condition and prospects. Due to these fluctuations, we believe that the period-to-period comparisons of our operating results are not a good indication of our future performance.

Comparison of the Years Ended December 31, 2022 and 2021

Product Sales, Net

Product sales, net, comprised of NUPLAZID, were $517.2 million and $484.1 million in 2022 and 2021, respectively. Product sales, net for the year ended December 31, 2022 increased as compared to the year ended December 31, 2021 primarily due to a higher average gross selling price of NUPLAZID in 2022 as compared to 2021.

The following table provides a summary of activity with respect to our sales allowances and accruals for the year ended December 31, 2022 (in thousands):

	Distribution Fees, Discounts & Chargebacks	Co-Pay Assistance	Rebates, Data Fees & Returns	Total
Balance at December 31, 2021	$ 8,467	$ (202)	$ 15,717	$ 23,982
Provision related to current period sales	80,836	3,087	51,872	135,795
Credits/payments for current period sales	(69,913)	(3,427)	(25,826)	(99,166)
Credits/payments for prior period sales	(8,467)	202	(15,717)	(23,982)
Balance at December 31, 2022	$ 10,923	$ (340)	$ 26,046	$ 36,629

Cost of Product Sales

Cost of product sales was $10.2 million and $10.8 million in 2022 and 2021, respectively, or approximately 2% of product sales, net in both years. The cost of product sales as a percentage of product sales, net stayed flat during 2022 as compared to 2021.

License Fees and Royalties

License fees and royalties were $0 and $8.3 million in 2022 and 2021, respectively, and in 2021 include royalties due to the Ipsen Group of two percent of net sales of NUPLAZID and amortization related to the milestone paid to the Ipsen Group upon FDA approval of NUPLAZID in 2016. The royalty obligation terminated in October 2021 which was the primary reason for the decrease in license fees and royalties during 2022 as compared to 2021.

Research and Development Expenses

Research and development expenses increased to $361.6 million in 2022, including $22.6 million in stock-based compensation, from $239.4 million in 2021, including $22.0 million in stock-based compensation. The increase in research and development expenses was mainly due to the $60 million upfront payment made to Stoke for the license and collaboration agreement and the $10 million milestone to Neuren in 2022 upon acceptance of the trofinetide NDA filing, as well as increased costs of our development activities for trofinetide, ACP-204 and other early-stage programs.

Selling, General and Administrative Expenses

Selling, general and administrative expenses decreased to $369.1 million in 2022, including $44.5 million in stock-based compensation expense, from $396.0 million in 2021, including $40.4 million in stock-based compensation expense. The decrease in selling, general and administrative expenses was primarily related to the continued reduction and optimization of commercial spend related to NUPLAZID, leading to a reduction in overall advertising and promotional costs, offset by investments in preparing for the launch of trofinetide.

Comparison of the Years Ended December 31, 2021 and 2020

Product Sales, Net

Product sales, net, comprised of NUPLAZID, were $484.1 million and $441.8 million in 2021 and 2020, respectively. Product sales, net for the year ended December 31, 2021 increased as compared to the year ended December 31, 2020 primarily due to a higher average gross selling price of NUPLAZID in 2021 as compared to 2020 as well as the growth in NUPLAZID unit sales of approximately 3% in 2021 as compared to 2020.

The following table provides a summary of activity with respect to our sales allowances and accruals for the year ended December 31, 2021 (in thousands):

	Distribution Fees, Discounts & Chargebacks	Co-Pay Assistance	Rebates, Data Fees & Returns	Total
Balance at December 31, 2020	$ 4,221	$ (152)	$ 14,116	$ 18,185
Provision related to current period sales	72,011	1,794	40,490	114,295
Credits/payments for current period sales	(63,544)	(1,996)	(24,773)	(90,313)
Credits/payments for prior period sales	(4,221)	152	(14,116)	(18,185)
Balance at December 31, 2021	$ 8,467	$ (202)	$ 15,717	$ 23,982

Cost of Product Sales

Cost of product sales was $10.8 million and $10.2 million in 2021 and 2020, respectively, or approximately 2% of product sales, net in both years. The cost of product sales as a percentage of product sales, net stayed flat during 2021 as compared to 2020.

License Fees and Royalties

License fees and royalties were $8.3 million and $10.3 million in 2021 and 2020, respectively, and include royalties due to the Ipsen Group of two percent of net sales of NUPLAZID and amortization related to the milestone paid to the Ipsen Group upon FDA approval of NUPLAZID in 2016. The royalty obligation terminated in October 2021 which was the primary reason for the decrease in license fees and royalties during 2021 as compared to 2020.

Research and Development Expenses

Research and development expenses decreased to $239.4 million in 2021, including $22.0 million in stock-based compensation expense, from $319.1 million in 2020, including $31.3 million in stock-based compensation expense. The decrease in research and development expenses was due to a decrease of $71.2 million in external costs and a decrease of $8.4 million in personnel and related costs resulting from attrition. The decrease in external costs was primarily due to the $52.8 million in upfront consideration and transaction costs paid for the acquisition of CerSci and $10.0 million upfront payment to Vanderbilt University for the M1 PAM program in 2020.

Selling, General and Administrative Expenses

Selling, general and administrative expenses increased to $396.0 million in 2021, including $40.4 million in stock-based compensation expense, from $388.7 million in 2020, including $50.5 million in stock-based compensation expense. The increase in selling, general and administrative expenses was primarily due to an increase of $16.4 million in personnel and related costs, partially offset by a decrease of $10.1 million in stock compensation expense.

Liquidity and Capital Resources

We have funded our operations primarily through sales of our equity securities, payments received under our collaboration agreements, debt financings, interest income, and, since 2016, with revenues from sales of NUPLAZID. We anticipate that the level of cash used in our operations will fluctuate in future periods depending on the levels of spend for our ongoing and planned commercial activities for NUPLAZID, our potential approval and commercialization of trofinetide for the treatment of Rett syndrome, our ongoing and planned development activities for pimavanserin for the negative symptoms of schizophrenia, studies to be conducted pursuant to our post-marketing commitments, our ongoing and planned development activities for the early-stage pipeline programs and any potential future business development activities. We expect that our cash, cash equivalents, and investment securities will be sufficient to fund our planned operations through at least the next 12 months.

We may require significant additional financing in the future to fund our operations. Our future capital requirements will depend on, and could increase significantly as a result of, many factors, including:

- the progress in, and the costs of, our ongoing and planned development activities for pimavanserin, post-marketing studies for NUPLAZID to be conducted over the next several years, and ongoing and planned commercial activities for NUPLAZID;
- the costs of our development activities for trofinetide for the treatment of Rett syndrome;
- the costs of our development activities for ACP-204 and our other early-stage pipeline programs;
- the costs of commercializing NUPLAZID, including the maintenance and development of our sales and marketing capabilities;
- the costs of establishing, or contracting for, sales and marketing capabilities for other product candidates;
- the amount of U.S. product sales from NUPLAZID;
- the costs of preparing applications for regulatory approvals for NUPLAZID in additional indications other than PDP and for other product candidates, as well as the costs required to support review of such applications;
- the costs of manufacturing and distributing NUPLAZID for commercial use in the U.S.;
- the costs of manufacturing and distributing trofinetide for potential commercial use in the U.S.;
- our ability to obtain regulatory approval for, and subsequently generate product sales from, pimavanserin for the negative symptoms of schizophrenia, from trofinetide for the treatment of Rett syndrome, from ACP-204 and from our other product candidates;
- the costs of acquiring additional product candidates or research and development programs;
- the scope, prioritization and number of our research and development programs;
- the ability of our collaborators and us to reach the milestones and other events or developments triggering payments under our collaboration or license agreements, or our collaborators' ability to make payments under these agreements;
- our ability to enter into new collaboration and license agreements;
- the extent to which we are obligated to reimburse collaborators or collaborators are obligated to reimburse us for costs under collaboration agreements;
- the costs involved in filing, prosecuting, enforcing, and defending patent claims and other intellectual property rights;
- the costs of maintaining or securing manufacturing arrangements for clinical or commercial production of pimavanserin, trofinetide or other product candidates; and
- the costs associated with litigation, including the costs incurred in defending against any product liability claims that may be brought against us related to NUPLAZID.

Unless and until we can generate significant cash from our operations, we expect to satisfy our future cash needs through our existing cash, cash equivalents and investment securities, public or private sales of our securities, debt financings, or strategic collaborations. In the past, periods of turmoil and volatility in the financial markets have adversely affected the market capitalizations of many biotechnology companies, and generally made equity and debt financing more difficult to obtain. For example, due to macroeconomic developments, including the Ukraine-Russia conflict, the COVID-19 pandemic and actions taken to slow its spread, the global credit and financial markets have experienced extreme volatility and disruptions, including diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. These events, coupled with other factors, may limit our access to additional financing in the future. We cannot be certain that additional funding will be available to us on acceptable terms, or at all. If adequate funds are not available when needed, we will be required to delay, reduce the scope of, or eliminate one or more of our research or development programs or our commercialization efforts. We also may be required to relinquish greater or all rights to product candidates at an earlier stage of development or on less favorable terms than we would otherwise choose. Additional funding, if obtained, may significantly dilute existing stockholders and could negatively impact the price of our stock.

We have invested a substantial portion of our available cash in money market funds, U.S. treasury notes, and high quality, marketable debt instruments of corporations and government sponsored enterprises in accordance with our investment policy. Our investment policy defines allowable investments and establishes guidelines relating to credit quality, diversification, and maturities of our investments to preserve principal and maintain liquidity. All investment securities have a credit rating of at least Aa3/AA- or better, or P-1/A-1 or better, as determined by Moody's Investors Service or Standard & Poor's. Our investment portfolio has not been adversely impacted by the disruptions in the credit markets that have occurred in the past. However, if there are future disruptions in the credit markets, there can be no assurance that our investment portfolio will not be adversely affected.

Material Cash Requirements

Our material cash requirements in the short and long term consist of the operational, manufacturing, and capital expenditures, a portion of which contain contractual or other obligations. We plan to fund our material cash requirements with our current financial resources together with our anticipated receipts from product sales. On a long-term basis, we manage future cash requirements relative to our long-term business plans.

Our primary uses of cash and operating expenses relate to paying employees and consultants, administering clinical trials, marketing our products, and providing technology and facility infrastructure to support our operations. We also make investments in our office and laboratory facilities to enable continued expansion of our business.

The following is a summary of our long-term contractual obligations as of December 31, 2022 (in thousands):

	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Operating leases	$ 73,391	$ 9,562	$ 18,304	$ 16,838	$ 28,687
Other long-term contractual obligations	2,000	1,000	1,000	—	—
Total	$ 75,391	$ 10,562	$ 19,304	$ 16,838	$ 28,687

In addition to operating leases, we enter into certain other long-term commitments for goods and services that are outstanding for periods greater than one year. To the extent these long-term commitments are noncancelable, they are reflected in the above table. We also enter into short-term agreements with various vendors and suppliers of goods and services in the normal course of operations through purchase orders or other documentation, or that are undocumented except for an invoice. Such short-term agreements are generally outstanding for periods less than a year and are settled by cash payments upon delivery of goods and services. The nature of the work being conducted under these agreements is such that, in most cases, the services may be stopped on short notice. In such event, we would not be liable for the full amount of the agreement and therefore these amounts are not reflected in the above table.

We have entered into various collaboration, licensing and merger agreements which generally include upfront license fees, development and commercial milestone payments upon achievement of certain clinical and commercial development and annual net sales milestones, as well as royalties calculated as a percentage of product revenues, with rates that vary by agreement. As of December 31, 2022, we may be required to make milestone payments up to $1.6 billion in the aggregate. These payments are contingent upon achieving future development, regulatory and commercial milestones. We are also required to make royalty payments in connection with the sale of products developed under those agreements. We have not included any such milestone or royalty payments in the above table. In January 2022, we entered into a license and collaboration agreement with Stoke to discover, develop and commercialize novel RNA-based medicines for the potential treatment of severe and rare genetic neurodevelopmental diseases of the CNS. Under the terms of the agreement, we may be required to pay up to $907.5 million in milestone payments based on the achievement of certain clinical and commercial development and annual net sales milestones.

Cash Flows

At December 31, 2022, we had $416.8 million in cash, cash equivalents, and investment securities, compared to $520.7 million at December 31, 2021. This $103.9 million decrease in cash, cash equivalents, and investment securities during 2022 was primarily due to net cash used in operating activities, offset in part by cash proceeds from the exercise of employee stock options.

Net cash used in operating activities decreased to $114.0 million in 2022 compared to $125.7 million in 2021 and $136.2 million in 2020. The decrease in net cash used in operating activities in 2022 relative to 2021 was primarily due to an increase in our net revenues as well as decreased sales and marketing costs, partially offset by increased research and development costs. The decrease in net cash used in operating activities in 2021 relative to 2020 was due to an increase in our net revenues as well as decreased research and development costs and sales and marketing costs.

Net cash provided by investing activities totaled $73.2 million in 2022 compared to net cash used in investing activities of $71.1 million in 2021 and net cash provided by investing activities of $192.5 million in 2020. The increase in net cash provided by investing activities in 2022 compared to 2021 was primarily due to increased net maturities of investment securities. The increase in net cash used in investing activities in 2021 compared to 2020 was primarily due to increased net purchases of investment securities.

Net cash provided by financing activities decreased to $8.2 million in 2022 compared to $18.2 million in 2021 and $81.0 million in 2020. The decrease in net cash provided by financing activities in 2022 relative to 2021 and in 2021 relative to 2020 was primarily due to a decrease in proceeds resulting from the exercise of employee stock options.

Off-Balance Sheet Arrangements

To date, we have not had any relationships with unconsolidated entities or financial partnerships, such as entities referred to as structured finance or special purpose entities, which are established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. As such, we are not materially exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in these relationships.

Recent Accounting Pronouncements

See Item 15 of Part IV, “Notes to Consolidated Financial Statements—Note 2—Summary of Significant Accounting Policies.”

Item 7A. *Quantitative and Qualitative Disclosures About Market Risk*

Interest Rate Risk

We invest our excess cash in investment-grade, interest-bearing securities. The primary objective of our investment activities is to preserve principal and liquidity. To achieve this objective, we invest in money market funds. U.S. treasury notes, and high quality marketable debt instruments of corporations and government sponsored enterprises with contractual maturity dates of generally less than one year. All investment securities have a credit rating of at least Aa3/AA- or better, or P-1/A-1 or better, as determined by Moody’s Investors Service or Standard & Poor’s. We do not have any direct investments in auction-rate securities or securities that are collateralized by assets that include mortgages or subprime debt. If a 10 percent change in interest rates were to have occurred on December 31, 2022 and 2021, this change would not have had a material effect on the fair value of our investment portfolio as of each such date. Although we are seeing, and expect to continue to see, increased interest rates, due to our investment in investment-grade, interest-bearing securities, as of the date of this Annual Report on Form 10-K, we do not expect anticipated changes in interest rates to have a material effect on our interest rate risk in future reporting periods.

Item 8. *Financial Statements and Supplementary Data.*

The consolidated financial statements required pursuant to this item are included in Item 15 of this report and are presented beginning on page F-1.

Item 9. *Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.*

None.

Item 9A. ***Controls and Procedures.***

Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic and current reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer (our principal executive officer and principal financial officer, respectively), as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable and not absolute assurance of achieving the desired control objectives. In reaching a reasonable level of assurance, management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. In addition, the design of any system of controls is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

As of December 31, 2022, we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2022.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision and with the participation of, our Chief Executive Officer and Chief Financial Officer (our principal executive officer and principal financial officer, respectively), and effected by our board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

As of December 31, 2022, our management assessed the effectiveness of our internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act of 1934, as amended, using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013). Based on this assessment, management, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, concluded that, as of December 31, 2022, our internal control over financial reporting was effective based on those criteria.

The effectiveness of our internal control over financial reporting as of December 31, 2022 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in its report, which is included herein.

Changes in Internal Control Over Financial Reporting

An evaluation was also performed under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer(our principal executive officer and principal financial officer, respectively), of any changes in our internal control over financial reporting that occurred during our last fiscal quarter and that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. That evaluation did not identify any change in our internal control over financial reporting that occurred during our latest fiscal quarter and that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of
Acadia Pharmaceuticals Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Acadia Pharmaceuticals Inc.'s internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Acadia Pharmaceuticals Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of Acadia Pharmaceuticals Inc. as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive loss, cash flows and stockholders' equity for each of the three years in the period ended December 31, 2022, and the related notes and the financial statement schedule listed in the Index at Item 15(a)2 and our report dated February 27, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

San Diego, California
February 27, 2023

Item 9B. ***Other Information***

None.

Item 9C. ***Disclosure Regarding Foreign Jurisdictions that Prevent Inspections***

Not applicable.

PART III

Item 10. ***Directors, Executive Officers and Corporate Governance*****.**

The information required by this Item and not set forth below will be set forth in the section headed "—Election of Directors," "Information Regarding the Board of Directors and Corporate Governance" and "Delinquent Section 16(a) Reports," if any, in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders to be filed with the SEC by May 1, 2023 (our "Proxy Statement") and is incorporated in this report by reference.

We have adopted a code of ethics for directors, officers (including our principal executive officer, principal financial officer and principal accounting officer) and employees, known as the Code of Business Conduct and Ethics. The Code of Business Conduct and Ethics is available on our website at *http://www.acadia.com* under the Corporate Governance section of our Investors page. We will promptly disclose on our website (i) the nature of any amendment to the policy that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions and (ii) the nature of any waiver, including an implicit waiver, from a provision of the policy that is granted to one of these specified individuals, the name of such person who is granted the waiver and the date of the waiver. Stockholders may request a free copy of the Code of Business Conduct and Ethics from our compliance department c/o Acadia Pharmaceuticals Inc., 12830 El Camino Real, Suite 400, San Diego, CA 92130.

Item 11. ***Executive Compensation*****.**

The information required by this Item will be set forth in the section headed "Executive Compensation" in our Proxy Statement and is incorporated in this report by reference.

Item 12. ***Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters*****.**

The information required by this Item will be set forth in the section headed "Security Ownership of Certain Beneficial Owners and Management" in our Proxy Statement and is incorporated in this report by reference.

Information regarding our equity compensation plans will be set forth in the section headed "Executive Compensation" in our Proxy Statement and is incorporated in this report by reference.

Item 13. ***Certain Relationships and Related Transactions, and Director Independence*****.**

The information required by this Item will be set forth in the section headed "Transactions With Related Persons" in our Proxy Statement and is incorporated in this report by reference.

Item 14. ***Principal Accountant Fees and Services*****.**

The information required by this Item will be set forth in the section headed "—Ratification of Selection of Independent Registered Public Accounting Firm" in our Proxy Statement and is incorporated in this report by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a) Documents filed as part of this report.

1. The following financial statements of Acadia Pharmaceuticals Inc. and Report of Ernst & Young LLP, Independent Registered Public Accounting Firm, are included in this report:

2. List of financial statement schedules:

Schedule II – Valuation and Qualifying Accounts

Schedules not listed above have been omitted because they are not applicable or the required information is shown in the financial statements or notes thereto.

3. List of Exhibits required by Item 601 of Regulation S-K. See part (b) below.

(b) Exhibits.

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation, as Amended (incorporated by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q, filed August 6, 2015).
3.2	Certificate of Amendment of Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.2 to the Registrant's Annual Report on Form 10-K, filed February 25, 2021).
3.3	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed September 12, 2013).
4.1	Form of common stock certificate of the Registrant (incorporated by reference to Exhibit 4.1 to Registration Statement No. 333-52492).
4.2	Form of Amended and Restated Warrant to Purchase Common Stock (incorporated by reference to Exhibit 4.2 to the Registrant's Annual Report on Form 10-K, filed February 26, 2019).
4.3	Description of the Registrant's Common Stock (incorporated by reference to Exhibit 4.3 to the Registrant's Annual Report on Form 10-K, filed February 27, 2020).
10.1[a]	Form of Indemnity Agreement for directors and officers (incorporated by reference to Exhibit 10.1 to Registration Statement No. 333-113137).
10.2[a]	2004 Equity Incentive Plan and forms of agreement thereunder (incorporated by reference to Exhibit 10.3 to Registration Statement No. 333-113137).
10.3[a]	2010 Equity Incentive Plan, as amended (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-K, filed August 9, 2022).
10.4[a]	Forms of agreement under the 2010 Equity Incentive Plan (incorporated by reference to Exhibit 10.4 to the Registrant's Annual Report on Form 10-K, filed February 29, 2016).

10.5[a]	2004 Employee Stock Purchase Plan, as amended (incorporated by reference to Exhibit 99.1 to the Registrant's Current Report on Form 8-K, filed June 29, 2020).
10.6[a]	Offerings under the 2004 Employee Stock Purchase Plan, as amended (incorporated by reference to Exhibit 10.6 to the Registrant's Annual Report on Form 10-K, filed February 28, 2017).
10.7[a]	Employment Agreement, dated September 1, 2015, between the Registrant and Stephen Davis (incorporated by reference to Exhibit 99.1 to the Registrant's Current Report on Form 8-K, filed September 3, 2015).
10.8[a]	Employment Offer Letter, dated October 28, 2015, between the Registrant and Srdjan Stankovic (incorporated by reference to Exhibit 10.10 to the Registrant's Annual Report on Form 10-K, filed February 29, 2016).
10.9[a]	Employment Offer Letter, dated June 26, 2018, between the Registrant and Brendan Teehan (incorporated by reference to Exhibit 10.9 to the Registrant's Annual Report on Form 10-K, filed March 1, 2022).
10.10[a]	Employment Offer Letter, dated July 2, 2018, between the Registrant and Austin D. Kim (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q, filed November 6, 2018).
10.11[a]	Employment Offer Letter, dated April 28, 2020, between the Registrant and Mark Schneyer (incorporated by reference to Exhibit 10.11 to the Registrant's Annual Report on Form 10-K, filed March 1, 2022).
10.12[a]	Employment Offer Letter, dated December 19, 2022, between the Registrant and Doug Williamson.
10.13[a]	Non-Employee Director Compensation Policy (incorporated by reference to Exhibit 99.2 to the Registrant's Current Report on Form 8-K, filed June 29, 2020).
10.14[a]	Management Severance Benefit Plan (incorporated by reference to Exhibit 99.1 to the Registrant's Current Report on Form 8-K, filed December 15, 2015).
10.15[a]	Amended and Restated Change in Control Severance Benefit Plan (incorporated by reference to Exhibit 99.2 to the Registrant's Current Report on Form 8-K, filed December 15, 2015).
10.16[b]	Master Manufacturing Services Agreement and Product Agreement, dated August 3, 2015, by and between the Registrant and Patheon Pharmaceuticals Inc. (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q, filed November 5, 2015).
10.17[b]	First Amendment to Product Agreement, dated April 25, 2016, by and between the Registrant and Patheon Pharmaceuticals Inc. (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q, filed August 4, 2016).
10.18[b]	Second Amendment to Product Agreement, dated October 6, 2016, by and between the Registrant and Patheon Pharmaceuticals Inc. (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q, filed November 7, 2016).
10.19[b]	Third Amendment to Product Agreement, dated December 11, 2017, by and between the Registrant and Patheon Pharmaceuticals Inc (incorporated by reference to Exhibit 10.19 to the Registrant's Annual Report on Form 10-K, filed February 27, 2018.
10.20[c]	Master Services Agreement, dated December 15, 2016, by and between Acadia Pharmaceuticals GmbH and Siegfried AG and its affiliates, and Attachment #1, Attachment #2 and Attachment #3 (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q, filed November 3, 2022).
10.21[c]	Change Order #1 to Master Services Agreement Attachment #1, dated January 3, 2017, by and between Acadia Pharmaceuticals GmbH and Siegfried AG (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q, filed November 3, 2022).
10.22[c]	Attachment #4, Attachment #5 and Attachment #6, each dated May 12, 2017, to the Master Services Agreement, dated December 15, 2016, by and between Acadia Pharmaceuticals GmbH and Siegfried AG and its affiliates (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q, filed November 3, 2022).
10.23[c]	Attachment #7, dated September 30, 2020, to the Master Services Agreement, dated December 15, 2016, by and between Acadia Pharmaceuticals GmbH and Siegfried AG and its affiliates (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly report on Form 10-Q, filed November 4, 2020).

10.24	Registration Rights Agreement, dated January 6, 2016, between the Registrant and the investors listed on Schedule A thereto (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed January 7, 2016).
10.25	Assignment of Brann Intellectual Property Rights, dated January 29, 1997, by Mark R. Brann in favor of the Registrant (incorporated by reference to Exhibit 10.17 to Registration Statement No. 333-52492).
10.26[b]	License Agreement, dated August 6, 2018, by and between the Registrant and Neuren Pharmaceuticals Ltd. (incorporated by reference to Exhibit 10.26 to the Registrant's Annual Report on Form 10-K, filed February 27, 2019).
10.27[b]	Lease Agreement, effective October 4, 2018, by and between the Registrant and Kilroy Realty, L.P. (incorporated by reference to Exhibit 10.27 to the Registrant's Annual Report on Form 10-K, filed February 27, 2019).
10.28[c]	First Amendment to Office Lease, dated December 23, 2019, between the Registrant and Kilroy Realty, L.P. (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly report on Form 10-Q, filed May 8, 2020).
10.29[c]	Second Amendment to Office Lease, dated March 12, 2020, between the Registrant and Kilroy Realty, L.P. (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly report on Form 10-Q, filed May 8, 2020).
10.30[a]	Acadia Pharmaceuticals Inc. 2023 Inducement Plan (incorporated by reference to Exhibit 99.1 to Registration Statement No. 333-269611).
10.31[a]	Forms of Stock Option Grant Notice and Stock Option Agreement under Acadia Pharmaceuticals Inc. 2023 Inducement Plan (incorporated by reference to Exhibit 99.2 to Registration Statement No. 333-269611).
10.32[a]	Forms of Restricted Stock Unit Grant Notice and Restricted Stock Unit Agreement under Acadia Pharmaceuticals Inc. 2023 Inducement Plan (incorporated by reference to Exhibit 99.3 to Registration Statement No. 333-269611).
10.33[c]	Lease Agreement, effective May 15, 2018, by and between the Registrant and Boston Properties Limited Partnership.
21.1	List of subsidiaries of the Registrant.
23.1	Consent of Independent Registered Public Accounting Firm.
24.1	Power of Attorney (see signature page hereto).
31.1	Certification of Stephen Davis, Chief Executive Officer, pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Mark Schneyer, Executive Vice President and Chief Financial Officer, pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of Stephen Davis, Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Mark Schneyer, Executive Vice President and Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	The following financial statements from this Annual Report, formatted in iXBRL (Inline Extensible Business Reporting Language), are filed herewith: (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Loss, (iv) Consolidated Statements of Cash Flows, (v) Consolidated Statements of Stockholders' Equity, and (vi) Notes to Consolidated Financial Statements.
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

[a] Indicates management contract or compensatory plan or arrangement.

[b] We have requested or received confidential treatment of certain portions of this agreement, which have been omitted and filed separately with the SEC pursuant to Rule 406 under the Securities Act of 1933, as amended, or Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

[c] Pursuant to Item 601(b)(10) of Regulation S-K, certain portions of this exhibit have been omitted (indicated by "[***]" or "[…***…]") because the Company has determined that the information is both not material and is the type that the Company treats as private or confidential.

Item 16. ***Form 10-K Summary***

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities and Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ACADIA PHARMACEUTICALS INC.

Date: February 27, 2023

/s/ STEPHEN R. DAVIS

Stephen R. Davis
Chief Executive Officer
(on behalf of the registrant and as the registrant's Principal Executive Officer)

KNOW ALL PERSONS BY THESE PRESENTS, that each individual whose signature appears below constitutes and appoints Stephen R. Davis his true and lawful attorney-in-fact and agent, with full power of substitution, for him and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities and Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Stephen R. Davis **Stephen R. Davis**	Chief Executive Officer and Director (Principal Executive Officer)	February 27, 2023
/s/ Mark C. Schneyer **Mark C. Schneyer**	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 27, 2023
/s/ James K. Kihara **James K. Kihara**	Vice President, Chief Accounting Officer and Controller (Principal Accounting Officer)	February 27, 2023
/s/ Stephen R. Biggar **Stephen R. Biggar**	Chairman of the Board	February 27, 2023
/s/ Julian C. Baker **Julian C. Baker**	Director	February 27, 2023
/s/ Laura A. Brege **Laura A. Brege**	Director	February 27, 2023
/s/ James M. Daly **James M. Daly**	Director	February 27, 2023
/s/ Elizabeth A. Garofalo **Elizabeth A. Garofalo**	Director	February 27, 2023
/s/ Edmund P. Harrigan **Edmund P. Harrigan**	Director	February 27, 2023
/s/ Adora Ndu **Adora Ndu**	Director	February 27, 2023
/s/ Daniel B. Soland **Daniel B. Soland**	Director	February 27, 2023

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of
Acadia Pharmaceuticals Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Acadia Pharmaceuticals Inc. (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive loss, cash flows and stockholders' equity for each of the three years in the period ended December 31, 2022, and the related notes and the financial statement schedule listed in the Index at Item 15(a)2 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 27, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Allowance for Medicare Part D rebates

Description of the Matter

As described in Note 2 to the consolidated financial statements under the caption “Revenue Recognition”, the Company establishes provisions for sales rebates in the same period the related product is sold. At December 31, 2022, the Company had $24.2 million in sales rebates accrued, which includes rebates provided for Medicare Part D drug plan. In order to establish these sales rebate accruals, the Company estimated its rebates based upon the identification of the products subject to a rebate, the applicable price, rebate terms and the estimated lag time between the sale and payment of the rebate.

Auditing the Medicare Part D sales rebate accruals was complex and required significant auditor judgment because the accruals consider multiple subjective estimates and assumptions. These estimates and assumptions included the estimated inventory in the distribution channel, which impacts the lag time between the sale to the customer and payment of the rebate, and the final payer related to product sales, which impacts the applicable price and rebate terms. In deriving these estimates and assumptions, the Company used both internal and external sources of information to estimate product in the distribution channels, payer mix, prescription volumes and historical experience. Management supplemented its historical data analysis with qualitative adjustments based upon changes in rebate trends, rebate programs and contract terms, legislative changes, or other significant events which indicate a change in the reserve is appropriate.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls over the Company’s sales rebate accruals for Medicare Part D rebates. This included testing controls over management’s review of the significant assumptions described above and inputs into the rebate calculation. For example, we tested controls over actual sales and the accuracy of forecasting expected utilization and payer mix. The testing was inclusive of management’s controls to evaluate the accuracy of its reserve judgments to actual rebates paid, rebate validation and processing, and controls to ensure that the data used to evaluate and support the significant assumptions was complete, accurate and, where applicable, verified to external data sources.

To test the sales rebate accruals for Medicare Part D, our audit procedures included, among others, understanding and evaluating the significant assumptions and underlying data used in management’s calculations. Our testing of significant assumptions included a lookback analysis to evaluate the historical accuracy of management’s estimates by comparing actual activity to previous estimates and performed sensitivity analyses over the subjective assumptions to evaluate the completeness of the reserves. As a part of our procedures, we evaluated the reasonableness of the Company’s assumptions considering recent sales trends and regulatory factors.

/s/ Ernst & Young LLP

We have served as the Company’s auditor since 2015.

San Diego, California
February 27, 2023

ACADIA PHARMACEUTICALS INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share amounts)

	December 31,	
	2022	2021
Assets		
Cash and cash equivalents	$ 114,846	$ 147,435
Investment securities, available-for-sale	301,977	373,271
Accounts receivable, net	62,195	64,366
Interest and other receivables	885	978
Inventory	6,636	7,881
Prepaid expenses	21,398	23,892
Total current assets	507,937	617,823
Property and equipment, net	6,021	8,047
Operating lease right-of-use assets	55,573	58,268
Restricted cash	5,770	5,770
Long-term inventory	4,924	6,217
Other assets	7,587	3,997
Total assets	$ 587,812	$ 700,122
Liabilities and stockholders' equity		
Accounts payable	$ 12,746	$ 6,876
Accrued liabilities	112,884	89,192
Total current liabilities	125,630	96,068
Operating lease liabilities	52,695	56,126
Other long-term liabilities	9,074	7,034
Total liabilities	187,399	159,228
Commitments and contingencies (Note 9)		
Stockholders' equity:		
Preferred stock, $0.0001 par value; 5,000,000 shares authorized at December 31, 2022 and 2021; no shares issued and outstanding at December 31, 2022 and 2021	—	—
Common stock, $0.0001 par value; 225,000,000 shares authorized at December 31, 2022 and 2021; 162,064,872 shares and 161,012,695 shares issued and outstanding at December 31, 2022 and 2021, respectively	16	16
Additional paid-in capital	2,770,923	2,694,646
Accumulated deficit	(2,369,551)	(2,153,576)
Accumulated other comprehensive loss	(975)	(192)
Total stockholders' equity	400,413	540,894
Total liabilities and stockholders' equity	$ 587,812	$ 700,122

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

ACADIA PHARMACEUTICALS INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share amounts)

	Years Ended December 31,		
	2022	2021	2020
Revenues			
Product sales, net	$ 517,235	$ 484,145	$ 441,755
Total revenues	517,235	484,145	441,755
Operating expenses			
Cost of product sales	10,166	10,843	10,211
License fees and royalties	—	8,298	10,339
Research and development	361,575	239,415	319,130
Selling, general and administrative	369,090	396,028	388,661
Total operating expenses	740,831	654,584	728,341
Loss from operations	(223,596)	(170,439)	(286,586)
Interest income, net	6,610	591	6,610
Other income (expense)	3,542	2,329	(997)
Loss before income taxes	(213,444)	(167,519)	(280,973)
Income tax expense	2,531	351	611
Net loss	$ (215,975)	$ (167,870)	$ (281,584)
Net loss per common share, basic and diluted	$ (1.34)	$ (1.05)	$ (1.79)
Weighted average common shares outstanding, basic and diluted	161,683	160,493	157,331

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

ACADIA PHARMACEUTICALS INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(in thousands)

	Years Ended December 31,		
	2022	2021	2020
Net loss	$ (215,975)	$ (167,870)	$ (281,584)
Other comprehensive (loss) income :			
Unrealized loss on investment securities	(789)	(235)	(253)
Foreign currency translation adjustments	6	7	(8)
Comprehensive loss	$ (216,758)	$ (168,098)	$ (281,845)

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

ACADIA PHARMACEUTICALS INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Years Ended December 31,		
	2022	2021	2020
Cash flows from operating activities			
Net loss	$ (215,975)	$ (167,870)	$ (281,584)
Adjustments to reconcile net loss to net cash used in operating activities:			
Stock-based compensation	68,201	63,615	84,422
Amortization of premiums and accretion of discounts on investment securities	(2,736)	2,404	1,470
Amortization of intangible assets	—	1,108	1,477
(Gain) loss on strategic investment	(3,542)	(2,329)	997
Depreciation	2,026	2,236	1,455
Loss on disposal of assets	—	—	281
Non-cash in-process research and development	—	—	44,280
Changes in operating assets and liabilities:			
Accounts receivable, net	2,171	(16,119)	(12,466)
Interest and other receivables	93	1,057	58
Inventory	2,415	(4,210)	(3,320)
Prepaid expenses and other current assets	2,494	1,802	(7,088)
Operating lease right-of-use assets	6,566	6,287	4,280
Other assets	(48)	10	182
Accounts payable	5,870	(1,617)	1,271
Accrued liabilities	24,306	(8,455)	27,569
Operating lease liabilities	(7,916)	(5,433)	(1,769)
Long-term liabilities	2,040	1,854	2,319
Net cash used in operating activities	(114,035)	(125,660)	(136,166)
Cash flows from investing activities			
Purchases of investment securities	(363,174)	(492,797)	(339,908)
Maturities of investment securities	436,415	422,817	540,004
Net purchases of property and equipment	—	(1,122)	(7,587)
Net cash provided by (used in) investing activities	73,241	(71,102)	192,509
Cash flows from financing activities			
Proceeds from issuance of common stock, net of issuance costs	8,199	18,162	80,996
Net cash provided by financing activities	8,199	18,162	80,996
Effect of exchange rate changes on cash	6	7	(8)
Net (decrease) increase in cash, cash equivalents and restricted cash	(32,589)	(178,593)	137,331
Cash, cash equivalents and restricted cash			
Beginning of year	153,205	331,798	194,467
End of year	$ 120,616	$ 153,205	$ 331,798
Supplemental disclosure of cash flow information:			
Cash paid for income taxes	$ 2,190	$ 1,038	$ 1,113
Supplemental disclosure of noncash information:			
Property and equipment purchases in accounts payable and accrued liabilities	$ —	$ —	$ 130
Value of common stock issued in connection with asset acquisition	$ —	$ —	$ 44,280

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

ACADIA PHARMACEUTICALS INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except share amounts)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity
	Shares	Amount				
Balances at December 31, 2019	155,275,300	$ 15	$ 2,402,945	$ (1,704,122)	$ 297	$ 699,135
Issuance of common stock in public offering, net of issuance costs	1,156,626	—	44,280	—	—	44,280
Issuance of common stock from exercise of stock options and units	2,827,586	1	73,833	—	—	73,834
Issuance of common stock pursuant to employee stock purchase plan	378,259	—	7,162	—	—	7,162
Net loss	—	—	—	(281,584)	—	(281,584)
Stock-based compensation	—	—	84,443	—	—	84,443
Other comprehensive income	—	—	—	—	(261)	(261)
Balances at December 31, 2020	159,637,771	16	2,612,663	(1,985,706)	36	627,009
Issuance of common stock from exercise of stock options	1,078,074	—	12,850	—	—	12,850
Issuance of common stock pursuant to employee stock purchase plan	296,850	—	5,312	—	—	5,312
Net loss		—		(167,870)		(167,870)
Stock-based compensation	—	—	63,821	—	—	63,821
Other comprehensive income	—	—			(228)	(228)
Balances at December 31, 2021	161,012,695	16	2,694,646	(2,153,576)	(192)	540,894
Issuance of common stock from exercise of stock options and units	721,652	—	3,705	—	—	3,705
Issuance of common stock pursuant to employee stock purchase plan	330,525	—	4,494	—	—	4,494
Net loss	—	—	—	(215,975)	—	(215,975)
Stock-based compensation	—	—	68,078	—	—	68,078
Other comprehensive income	—	—	—	—	(783)	(783)
Balances at December 31, 2022	162,064,872	$ 16	$ 2,770,923	$ (2,369,551)	$ (975)	$ 400,413

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

ACADIA PHARMACEUTICALS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and Business

Acadia Pharmaceuticals Inc. (the Company), based in San Diego, California, is a biopharmaceutical company focused on the development and commercialization of innovative medicines that address unmet medical needs in CNS disorders and rare disease. The Company is incorporated in Delaware.

In April 2016, the U.S. Food and Drug Administration (FDA) approved the Company's first drug, NUPLAZID® (pimavanserin), for the treatment of hallucinations and delusions associated with Parkinson's disease psychosis (PDP). NUPLAZID became available for prescription in the United States in May 2016.

2. Summary of Significant Accounting Policies

Significant accounting policies followed in the preparation of these financial statements are as follows:

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

Use of Estimates

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

Cash and Cash Equivalents

The Company considers all highly liquid investments with a maturity date at the date of purchase of three months or less to be cash equivalents.

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported in the consolidated balance sheets that sum to the total of the same such amounts shown in the consolidated statements of cash flows (in thousands).

	Twelve Months Ended December 31, 2022		Twelve Months Ended December 31, 2021	
	Beginning of period	End of period	Beginning of period	End of period
Cash and cash equivalents	$ 147,435	$ 114,846	$ 326,028	$ 147,435
Restricted cash	5,770	5,770	5,770	5,770
Total cash, cash equivalents and restricted cash shown in the statements of cash flows	$ 153,205	$ 120,616	$ 331,798	$ 153,205

Investment Securities

Currently, all of the Company's investment securities are debt securities. The Company has classified all of its investment securities as available-for-sale as the sale of such securities may be required prior to maturity to implement management strategies, and accordingly, carries these investments at fair value. Unrealized gains and losses, if any, are reported as a separate component of stockholders' equity. The cost of investment securities classified as available-for-sale is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization and accretion are included in interest income. Realized gains and losses, if any, are also included in interest income. The cost of securities sold is based on the specific identification method.

Fair Value of Financial Instruments

The carrying values of the Company's financial instruments, consisting of cash and cash equivalents, trade receivables, interest and other receivables, restricted cash, and accounts payable and accrued liabilities, approximate fair value due to the relative short-term nature of these instruments.

As disclosed in Note 4, the Company classifies its cash equivalents and available-for-sale investment securities within the fair value hierarchy as defined by authoritative guidance:

Level 1 Inputs — Quoted prices for identical instruments in active markets.

Level 2 Inputs — Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs and significant value drivers are observable.

Level 3 Inputs — Valuation derived from valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

Accounts Receivable

Accounts receivable are recorded net of customer allowances for distribution fees, prompt payment discounts, chargebacks, and credit losses. Allowances for distribution fees, prompt payment discounts and chargebacks are based on contractual terms. The Company adopted FASB Accounting Standards Codification 326-20, *Financial Instruments – Credit Losses* (ASC 326-20) as of January 1, 2020. The Company estimated the current expected credit losses of its accounts receivable by assessing the risk of loss and available relevant information about the collectability, including historical credit losses, existing contractual payment terms, actual payment patterns of its customers, individual customer circumstances, and reasonable and supportable forecast of economic conditions expected to exist throughout the contractual life of the receivable. Based on its assessment, as of December 31, 2022, the Company determined that an allowance for credit loss was not required.

Although the Company has not historically experienced significant credit losses, the Company's exposure may increase due to uncertainties associated with the global economic recession and other disruptions resulting from the COVID-19 pandemic.

Inventory

Inventory is stated at the lower of cost or net realizable value under the first-in, first-out method (FIFO). The Company uses a combination of standard and actual costing methodologies to determine the cost basis for its inventories which approximates actual costs. Inventory consists of raw material, work in process, and finished goods, including third-party manufacturing costs, freight, and indirect overhead costs. The Company capitalizes inventory costs associated with its products upon regulatory approval when, based on management's judgment, future commercialization is considered probable and the future economic benefit is expected to be realized; otherwise, such costs are expensed. Prior to FDA approval of NUPLAZID in April 2016, all costs related to the manufacturing of NUPLAZID were charged to research and development expense in the period incurred.

The Company periodically reviews inventory and reduces the carrying value of items to net realizable value for potentially excess, dated or obsolete inventory based on an analysis of forecasted demand compared to quantities on hand and any firm purchase orders, as well as product shelf life. During the years ended December 31, 2022, 2021 and 2020, the Company recorded charges of $0.6 million, $1.3 million and $0.4 million, respectively, to reduce certain finished goods and work in process inventory to its net realizable value.

Property and Equipment

Property and equipment are recorded at cost and depreciated over their estimated useful lives using the straight-line method. Leasehold improvements are amortized over the shorter of their estimated useful lives or the term of the lease by use of the straight-line method. Construction-in-process reflects amounts incurred for property, equipment or improvements that have not been placed in service. Maintenance and repair costs are expensed as incurred. When assets are retired or sold, the assets and accumulated depreciation are removed from the respective accounts and any gain or loss is recognized. Estimated useful lives by major asset category are as follows:

	Useful Lives
Machinery and equipment	5 to 7 years
Computers and software	3 years
Furniture and fixtures	10 years

Impairment of Long-Lived Assets

The Company reviews its long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset. Through December 31, 2022, no such impairment losses have been recorded by the Company.

License Fees and Royalties

The Company expenses amounts paid to acquire licenses associated with products under development when the ultimate recoverability of the amounts paid is uncertain and the technology has no alternative future use when acquired. Acquisitions of technology licenses are charged to expense or capitalized based upon management's assessment regarding the ultimate recoverability of the amounts paid and the potential for alternative future use. The Company has determined that technological feasibility for its product candidates is reached when the requisite regulatory approvals are obtained to make the product available for sale.

In connection with the FDA approval of NUPLAZID in April 2016, the Company made a one-time milestone payment of $8.0 million pursuant to its 2006 license agreement with the Ipsen Group in which the Company licensed certain intellectual property rights that complement its patent portfolio for its serotonin platform, including NUPLAZID. The Company capitalized the $8.0 million payment as an intangible asset and is amortizing the asset on a straight-line basis over the estimated useful life which ended during the year ended December 31, 2021. The Company recorded no amortization expense related to its intangible asset for the year ended December 31, 2022 and recorded amortization expense of $1.1 million and $1.5 million for the years ended December 31, 2021 and 2020. As of December 31, 2021, the intangible asset was fully amortized.

Acquisitions

The Company accounts for acquisitions of an asset or group of similar identifiable assets that do not meet the definition of a business as asset acquisition using the cost accumulation method, whereby the cost of the acquisition, including certain transaction costs, is allocated to the assets acquired on the basis of their relative fair values. No goodwill is recognized in an asset acquisition. Intangible assets acquired in an asset acquisition for use in research and development activities which have no alternative future use are expensed as in-process research and development on the acquisition date. Intangible assets acquired for use in research and development activities which have an alternative future use are capitalized as in-process research and development. Future costs to develop these assets are recorded to research and development expense as they are incurred. Contingent milestone payments associated with asset acquisitions are recognized when probable and estimable. These amounts are expensed to research and development if there is no alternative future use associated with the asset, or capitalized as an intangible asset if alternative future use of the asset exists.

Advertising Expense

In connection with the FDA approval and commercial launch of NUPLAZID in 2016, the Company began to incur advertising costs. Advertising costs are expensed when services are performed or goods are delivered. The Company incurred $5.5 million, $41.8 million and $51.1 million in advertising costs during the years ended December 31, 2022, 2021 and 2020, respectively, related to NUPLAZID. No advertising costs were capitalized as prepaid expenses at December 31, 2022 or 2021.

Revenue Recognition

Product Sales, Net

The Company accounts for contracts with its customers in accordance with *Revenue from Contracts with Customers (Topic 606)*. The Company recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the Company expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that the Company determines are within the scope of Topic 606, the Company performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the Company satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that the Company will collect the consideration it is entitled to in exchange for the goods or services it transfers to the customer. At contract inception, once the contract is determined to be within the scope of Topic 606, the Company assesses the goods or services promised within each contract, determines those that are performance obligations, and assesses whether each promised good or service is distinct. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied. Payment terms differ by customer, but typically range from 31 to 35 days from the date of shipment. Revenue for the Company's product sales has not been adjusted for the effects of a financing component as the Company expects, at contract inception, that the period between when the Company transfers control of the product and when the Company receives payment will be one year or less.

The Company's product sales, net consist of U.S. sales of NUPLAZID. NUPLAZID was approved by the FDA in April 2016 and the Company commenced shipments of NUPLAZID to SPs and SDs in late May 2016. SPs dispense product to a patient based on the fulfillment of a prescription and SDs sell product to government facilities, long-term care pharmacies, or in-patient hospital pharmacies. Product shipping and handling costs are included in cost of product sales.

The Company recognizes revenue from product sales at the net sales price (the "transaction price") which includes estimates of variable consideration for which reserves for sales discounts and allowance are established and reflects each of these as either a reduction to the related account receivable or as an accrued liability, depending on how the amount payable is settled. Overall, these reserves reflect the Company's best estimates of the amount of consideration to which the Company is entitled based on the terms of the contract. The amount of variable consideration that is included in the transaction price may be constrained, and is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized will not occur in a future period. Actual amounts of consideration ultimately received may differ from the Company's estimates. If actual results in the future vary from estimates, the Company may need to adjust its estimates, which would affect net revenue in the period of adjustment. The following are the Company's significant categories of sales discounts and allowances:

Distribution Fees: Distribution fees include distribution service fees paid to the SPs and SDs based on a contractually fixed percentage of the wholesale acquisition cost (WAC), fees for data, and prompt payment discounts. Distribution fees are recorded as an offset to revenue based on contractual terms at the time revenue from the sale is recognized.

Rebates: Allowances for rebates include mandated discounts under the Medicaid Drug Rebate Program and the Medicare Part D prescription drug benefit. Rebates are amounts owed after the final dispensing of the product to a benefit plan participant and are based upon contractual agreements with, or statutory requirements pertaining to, Medicaid and Medicare benefit providers. The allowance for rebates is based on statutory discount rates, estimated payor mix, and expected utilization. The Company's estimates for expected utilization of rebates are based on historical data received from the SPs and SDs since product launch. Rebates are generally invoiced and paid in arrears so that the accrual balance consists of an estimate of the amount expected to be incurred for the current quarter's activity, plus an accrual balance for prior quarters' unpaid rebates still estimated to be incurred. Allowances for rebates also include amounts due under the Inflation Reduction

act of 2022 for Medicare Part D unit sales with applicable period AMP increases that outpace inflation over the benchmark period. The applicable period will be twelve months on October 1 of each year, with the initial applicable period beginning on October 1, 2022. The benchmark period AMP price is January 1, 2021 through September 30, 2021. The Company's estimates are based Medicare Part D sales as a percentage of gross sales and the rate AMP for the current period will be in excess the benchmark period.

Chargebacks: Chargebacks are discounts and fees that relate to contracts with government and other entities purchasing from the SDs at a discounted price. The SDs charge back to the Company the difference between the price initially paid by the SDs and the discounted price paid to the SDs by these entities. The Company also incurs group purchasing organization fees for transactions through certain purchasing organizations. The Company estimates sales with these entities and accrues for anticipated chargebacks and organization fees, based on the applicable contractual terms.

Co-Payment Assistance: The Company offers co-payment assistance to commercially insured patients meeting certain eligibility requirements. Co-payment assistance is accrued for based on actual program participation and estimates of program redemption using data provided by third-party administrators.

Product Returns: Consistent with industry practice, the Company offers the SPs and SDs limited product return rights for damages, shipment errors, and expiring product; provided that the return is within a specified period around the product expiration date as set forth in the applicable individual distribution agreement. The Company does not allow product returns for product that has been dispensed to a patient. As the Company receives inventory reports from the SPs and SDs and has the ability to control the amount of product that is sold to the SPs and SDs, it is able to make a reasonable estimate of future potential product returns based on this on-hand channel inventory data and sell-through data obtained from the SPs and SDs. In arriving at its estimate for product returns, the Company also considers historical product returns, the underlying product demand, and industry data specific to the specialty pharmaceutical distribution industry.

Research and Development Expenses

Research and development expenses are charged to operations as incurred. Research and development expenses include costs associated with services provided by contract organizations for preclinical development, pre-commercialization manufacturing expenses, and clinical trials, salaries and related personnel expenses including stock-based compensation expense, and facilities and equipment expenses. The upfront consideration and transaction costs associated with acquired in-process research and development are also included in the research and development expenses.

The Company accrues for costs incurred as the services are being provided by monitoring the status of the trial or services provided and the invoices received from its external service providers. When the Company makes payments in advance of services being provided, it records those amounts as prepaid expenses on its consolidated balance sheets and expense them as the services are rendered. In the case of clinical trials, a portion of the estimated cost normally relates to the projected cost to treat a patient in the trials, and this cost is recognized based on the number of patients enrolled in the trial. Other indirect costs are generally recognized on a straight-line basis over the estimated period of the study. As actual costs become known, the Company adjusts its accruals accordingly.

Concentration Risk

Financial instruments, which potentially subject the Company to concentrations of credit risk, principally consist of cash, cash equivalents, investment securities, accounts receivable, and restricted cash. The Company invests its excess cash primarily in money market funds, U.S. treasury notes, and high quality, marketable debt instruments of corporations and government sponsored enterprises in accordance with the Company's investment policy. The Company's investment policy defines allowable investments and establishes guidelines relating to credit quality, diversification, and maturities of its investments to preserve principal and maintain liquidity. All investment securities have a credit rating of at least Aa3/AA- or better, or P-1/A-1 or better, as determined by Moody's Investors Service or Standard & Poor's. Further, the Company specifies credit quality standards for its customers that are designed to limit the Company's credit exposure to any single party.

The Company does not currently have any of its own manufacturing facilities, and therefore it depends on an outsourced manufacturing strategy for the production of NUPLAZID for commercial use and for the production of its product candidates for clinical trials. The Company has contracts in place with two third-party manufacturers of commercial drug product and one third-party manufacturer of drug substance that is approved for the production of NUPLAZID API. Although there are potential sources of supply other than the Company's existing suppliers, any new supplier would be required to qualify under applicable regulatory requirements.

The Company has entered into distribution agreements with a limited number of SPs and SDs, and all of the Company's product sales are to these customers. For the year ended December 31, 2022, the Company's four largest customers represented approximately 73% of the Company's product revenue and 74% of the Company's accounts receivable balance at December 31, 2022. For the year ended December 31, 2021, the Company's four largest customers represented approximately 74% of the Company's product revenue and 77% of the Company's accounts receivable balance at December 31, 2021. For the year ended December 31, 2020, the Company's four largest customers represented approximately 74% of the Company's product revenue and 75% of the Company's accounts receivable balance at December 31, 2020.

Stock-Based Compensation

The fair value of each employee stock option and each employee stock purchase right granted is estimated on the grant date under the fair value method using the Black-Scholes valuation model. The estimated fair value of each stock option and purchase right is then expensed over the requisite service period, which is generally the vesting period. The following weighted-average assumptions were used during these periods:

	Years Ended December 31,		
	2022	2021	2020
Stock Options:			
Expected volatility	68%	64%	63%
Risk-free interest rate	3%	1%	1%
Expected dividend yield	0%	0%	0%
Expected life of options in years	5.4	5.4	5.5

	Years Ended December 31,		
	2022	2021	2020
Employee Stock Purchase Plan:			
Expected volatility	62%-82%	49%-100%	50%-76%
Risk-free interest rate	1.5%-4.6%	0.0%-0.5%	0.1%-0.2%
Expected dividend yield	0%	0%	0%
Expected life in years	0.5-2.0	0.5-2.0	0.5-2.0

Expected Volatility. The Company considers its historical volatility and implied volatility when determining the expected volatility.

Risk-Free Interest Rate. The Company determines its risk-free interest rate assumption based on the U.S. Treasury yield for obligations with contractual terms similar to the expected term of the stock option or purchase right being valued.

Expected Dividend Yield. The Company has never paid any dividends and currently has no plans to do so.

Expected Life. In determining the expected life for stock options, the Company considers, among other factors, its historical exercise experience to date as well as the mean time remaining to full vesting of all outstanding options and the mean time remaining to the end of the contractual term of all outstanding options. The estimated life for the Company's employee stock purchase rights is based upon the terms of each offering period.

The fair value of RSUs is estimated based on the closing market price of the Company's common stock on the date of grant. RSUs generally vest over a four-year period. Certain RSUs also have an accelerated vesting clause based on specified market condition target and continued employment through a minimum vesting period. The fair value of RSUs expected to vest are recognized and amortized on a straight-line basis over the requisite service period, which is generally the vesting period. For those RSUs requiring satisfaction of both market and service conditions, the requisite service period is the longest of the explicit, implicit and derived service periods. The fair value of performance-based stock units (PSUs) is estimated based on the closing market price of the Company's common stock on the date of grant. PSUs vest upon the achievement of certain pre-defined company-specific performance-based criteria. Expense related to these PSUs is recognized ratably over the expected performance period once the pre-defined performance-based criteria for vesting becomes probable. During the years ended December 31, 2022 and 2021, the Company had a change in estimate related to the achievement of certain performance-based criteria for performance-based stock awards which resulted in a reduction in stock-based compensation expenses by approximately $0 and $6.8 million.

The table below summarizes the total stock-based compensation expense included in the Company's statements of operations for the periods presented (in thousands):

	Years Ended December 31,		
	2022	2021	2020
Cost of product sales	$ 1,106	$ 1,286	$ 2,632
Research and development	22,580	21,969	31,314
Sales, general and administrative	44,515	40,360	50,476
	$ 68,201	$ 63,615	$ 84,422

Income Taxes

Current income tax expense or benefit represents the amount of income taxes expected to be payable or refundable for the current year. A deferred income tax asset or liability is computed for the expected future impact of differences between the financial reporting and income tax bases of assets and liabilities and for the expected future tax benefit to be derived from tax credits and loss carryforwards. Deferred income tax expense or benefit represents the net change during the year in the deferred income tax asset or liability. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized.

The Company recognizes the impact of a tax position in the financial statements only if that position is more likely than not to be sustained upon examination by taxing authorities, based on the technical merits of the position. Any interest and penalties related to uncertain tax positions will be reflected in income tax expense.

Net Loss Per Share

Basic net loss per share is calculated by dividing the net loss by the weighted average number of common shares outstanding for the period, without consideration for common stock equivalents. Diluted net loss per share is computed by dividing the net loss by the weighted average number of common shares and common stock equivalents outstanding for the period determined using the treasury stock method. For purposes of this calculation, stock options, employee stock purchase rights, RSUs, and warrants are considered to be common stock equivalents but are not included in the calculations of diluted net loss per share for the periods presented as their effect would be antidilutive. The Company incurred net losses for all periods presented and there were no reconciling items for potentially dilutive securities. More specifically, at December 31, 2022, 2021 and 2020, options, employee stock purchase rights, RSUs, PSUs, and warrants covering a total of approximately 21,185,000 shares, 17,535,000 shares and 19,331,000 shares, respectively, were excluded from the calculation of diluted net loss per share as their effect would have been anti-dilutive.

Segment Reporting

Management has determined that the Company operates in one business segment which is the development and commercialization of innovative medicines. All revenues for the years ended December 31, 2022, 2021 and 2020 were generated from customers in the United States.

3. Investments

The carrying value and amortized cost of the Company's investments, summarized by major security type, consisted of the following (in thousands):

	December 31, 2022			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
U.S. Treasury notes	$ 15,956	$ —	$ (11)	$ 15,945
Government sponsored enterprise securities	81,216	16	(291)	80,941
Municipal bonds	20,873	—	(98)	20,775
Commercial paper	184,923	30	(637)	184,316
	$ 302,968	$ 46	$ (1,037)	$ 301,977

	December 31, 2021			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
U.S. Treasury notes	$ 140,287	$ —	$ (100)	$ 140,187
Government sponsored enterprise securities	49,512	—	(38)	49,474
Corporate debt securities	26,006	—	(22)	25,984
Commercial paper	157,670	9	(53)	157,626
	$ 373,475	$ 9	$ (213)	$ 373,271

The Company has classified all of its available-for-sale investment securities, including those with maturities beyond one year, as current assets on its consolidated balance sheets based on the highly liquid nature of the investment securities and because these investment securities are considered available for use in current operations. As of December 31, 2022 and 2021, all of the Company's available-for-sale investment securities have contractual maturity dates of less than one year. The Company has classified all equity securities as other assets on its consolidated balance sheets.

At December 31, 2022 and 2021, the Company had 43 and 39 securities, respectively, in an unrealized loss position. The following table presents gross unrealized losses and fair value for those available-for-sale investments that were in an unrealized loss position as of December 31, 2022 and December 31, 2021, aggregated by investment category and length of time that individual securities have been in a continuous loss position (in thousands):

	Less Than 12 Months		12 Months or Greater		Total	
	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses
December 31, 2022						
U.S. Treasury notes	$ 15,945	$ (11)	$ —	$ —	$ 15,945	$ (11)
Government sponsored enterprise securities	58,254	(291)	—	—	58,254	(291)
Municipal bonds	20,775	(98)	—	—	20,775	(98)
Commercial paper	135,200	(637)	—	—	135,200	(637)
Total	$ 230,174	$ (1,037)	$ —	$ —	$ 230,174	$ (1,037)
December 31, 2021:						
U.S. Treasury notes	$ 140,287	$ (100)	$ —	$ —	$ 140,287	$ (100)
Government sponsored enterprise securities	49,512	(38)	—	—	49,512	(38)
Corporate debt securities	26,006	(22)	—	—	26,006	(22)
Commercial paper	75,192	(53)	—	—	75,192	(53)
Total	$ 290,997	$ (213)	$ —	$ —	$ 290,997	$ (213)

At each reporting date, the Company performs an evaluation of impairment to determine if any unrealized losses are the result of credit losses. Impairment is assessed at the individual security level. Factors considered in determining whether a loss resulted from a credit loss or other factors include the Company's intent and ability to hold the investment until the recovery of its amortized cost basis, the extent to which the fair value is less than the amortized cost basis, the length of time and extent to which fair value has been less than the cost basis, the financial condition of the issuer, any historical failure of the issuer to make scheduled interest or principal payments, any changes to the rating of the security by a rating agency, any adverse legal or regulatory events affecting the issuer or issuer's industry, any significant deterioration in economic conditions.

The Company does not intend to sell the investment in unrealized loss position and it is unlikely that the Company will be required to sell the investment before the recovery of its amortized cost basis. Based on its evaluation, the Company determined its year-to-date credit losses related to its available-for-sale securities were immaterial at December 31, 2022.

Although the Company has not historically experienced significant losses on its investments, the Company's exposure may increase due to uncertainties associated with geopolitical and macroeconomic developments, including, without limitation, a global economic recession, the Ukraine-Russia conflict and related sanctions, and the COVID-19 pandemic.

4. Fair Value Measurements

The Company's investments include cash equivalents, available-for-sale investment securities consisting of money market funds, U.S. treasury notes, and marketable debt instruments of corporations and government sponsored enterprises in accordance with the Company's investment policy, and equity investments. The Company's investment policy defines allowable investment securities and establishes guidelines relating to credit quality, diversification, and maturities of its investments to preserve principal and maintain liquidity. All investment securities have a credit rating of at least Aa3/AA- or better, or P-1/A-1 or better, as determined by Moody's Investors Service or Standard & Poor's.

The Company's cash equivalents, available-for-sale investment securities, and equity securities are classified within the fair value hierarchy as defined by authoritative guidance. The Company's investment securities and equity securities classified as Level 1 are valued using quoted market prices. The Company obtains the fair value of its Level 2 financial instruments from third-party pricing services. The pricing services utilize industry standard valuation models whereby all significant inputs, including benchmark yields, reported trades, broker/dealer quotes, issuer spreads, bids, offers, or other market-related data, are observable. The Company validates the prices provided by the third-party pricing services by reviewing their pricing methods and matrices and obtaining market values from other pricing sources. After completing the validation procedures, the Company did not adjust or override any fair value measurements provided by these pricing services as of December 31, 2022 and 2021, respectively.

In November 2021, the Company established a plan whereby substantially all full-time employees excluding executive management are eligible to receive a series of cash bonuses based on achievement of certain conditions as described in more detail in Note 6 to the consolidated financial statements included in this Annual Report. The Company estimated the fair value of the cash awards using a Monte Carlo simulation, which utilizes level 3 inputs such as volatility, probabilities of success, and other inputs that are not observable in active markets. The cash awards are required to be measured at fair value on a recurring basis each reporting period, with changes in the fair value recognized as compensation cost over the derived service period of the awards.

The Company has not transferred any investment securities between the classification levels.

The recurring fair value measurements of the Company's cash equivalents, available-for-sale investment securities, and equity securities at December 31, 2022 and 2021 consisted of the following (in thousands):

	December 31, 2022	Fair Value Measurements at Reporting Date Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Money market fund	$ 72,578	$ 72,578	$ —	$ —
U.S. Treasury notes	15,945	15,945	—	—
Equity securities	7,180	7,180	—	—
Government sponsored enterprise securities	94,803	—	94,803	—
Municipal bonds	20,775	—	20,775	—
Commercial paper	184,316	—	184,316	—
Total	$ 395,597	$ 95,703	$ 299,894	$ —
Liabilities				
Cash awards	$ 898	$ —	$ —	$ 898
Total	$ 898	$ —	$ —	$ 898

	December 31, 2021	Fair Value Measurements at Reporting Date Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Money market fund	$ 122,876	$ 122,876	$ —	$ —
U.S. Treasury notes	140,187	140,187	—	—
Equity securities	3,638	3,638	—	—
Government sponsored enterprise securities	49,474	—	49,474	—
Corporate debt securities	25,984	—	25,984	—
Commercial paper	157,626	—	157,626	—
Total	$ 499,785	$ 266,701	$ 233,084	$ —
Liabilities				
Cash awards	$ 603	$ —	$ —	$ 603
Total	$ 603	$ —	$ —	$ 603

Changes in estimated fair value of contingent cash awards during the twelve months ended December 31, 2022 are as follows (in thousands):

Balance as of December 31, 2021	$ 603
Vesting of awards	1,798
Expense forfeited	(117)
Change in fair value	(1,386)
Balance as of December 31, 2022	$ 898

5. Balance Sheet Details

Inventory consisted of the following (in thousands):

	December 31, 2022	December 31, 2021
Finished goods	$ 1,926	$ 1,114
Work in process	4,427	6,767
Raw material	5,207	6,217
	$ 11,560	$ 14,098
Reported as:		
Inventory	$ 6,636	$ 7,881
Long-term inventory	4,924	6,217
Total	$ 11,560	$ 14,098

Amount reported as long-term inventory consisted of raw materials as of December 31, 2022 and 2021. The Company has raw materials beyond its one-year production plan that prevent the Company from potential supply interruption. Those raw materials maintained beyond the one-year production plan were classified as long-term inventory.

Property and equipment, net, consisted of the following (in thousands):

	December 31, 2022	December 31, 2021
Computers and software	$ 5,873	$ 5,873
Leasehold improvements	3,696	3,696
Furniture and fixtures	4,549	4,549
Machinery and equipment	—	113
	14,118	14,231
Accumulated depreciation	(8,097)	(6,184)
	$ 6,021	$ 8,047

Depreciation of property and equipment was $2.0 million, $2.2 million, and $1.5 million for the years ended December 31, 2022, 2021, and 2020, respectively. For the year ended December 31, 2022, the Company retired $0.1 million of fully depreciated property and equipment. For the year ended December 31, 2021, the Company did not retire any fully depreciated property and equipment. During 2020, the Company retired $3.1 million of fully depreciated property and equipment.

Accrued liabilities consisted of the following (in thousands):

	December 31, 2022	December 31, 2021
Accrued research and development services	$ 35,048	$ 27,270
Accrued compensation and benefits	28,023	25,896
Accrued sales allowances	26,046	15,717
Accrued consulting and professional fees	11,377	9,319
Current portion of lease liabilities	9,305	8,304
Other	3,085	2,686
	$ 112,884	$ 89,192

6. Stockholders' Equity

Stock Offerings

In August 2020, the Company entered into an Agreement and Plan of Merger (the Merger Agreement) with CerSci Therapeutics Incorporated (CerSci), pursuant to which one of the Company's wholly owned subsidiaries merged with and into CerSci, with CerSci as the surviving corporation and the Company's wholly owned subsidiary. Approximately 1.2 million shares of the Company's common stock with a value of $44.3 million were issued to CerSci's former equity holders. The Company filed a registration statement on Form S-3 with the SEC to register the resale of the shares of the Company's common stock issued in connection with its acquisition of CerSci.

Equity Awards

The Company's 2010 Equity Incentive Plan, as amended to date (the 2010 Plan), permits the grant of options to employees, directors and consultants. In addition, the 2010 Plan permits the grant of stock bonuses, rights to purchase restricted stock, and other stock awards. The exercise price of options granted under the 2010 Plan cannot be less than 100 percent of the fair market value of the common stock on the date of grant and the maximum term of any option is 10 years. Options granted under the 2010 Plan generally vest over a four-year period. All shares that remained eligible for grant under the Company's 2004 Equity Incentive Plan (the 2004 Plan) at the time of approval of the 2010 Plan were transferred to the 2010 Plan. The 2010 Plan share reserve also has been, and may be, increased by the number of shares that otherwise would have reverted to the 2004 Plan reserve after June 2010. In June 2015, June 2016, June 2017, June 2018, June 2019 and June 2022, the Company's stockholders approved amendments to its 2010 Plan to, among other things, increase the aggregate number of shares of common stock authorized for issuance under the plan by 5,000,000 shares, 3,000,000 shares, 5,500,000 shares, 6,700,000 shares, 8,300,000 shares and 6,000,000 shares, respectively. At December 31, 2022, there were 32,635,412 shares of common stock authorized for issuance, of which 12,108,840 shares were available for new grants under the 2010 Plan.

Stock Options

The 2010 Plan provided for the grant of options to employees, directors and consultants. The exercise price of options granted under the 2010 Plan was at 100 percent of the fair market value of the common stock on the date of grant and the maximum term of any option was 10 years. Options granted under the 2010 Plan generally vested over a four-year period.

The following table summarizes the Company's stock option activity during the year ended December 31, 2022:

	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2021	15,086,141	$ 31.58		
Granted	3,393,568	$ 22.79		
Exercised	(226,943)	$ 16.32		
Cancelled/forfeited	(1,913,301)	$ 32.68		
Outstanding at December 31, 2022	16,339,465	$ 29.83	5.7	$ 1,052
Vested and exercisable at December 31, 2022	11,386,596	$ 30.70	4.5	$ 725
Unvested at December 31, 2022	4,952,869	$ 27.82	8.3	$ 327

The aggregate intrinsic value of options exercisable as of December 31, 2022 is calculated as the difference between the exercise price of the underlying options and the closing market price of the Company's common stock on that date, which was $15.92 per share. The aggregate intrinsic value of options exercised during the years ended December 31, 2022, 2021, and 2020 was approximately $1.7 million, $8.0 million, and $55.5 million, respectively, determined as of the date of exercise. The Company received $3.7 million and $12.9 million in cash from options exercised during the year ended December 31, 2022 and 2021, respectively.

The weighted average per share fair value of options granted during the years ended December 31, 2022, 2021, and 2020 was approximately $13.66, $24.07, and $24.16, respectively. As of December 31, 2022 and 2021, total unrecognized compensation cost related to stock options was approximately $63.9 million and $66.0 million, and the weighted average period over which this cost is expected to be recognized is approximately 2.7 years and 2.3 years, respectively.

Restricted Stock

The Company grants RSUs and PSUs, both of which are considered restricted stock, pursuant to the 2010 Plan and satisfies such grants through the issuance of new shares. RSUs are share awards that, upon vesting, will deliver to the holder shares of the Company's common stock. RSUs generally vest over a four-year period. Certain RSUs also have an accelerated vesting clause based on specified market condition target and continued employment through the vesting period. PSUs for which the number of shares issuable at the end of performance period can reach up to 200% of the shares approved in the award based on the achievement of certain pre-defined Acadia-specific performance criteria and continued employment through the vesting period.

The following table summarizes the Company's restricted stock activity during the year ended December 31, 2022:

	Number of Shares	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2021	2,680,790	$ 34.41	
Granted	2,534,557	$ 24.14	
Vested	(494,709)	$ 35.82	
Cancelled/forfeited	(533,531)	$ 22.92	
Outstanding at December 31, 2022	4,187,107	$ 29.49	$ 48,581

There were 2,055,574 and 1,276,936 PSUs outstanding at December 31, 2022 and 2021, respectively. During the years ended 2022 and 2021, 986,739 and 918,434 PSUs were granted, respectively, none of which were vested. During the years ended December 31, 2022 and 2021, total intrinsic value of PSUs outstanding was $32.7 million and $29.8 million, respectively. Total unrecognized compensation cost related to RSUs was approximately $44.6 million and $39.8 million for the years ended December 31, 2022 and 2021, respectively, and the weighted average period over which the cost is expected to be recognized is approximately 2.7 years and 2.3 years, respectively. Total unrecognized compensation cost related to PSUs was approximately $12.7 million and $11.5 million for the years ended December 31, 2022 and 2021, respectively, and the weighted average remaining contractual term related to outstanding PSUs was 3.0 years and 3.3 years, respectively.

Employee Stock Purchase Plan

The Company's 2004 Employee Stock Purchase Plan (the Purchase Plan) became effective upon the closing of the Company's initial public offering in June 2004. In June 2016, June 2019 and June 2020, the Company's stockholders approved an amendment to the Purchase Plan to, among other things, increase the aggregate number of shares of common stock authorized for issuance under the plan by 400,000 shares, 600,000 shares and 3,000,000 shares, respectively. At December 31, 2022, a total of 5,525,000 shares of common stock had been reserved for issuance under the Purchase Plan. At December 31, 2022, 2,479,620 shares of common stock remained available for issuance pursuant to the Purchase Plan. Eligible employees who elect to participate in an offering under the Purchase Plan may have up to 15 percent of their earnings withheld, subject to certain limitations, to purchase shares of common stock pursuant to the Purchase Plan. The price of common stock purchased under the Purchase Plan is equal to 85 percent of the lower of the fair market value of the common stock at the commencement date of each offering period or the relevant purchase date.

During the years ended December 31, 2022, 2021, and 2020, a total of 330,525, 296,850, and 377,963 shares of common stock were issued under the Purchase Plan at average per share prices of $13.60, $17.89, and $18.94, respectively. The weighted average per share fair value of purchase rights granted during the years ended December 31, 2022, 2021, and 2020 was $13.91, $23.97, and $22.47, respectively. During the years ended December 31, 2022, 2021, and 2020, the Company recorded cash received from the exercise of purchase rights of $4.5 million, $5.3 million, and $7.2 million, respectively.

Contingent Cash Awards

In November 2021, the Company established a plan whereby substantially all full-time employees excluding executive management are eligible to receive a series of cash bonuses over certain periods based on continued employment and the Company's stock price reaching a pre-specified target. The maximum potential payout of the cash awards at the grant date was $15.1 million. The Company has determined that the cash awards were classified as liabilities pursuant to ASC Topic 718, *Compensation – Stock Compensation*. The Company estimates the fair value of the awards at each reporting period using the Monte Carlo simulation, which is recognized as compensation cost over the derived service period. Total fair value of the awards at the grant date was $4.4 million. The maximum potential payout at December 31, 2022 after adjusting for forfeitures was $11.8 million. The total fair value of the awards at December 31, 2022 was approximately $1.8 million, compared to $5.6 million at December 31, 2021. The estimated liability included on the December 31, 2022 and 2021 consolidated balance sheet was $0.9 million and $0.6 million. During years ended December 31, 2022 and 2021, the Company recorded a total of $0.3 million and $0.6 million compensation cost related to the awards.

7. 401(k) Plan

Effective January 1997, the Company established a deferred compensation plan (the 401(k) Plan) pursuant to Section 401(k) of the Internal Revenue Code of 1986, as amended (the Code), whereby substantially all employees are eligible to contribute up to 60 percent of their pretax earnings, not to exceed amounts allowed under the Code. The Company makes discretionary contributions to the 401(k) Plan equal to 100 percent of each employee's pretax contributions up to 5 percent of his or her eligible compensation, subject to limitations under the Code. The Company's total contributions to the 401(k) Plan were $5.1 million, $5.8 million, and $5.1 million for the years ended December 31, 2022, 2021, and 2020, respectively.

8. Income Taxes

Domestic and foreign pre-tax loss is as follows (in thousands):

	Years Ended December 31,		
	2022	2021	2020
Domestic	$ (233,216)	$ (138,913)	$ (238,885)
Foreign	19,772	(28,606)	(42,088)
	$ (213,444)	$ (167,519)	$ (280,973)

At December 31, 2022, the Company had federal, state, and foreign net operating loss (NOL) carryforwards of approximately $480.2 million, $486.4 million, and $1,130.3 million, respectively. The Company recognized state income tax provisions of $2.5 million, $0.4 million and $0.4 million for the years ended December 31, 2022, 2021 and 2020, respectively. The Company recognized foreign income tax in the amount of $0.2 million for the year ended December 31, 2020. These tax liabilities were associated with minimum taxes and state tax liabilities in excess of net operating losses in the current year and a patent box entry tax for Switzerland. Utilization of the domestic NOL and research and development (R&D) credit carryforwards may be subject to a substantial annual limitation due to ownership change limitations that have occurred or that could occur in the future, as required by Section 382 of the Code, as well as similar state and foreign provisions. These ownership changes may limit the amount of NOL and R&D credit carryforwards that can be utilized annually to offset future taxable income and tax, respectively. In general, an "ownership change" as defined by Section 382 of the Code results from a transaction or series of transactions over a three-year period resulting in an ownership change of more than 50 percentage points of the outstanding stock of a company by certain stockholders or public groups.

The Company previously completed a study to assess whether an ownership change, as defined by Section 382 of the Code, had occurred from the Company's formation through December 31, 2013. Based upon this study, the Company determined that several ownership changes had occurred. Accordingly, the Company reduced its deferred tax assets related to the federal NOL carryforwards and the federal R&D credit carryforwards that are anticipated to expire unused as a result of these ownership changes. These tax attributes were excluded from deferred tax assets with a corresponding reduction of the valuation allowance with no net effect on income tax expense or the effective tax rate. The Company completed a study through December 31, 2021 and concluded no additional ownership changes occurred. Future ownership changes may further limit the Company's ability to utilize its remaining tax attributes.

Federal and state NOL carryforwards of $19.2 million and $143.4 million will expire in 2031 and 2024 respectively unless utilized. The remaining federal and state NOL carryforwards will begin to expire in 2032 and 2025, respectively. At December 31, 2022, the Company had federal and state charitable contribution carryforwards of $179.8 million which will begin to expire in 2023 unless utilized. At December 31, 2022, the Company had $74.2 million of federal R&D credit carryforwards, of which $0.3 million will expire in 2023 unless utilized, and the remaining federal R&D credit carryforwards will begin to expire in 2024. At December 31, 2022, the Company had state R&D credit carryforwards of approximately $3.2 million that will begin to expire in 2025 and $19.1 million that have no expiration date. At December 31, 2022, the Company had foreign NOL carryforwards of approximately $266.5 million that will expire in 2023 unless utilized and $4.4 million that have no expiration date. The Company continues to record the deferred tax assets related to these attributes, subject to valuation allowance, until expiration occurs.

The components of the deferred tax assets are as follows (in thousands):

	December 31,	
	2022	2021
Deferred tax assets		
NOL carryforwards	$ 225,993	$ 229,476
R&D credit carryforwards	83,074	74,702
Stock-based compensation	51,661	51,170
Charitable contributions	42,677	41,355
Capitalized R&D	38,507	—
Intangibles	24,030	6,741
Lease liabilities	14,730	15,550
Other	13,770	11,700
Total deferred tax assets	494,442	430,694
Valuation allowance	(481,210)	(416,630)
Deferred tax liabilities		
Right-of-use assets	(13,203)	(14,063)
Property and equipment	(29)	(1)
Total deferred tax liabilities	(13,232)	(14,064)
Total net deferred tax assets	$ —	$ —

Realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain. Accordingly, the deferred tax assets have been fully offset by a valuation allowance. The valuation allowance increased by approximately $64.6 million in 2022 primarily due to an increase in deferred tax assets generated from capitalization of research and development expenses, R&D credits and stock-based compensation and limitation on future executive stock compensation, offset in part by the expiration of Switzerland NOLs, and the remeasurement of deferred tax balance for changes in state tax rates.

An accounting policy may be selected to either (i) treat taxes due on future U.S. inclusions in taxable income related to global intangible low-taxed income (“GILTI”) as a current-period expense when incurred or (ii) factor such amounts into a company’s measurement of its deferred taxes. We have elected to account for GILTI as a period cost.

During 2019, Switzerland implemented tax reform that is effective for tax years 2020 and forward. As a result, the Company has remeasured the deferred tax assets, primarily comprised of NOL carryforwards, at the amount and rate in which it is anticipated they will reverse. The adjustments made to the deferred tax assets are offset by a valuation allowance.

A reconciliation of income taxes to the amount computed by applying the statutory federal income tax rate to the pretax loss is summarized as follows (in thousands):

	Years Ended December 31,		
	2022	2021	2020
Amounts computed at statutory federal rate	$ (44,823)	$ (35,179)	$ (59,004)
Stock-based compensation and other permanent differences	9,050	6,696	991
Write-off of IP R&D	2,449	1,277	9,565
R&D credits	(9,974)	(11,727)	(17,909)
Change in valuation allowance	11,227	36,099	5,925
State taxes	(2,232)	(2,617)	(5,038)
Contingencies	6,993	3,879	2,665
Foreign rate differential	(1,971)	2,857	4,208
Limitation on executive compensation	3,918	1,808	3,705
Deferred rate adjustment	922	(2,424)	2,130
Switzerland tax reform	—	(923)	53,045
Expiration of attributes	16,142	—	—
GILTI	10,804	—	—
Other	26	605	328
Income tax expense	$ 2,531	$ 351	$ 611

The tax years 2003-2021 remain open to examination by the major taxing jurisdictions to which the Company is subject.

The Company recognizes a tax benefit from an uncertain tax position when it is more likely than not that the position will be sustained upon examination. The Company recorded an uncertain tax position reserve of $5.1 million, $4.1 million and $2.9 million for the years ended December 31, 2022, 2021 and 2020, respectively. Due to the valuation allowance recorded against the Company's deferred tax assets, approximately $1.2 million of the total unrecognized tax benefits as of December 31, 2022 would reduce the annual effective tax rate if recognized. The Company does not anticipate that the amount of unrecognized tax benefits as of December 31, 2022 will significantly change within the next twelve months. The Company's practice is to recognize interest and/or penalties related to uncertain income tax positions in income tax expense. The Company had no material interest and/or penalties accrued on the Company's consolidated balance sheets at December 31, 2022 or 2021, respectively. Further, the Company recognized an immaterial amount of interest and/or penalties in the statement of operations for the years ended December 31, 2022, 2021 and 2020, respectively, related to uncertain tax positions.

The following table provides a reconciliation of changes in unrecognized tax benefits (in thousands):

	Years Ended December 31,		
	2022	2021	2020
Balance at beginning of period	$ 13,923	$ 9,843	$ 6,945
Additions related to current period tax positions	5,140	3,973	2,722
Additions related to prior period tax positions	38	140	212
Reductions related to prior period tax positions	(37)	(33)	(36)
Balance at end of period	$ 19,064	$ 13,923	$ 9,843

9. Commitments and Contingencies

License and Merger Agreements

The Company has entered into various collaboration, licensing and merger agreements which provide the Company with rights to certain know-how, technology and patent rights. The agreements generally include upfront license fees, development and commercial milestone payments upon achievement of certain clinical and commercial development and annual net sales milestones, as well as royalties calculated as a percentage of product revenues, with rates that vary by agreement. The Company incurred $88.7 million, $11.0 million and $72.7 million in upfront and license payments in the years ended December 31, 2022, 2021 and 2020, respectively. These upfront and license payments were included in the research and development expenses in the consolidated statements of operations as there was no alternative future use associated with the payments. As of December 31, 2022, the Company may be required to make milestone payments up to $1.6 billion in the aggregate, of which, $40.0 million may be paid in the next 12 months for the first commercial sale of trofinetide in North America if the FDA approves trofinetide for the treatment of Rett syndrome.

In May 2018, the Company signed an Exclusivity Deed (the Deed) with Neuren that provided for exclusive negotiations for a period of three months from the date of the Deed. Under the terms of the Deed, the Company invested $3.1 million to subscribe for 1,330,000 shares of Neuren and paid $0.9 million for the exclusive right to negotiate a deal with Neuren, which was recorded in selling, general and administrative expenses in the consolidated statements of operations in the second quarter of 2018. At December 31, 2022, the Company continues to hold the equity securities as a strategic investment in which the Company does not have a controlling interest or significant influence. Publicly held equity securities are measured using quoted prices in their respective active markets with changes recorded through other expense on the statements of operations. Net gain on the strategic investments recognized in other income in the consolidated statements of operations for the year ended December 31, 2022 was $3.5 million, net gain on strategic investments recognized for the year ended December 31, 2021 was $2.3 million and net loss on strategic investments recognized for the year ended December 31, 2020 was $1.0 million. As of December 31, 2022 and 2021, the aggregate carrying amount of the Company’s strategic equity investment was $7.2 million and $3.6 million, respectively, included in other assets on the consolidated balance sheets.

In August 2018, the Company entered into a license agreement with Neuren and obtained exclusive North American rights to develop and commercialize trofinetide for Rett syndrome and other indications. Under the terms of the agreement, Neuren received an upfront payment of $10.0 million and is eligible to receive milestone payments of up to $455.0 million, based on the achievement of certain development and annual net sales milestones, including a $40.0 million payment upon the Company’s first commercial sale of trofinetide in North America. In addition, Neuren is eligible to receive tiered, escalating, double-digit percentage royalties based on net sales. The license agreement was accounted for as an asset acquisition and the upfront cash payment of $10.0 million was recorded in research and development expenses in the consolidated statements of operations in the third quarter of 2018, as there is no alternative use for the asset.

Under the license agreement, Neuren and its non-Company licensees and sublicensees are prohibited from developing or commercializing any other product (including Neuren’s other existing compounds) for Rett syndrome, or for any other indication being developed pursuant to the agreement, in North America. Furthermore, with respect to Neuren’s development or commercial activities outside North America, (i) if Neuren is developing trofinetide for the same indication as the Company, Neuren is obligated to use commercially reasonable efforts to conduct such activities in a manner that minimizes any adverse impact on trofinetide in North America, and (ii) if Neuren is developing trofinetide for a different indication, Neuren may not undertake such activities if the Company believes, and the joint steering committee determines, they would be reasonably likely to materially adversely affect the development and commercialization of trofinetide in North America.

In January 2022, the Company entered into a license and collaboration agreement with Stoke to discover, develop and commercialize novel RNA-based medicines for the potential treatment of severe and rare genetic neurodevelopmental diseases of the CNS. The collaboration includes SYNGAP1 syndrome, Rett syndrome (MECP2), and an undisclosed neurodevelopmental target. For the SYNGAP1 program, the two companies will jointly share global research, development and commercialization responsibilities and share 50/50 in all worldwide costs and future profits. In addition, Stoke is eligible to receive potential development, regulatory, first commercial sales and sales milestones. For the MECP2 program and the undisclosed neurodevelopmental program, the Company acquired an exclusive worldwide license to develop and commercialize MECP2 program and the undisclosed neurodevelopmental program. Stoke will lead research and pre-clinical development activities, while the Company will lead clinical development and commercialization activities. The Company will fund research and pre-clinical development activities related to these two targets and Stoke is eligible to receive potential development, regulatory, first commercial sales and sales milestones as well as tiered royalty payments on worldwide sales

starting in the mid-single digit range and escalating to the mid-teens based on revenue levels. Under the terms of the agreement, the Company paid Stoke a $60.0 million upfront payment which was accounted for as an asset acquisition and was expensed to research and development in the first quarter of 2022 as there is no alternative use for the asset. The Company may be required to pay up to an additional $907.5 million in milestones as well as royalties on future sales.

Corporate Credit Card Program

In connection with the Company's credit card program, the Company established a letter of credit in 2016 for $2.0 million, which has automatic annual extensions and is fully secured by restricted cash.

Fleet Program

In connection with the Company's fleet program, the Company established a letter of credit for $0.4 million, which has automatic annual extensions and is fully secured by restricted cash.

Legal Proceedings

On July 24, 2020, the Company filed complaints against (i) Aurobindo Pharma Limited and its affiliate Aurobindo Pharma USA, Inc. and (ii) Teva Pharmaceuticals USA, Inc. and its affiliate Teva Pharmaceutical Industries Ltd., and on July 30, 2020, the Company filed complaints against (i) Hetero Labs Limited and its affiliates Hetero Labs Limited Unit-V and Hetero USA Inc., (ii) MSN Laboratories Private Ltd. and its affiliate MSN Pharmaceuticals, Inc., and (iii) Zydus Pharmaceuticals (USA) Inc. and its affiliate Cadila Healthcare Limited. These complaints, which were filed in the United States District Court for the District of Delaware, allege infringement of certain of the Company's Orange Book-listed patents covering NUPLAZID. The cases have been assigned to the Honorable Richard G. Andrews. On September 1, 2020, Aurobindo filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity. On September 22, 2020, the Company filed its answer to Aurobindo's counterclaims. On August 31, 2020, Teva filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity. On September 21, 2020, the Company filed its answer to Teva's counterclaims. On October 5, 2020, Hetero filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity. On October 26, 2020, the Company filed its answer to Hetero's counterclaims. On September 30, 2020, MSN filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity regarding certain of the Company's Orange Book-listed patents covering NUPLAZID. On November 5, 2020, the Company filed its first amended complaint against MSN in the United States District Court for the District of Delaware, alleging infringement of certain of the Company's Orange Book-listed patents covering NUPLAZID. On November 19, 2020, MSN filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity regarding certain of the Company's Orange Book-listed patents covering NUPLAZID. On December 10, 2020, the Company filed its answer to MSN's counterclaims. On November 2, 2020, Zydus filed its answer and counterclaims seeking declaratory judgments of noninfringement and invalidity. On November 23, 2020, the Company filed its answer to Zydus's counterclaims. On December 8, 2020, the parties' joint proposed scheduling order was entered by Judge Andrews. On April 7, 2021, the Company filed its first amended complaints against Hetero and Teva and its second amended complaint against MSN, to include an additional Orange Book-listed patent covering NUPLAZID. On April 8, 2021, the Company filed its first amended complaint against Zydus and on April 9, 2021, the Company filed its first amended complaint against Aurobindo. On April 20, 2021, MSN filed its answer, affirmative defenses, and counterclaims to the Company's second amended complaint, seeking declaratory judgments of noninfringement and invalidity regarding certain of the Company's Orange Book-listed patents covering NUPLAZID. On April 21, 2021, Teva filed its answer, affirmative defenses, and counterclaims to the Company's first amended complaint, seeking declaratory judgments of noninfringement and invalidity. On April 22, 2021, Zydus filed its answer, affirmative defenses, and counterclaims to the Company's first amended complaint, seeking declaratory judgments of noninfringement and invalidity.

On April 22, 2021, Aurobindo filed its answer, affirmative defenses, and counterclaims to the Company's first amended complaint, seeking declaratory judgments of noninfringement and invalidity. On May 11, 2021, the Company filed its answer to MSN's counterclaims. On May 12, the Company filed its answer to Teva's counterclaims. On May 13, the Company filed its answer to Zydus's counterclaims and its answer to Aurobindo's counterclaims. A joint trial in the matters is scheduled for May 15, 2023. The Company entered into an agreement effective April 22, 2021 with Hetero settling all claims and counterclaims in the litigation. The agreement allows Hetero to launch its generic pimavanserin product on July 27, 2038, subject to certain triggers for earlier launch. The Hetero case was dismissed by joint agreement on May 3, 2021.

On August 27, 2021, the Company filed its second amended complaint against Zydus to include an additional Orange Book-listed patent covering NUPLAZID. On September 10, 2021, Zydus filed its answer, affirmative defenses, and counterclaims to the Company's second amended complaint, seeking declaratory judgments of noninfringement and invalidity. Also on September 10, 2021, the parties filed their Joint Claim Construction Chart. On October 1, 2021, the Company filed its answer to Zydus's counterclaims. On November 30, 2021,the Company filed a stipulation and proposed order to dismiss two of its Orange Book-listed patents covering NUPLAZID against Teva, which was ordered by the Court on December 1, 2021. On January 28, 2022, the parties filed their Joint Claim Construction Brief and Appendix. On February 23, 2022, the Court heard oral argument on claim construction. On April 6, 2022, the Court issued a Memorandum Opinion construing several terms at issue, adopting the Company's construction on two terms, Defendants' construction on two terms, and one agreed-upon construction. On February 28, 2022, the Company filed a stipulation and proposed order to dismiss one patent against MSN, which was ordered by the Court on March 1, 2022. On March 10, 2022, the Company filed a stipulation and proposed order to dismiss one patent against Teva, which was ordered by the Court on March 10, 2022. On March 22, 2022, the Company filed a stipulation and proposed order to dismiss seven patents against Aurobindo, which was ordered by the Court on March 22, 2022. On March 30, 2022, the Company filed a stipulation and proposed order to dismiss two patents against Zydus, which was ordered by the Court on March 31, 2022. On April 22, 2022, the Company filed a stipulation and proposed order of non-infringement against Aurobindo regarding certain of the Company's Orange Book-listed patents covering NUPLAZID, which was ordered by the Court on April 22, 2022. On April 26, 2022, the Company filed a stipulation and proposed order of non-infringement against MSN regarding certain of the Company's Orange Book-listed patents covering NUPLAZID, which was ordered by the Court on April 26, 2022. On April 26, 2022, the Company filed a stipulation and proposed order of non-infringement against Teva regarding certain of the Company's Orange Book-listed patents covering NUPLAZID, which was ordered by the Court on April 27, 2022. On May 10, 2022, the Company filed its second amended complaint against Teva to include an additional Orange Book-listed patent covering NUPLAZID. On May 18, 2022, the Company filed a stipulation and proposed order of non-infringement against Zydus regarding certain of the Company's Orange Book-listed patents covering NUPLAZID, which was ordered by the Court on May 19, 2022. On May 24, 2022, Teva filed its answer, affirmative defenses, and counterclaims to the Company's second amended complaint, seeking declaratory judgments of noninfringement and invalidity regarding certain of the Company's Orange Book-listed patents covering NUPLAZID. On June 1, 2022, the Company filed its second amended complaint against Aurobindo alleging infringement of certain of the Company's Orange Book-listed patents covering NUPLAZID. On June 2, 2022, the Company filed its third amended complaint against Zydus alleging infringement of certain of the Company's Orange Book-listed patents covering NUPLAZID. On June 14, 2022, the Company filed its answer to Teva's counterclaims. June 15, 2022, Aurobindo filed its answer, affirmative defenses, and counterclaims to the Company's second amended complaint, seeking declaratory judgments of noninfringement and invalidity regarding certain of the Company's Orange Book-listed patents covering NUPLAZID. On June 16, 2022, Zydus filed its answer, affirmative defenses, and counterclaims to the Company's third amended complaint, seeking declaratory judgments of noninfringement and invalidity regarding certain of the Company's Orange Book-listed patents covering NUPLAZID. On July 6, 2022, the Company filed its answer to Aurobindo's counterclaims.

On September 7, 2022, the consolidated cases were reassigned to the Honorable Judge Gregory B. Williams. On September 30, 2022, the Company filed a stipulation and proposed order to stay the claims currently asserted against Teva and for Teva to be bound by the result of the litigation rendered against the remaining Defendants, which was ordered by the Court on October 4, 2022. On October 21, 2021, the Company filed complaints against Aurobindo, MSN and Zydus in the United States District Court for the District of Delaware alleging infringement of an additional Orange Book-listed patent covering NUPLAZID.

On April 19, 2021, a purported stockholder of the Company filed a putative securities class action complaint (captioned Marechal v. Acadia Pharmaceuticals, Inc., Case No. 21-cv-0762) in the U.S. District Court for the Southern District of California against the Company and certain of the Company's current executive officers. The complaint generally alleges that defendants violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 by failing to disclose that the materials submitted in support of its sNDA seeking approval of pimavanserin for the treatment of hallucinations and delusions associated with dementia-related psychosis contained statistical and design deficiencies and that the FDA was unlikely to approve the sNDA in its current form. The complaint seeks unspecified monetary damages and other relief. On September 29, 2021, the Court issued an order designating lead plaintiff and lead counsel. On December 10, 2021, lead plaintiff filed an amended complaint. Defendants filed a motion to dismiss the amended complaint on February 15, 2022. Lead plaintiff filed an opposition to Defendants' motion to dismiss on April 18, 2022, and Defendants filed a reply on June 2, 2022. On September 27, 2022, the Court issued an order denying Defendants' motion to dismiss. Defendants filed their answer to the amended complaint on October 19, 2022, and filed a motion for reconsideration on October 25, 2022. On February 3, 2023, the Court issued an order denying the motion for reconsideration.

Management currently believes that none of the foregoing claims or other actions pending against the Company as of December 31, 2022 is likely to have, individually or in the aggregate, a material adverse effect on the Company's business, liquidity, financial position, or results of operations. Given the unpredictability inherent in litigation, however, the Company cannot predict the outcome of these matters. The Company is unable to estimate possible losses or ranges of losses that may result from these matters, and therefore it has not accrued any amounts in connection with these matters other than attorneys' fees incurred to date.

10. Leases

The Company leases facilities and certain equipment under noncancelable operating leases that expire at various dates through February 2031. Under the terms of the facilities leases, the Company is required to pay its proportionate share of property taxes, insurance and normal maintenance costs.

In 2015, the Company entered into a master lease agreement giving the Company the ability to lease vehicles under operating leases with initial terms of 36 months from the date of delivery. In 2018, the lease agreement was terminated and a new master lease agreement was entered into with a new vendor giving the Company the ability to lease vehicles under operating leases with initial terms ranging from 12 to 50 months from the date of delivery. In 2021, the Company entered into a new master lease agreement giving the Company the ability to lease vehicles under operating leases with initial terms of 60 months from the date of delivery.

The Company leases facilities and certain equipment under noncancelable operating leases with remaining lease terms of 1.0 year to 8.4 years, some of which include options to extend the lease for up to two five-year terms. These optional periods were not considered in the determination of the right-of-use asset or the lease liability as the Company did not consider it reasonably certain that it would exercise such options.

The operating lease costs were as follows (in thousands):

	Years Ended December 31,		
	2022	2021	2020
Operating lease cost	$ 8,095	$ 8,874	$ 6,917

Supplemental cash flow information related to the Company's leases were as follows (in thousands):

	Years Ended December 31,	
	2022	2021
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 9,083	$ 5,303
Right-of-use assets obtained in exchange for operating lease obligations:	3,871	17,272

The balance sheet classification of the Company's lease liabilities was as follows (in thousands):

	December 31, 2022	December 31, 2021
Operating lease liabilities		
Current portion included in accrued liabilities	$ 9,305	$ 8,304
Operating lease liabilities	52,695	56,126
Total operating lease liabilities	$ 62,000	$ 64,430

Maturities of lease liabilities were as follows (in thousands):

	Operating Leases
Years ending December 31,	
2023	$ 9,562
2024	9,112
2025	9,192
2026	8,556
2027	8,282
Thereafter	28,687
Total lease payments	73,391
Less:	
Imputed interest	(11,391)
Total operating lease liabilities	$ 62,000

Operating lease liabilities are based on the net present value of the remaining lease payments over the remaining lease term. In determining the present value of lease payments, the Company uses its incremental borrowing rate based on the information available at the lease commencement date. As of December 31, 2022 and 2021, the weighted average remaining lease term was 7.9 years and 9.0 years, respectively, and the weighted average discount rate used to determine the operating lease liability was 4.4% and 4.3%, respectively.

In the fourth quarter of 2018, the Company entered into an agreement to lease the 4th and 5th floors of corporate office space in San Diego, California with total minimum lease payments of $50.4 million over an initial term of 10 years and 9 months. In February 2020, the Company entered into the first amendment to the lease agreement to lease the 2nd floor of corporate office space in San Diego, California with total minimum lease payments of $25.3 million over an initial term of approximately 10 years and 7 months. In March 2020, the Company entered into the second amendment to the lease agreement which increased the total minimum lease payments of the original corporate office space to $51.4 million. In the third quarter of 2020, the lease for the 4th and 5th floors of corporate office space commenced and the Company capitalized a right of use asset and related lease liability of $40.3 million. In the first quarter of 2021, the lease for the 2nd floor of corporate office space commenced and the Company capitalized a right of use asset and related lease liability of $19.2 million. In connection with this lease and the amendment, the Company established a letter of credit for $3.1 million, which has automatic annual extensions and is fully secured by restricted cash.

11. Selected Quarterly Financial Data (Unaudited)

The following financial information reflects all normal recurring adjustments, which are, in the opinion of management, necessary for a fair statement of the results of the interim periods. Summarized quarterly data for the years ended December 31, 2022 and 2021 are as follows (in thousands, except per share data):

	Fiscal Year 2022 Quarters				
	1st	2nd	3rd	4th	Total
Revenues	$ 115,468	$ 134,563	$ 130,714	$ 136,490	$ 517,235
Gross profit[(1)]	$ 112,518	$ 131,896	$ 128,578	$ 134,076	$ 507,068
Net loss	$ (113,056)	$ (34,011)	$ (27,183)	$ (41,725)	$ (215,975)
Basic and diluted net loss per share[(2)]	$ (0.70)	$ (0.21)	$ (0.17)	$ (0.26)	$ (1.34)

	Fiscal Year 2021 Quarters				
	1st	2nd	3rd	4th	Total
Revenues	$ 106,554	$ 115,221	$ 131,612	$ 130,758	$ 484,145
Gross profit[(1)]	$ 104,369	$ 112,695	$ 127,924	$ 128,314	$ 473,302
Net loss	$ (66,448)	$ (43,871)	$ (14,457)	$ (43,094)	$ (167,870)
Basic and diluted net loss per share[(2)]	$ (0.42)	$ (0.27)	$ (0.09)	$ (0.27)	$ (1.05)

(1) Determined by subtracting cost of product sales from product sales, net.

(2) Basic and diluted net loss per common share are computed independently for each quarter and the full year based upon respective average shares outstanding. Therefore, the sum of the quarterly net loss per common share amounts may not equal the annual amounts reported.

SCHEDULE II – Valuation and Qualifying Accounts
(in thousands)

	Balance at Beginning of Period	Additions: Provision Related to Current Period Sales	Deductions: Actual Distribution Fees, Discounts and Chargebacks Related to Current Period Sales	Deductions: Actual Distribution Fees, Discounts and Chargebacks Related to Prior Period Sales	Balance at End of Period
Allowance for distribution fees, discounts and chargebacks:					
For the year ended December 31, 2020	$ 2,576	$ 51,684	$ (47,463)	$ (2,576)	$ 4,221
For the year ended December 31, 2021	$ 4,221	$ 72,011	$ (63,544)	$ (4,221)	$ 8,467
For the year ended December 31, 2022	$ 8,467	$ 80,836	$ (69,913)	$ (8,467)	$ 10,923

Exhibit 10.12

December 19, 2022

Doug Williamson
douglasjwilliamson@gmail.com

Dear Doug:

We are delighted to offer you the position of Executive Vice President, Research and Development with Acadia Pharmaceuticals Inc. As discussed with you, this offer is contingent subject to your satisfactory completion of a background investigation. The start date for your employment with Acadia will be mutually agreed to by you and Steve Davis. The following summarizes the terms of our offer:

Base Salary
Your semi-monthly salary will be $22,500.00 ($540,000.00 annualized). Your position is full time and is exempt/salaried.

Performance Bonus
You will be eligible to receive an annual performance bonus currently targeted at 50% of your annual base salary and will be granted in at the discretion of the CEO and Board based upon its evaluation of the Company's and your achievements specific to established performance goals.

Equity Award

a) Initial Grant. Subject to approval of the Compensation Committee of the Board of Directors, within 45 days of the commencement of your employment, you will be granted a new hire equity award consisting of nonqualified stock options ("Options") and restricted stock units ("RSUs") having an aggregate fair value of $3,250,000.00 at the date of grant. 75% of the aggregate equity award fair value will be granted in the form of Options and 25% in the form of RSUs. The Options and the RSUs are intended to be an inducement material to your entering into employment with the Company and will be subject to the terms of the Company's 2022 Inducement Plan approved by the Compensation Committee of the Company's Board of Directors pursuant to the "inducement exception" provided under Nasdaq Market Place Rule 5635(c)(4) and Nasdaq IM-5635-1.

b) Vesting. Both the Options and the RSUs will vest over four years, as follows: one-quarter (25%) of the Options will vest on the first anniversary of the grant, and 1/48th of the Options will vest each month thereafter for the following three years; and one-half (50%) of the RSUs will vest on the second anniversary of the grant, and one-fourth of the RSUs will vest on each of the third and fourth anniversaries of the grant; provided that you remain employed by the Company at each such vesting date.

c) Other Terms. The Options and RSUs will be subject to the terms of the Company's Inducement Plan and the related award notices and agreements.

Severance Benefits

You will be entitled to participate in our *Management Severance Benefit Plan* and *Change in Control Severance Benefit Plan* which have both been shared with you.

Benefits

You will be eligible to participate in the Company's standard benefit plans. Note that these plans for new employees are effective on the employment start date and enrollment.

Vacation and Holidays

You will receive 20 vacation days each year, accrued monthly and paid holidays in accordance with the Company's annual holiday schedule, with a vacation accrual cap of 1.75 times your annual vacation accrual.

401(k)

You will have the opportunity to participate in the Company's 401(k) plan. The plan provides for enrollment on a monthly basis.

Employee Stock Purchase Plan

You will have the opportunity to enroll in the Company's Employee Stock Purchase Plan (ESPP), which provides for the purchase of shares of Acadia common stock through payroll deductions. The ESPP currently provides for twice-annual purchases in May and November.

Inventions and Non-Disclosure

You will be required to sign the *Inventions and Non-Disclosure Agreement*, attached to this letter, as a condition of your employment.

Restrictive Covenants, Trade Secrets and Confidential Information from Current or Prior Employers

You agree that you will not bring or use any confidential information or trade secrets from current or former employers during your employment with the Company. You agree and acknowledge that you have notified the Company of any and all non-compete, non-solicitation, confidentiality or other restrictive agreements with your current or former employers that could impact your employment with the Company. Prior to your start date, you will provide the Company with copies of such agreements. You agree that you have reviewed the duties and responsibilities of your new position and that no contractual or other restrictions will prevent you from performing those duties.

Full-time Employment

During the Employment Period, you shall devote full time business energies, interest, abilities, and productive time to the Company. You are not precluded from engaging in civic, charitable or religious activities and, in the Company's discretion may be allowed to serve on boards of directors of for profit Companies or other organizations that do not present any conflict with the interests of the Company or otherwise adversely affect your performance of your duties.

You will not, during the employment with the Company, compete with the Company, either directly or indirectly, in any manner or capacity, as adviser, consultant, principal, agent, partner, officer, director, employee, member of any association or otherwise, in any phase of developing, manufacturing or marketing any product or service that is in the same field of use or that otherwise competes with a product or service that is offered, is actively under development, or is actively being considered for development by the Company.

You agree not to acquire, assume or participate in, directly or indirectly, any position, investment or interest that Employee knows or should know is adverse or antagonistic to the Company, its business, clients, strategic partners, investors or prospects.

No Solicitation

You agree that for a period of twelve (12) months immediately following the termination of your employment with the Company, whether you resign voluntarily or are terminated by the Company involuntarily, you will not directly or

indirectly hire, solicit, or recruit, or attempt to hire, solicit, or recruit, any employee of the Company to leave their employment with the Company, nor will you contact any employee of the Company, or cause an employee of the Company to be contacted, for the purpose of leaving employment with the Company.

Authorization to Work

Federal law requires that you provide the Company with the legally required proof of your identity and authorization to work in the United States. We will furnish you with a list of acceptable documents. This documentation must be provided within three (3) business days of the date your employment begins, or our employment relationship with you may be terminated.

COVID-19 Vaccination

Acadia has a mandatory COVID-19 vaccination policy requiring all employees to be fully vaccinated and verify their vaccination status. This offer is contingent on you being fully vaccinated and verified prior to your start date.

At-Will; Entire Agreement

Your employment is at-will and for no specified period, and either you or Acadia may terminate this employment relationship at any time and for any reason. At all times during your employment, you will be subject to the direction and policies from time to time established by Senior Management and the company.

Severability

The unenforceability, invalidity, or illegality of any provision of this Agreement shall not render any other provision of this Agreement unenforceable, invalid, or illegal.

By signing this offer, you hereby certify that you have not knowingly withheld any information that might adversely affect your chances for employment and that the answers given by you are true and correct to the best of your knowledge. You understand that any omission or misstatement of material fact used to secure employment shall be grounds for rejection of this offer or for immediate discharge if you are employed, regardless of the time elapsed before discovery.

We look forward to your joining Acadia Pharmaceuticals Inc. and believe that it will be a mutually beneficial experience. This contingent offer, if not accepted, will expire 3 days from receipt.

Please indicate your agreement with the above terms by signing below.

Sincerely,
/s/ Rob Ackles
Rob Ackles
Senior Vice President, Chief

People Officer Accepted and agreed:
/s/ Doug Williamson
12/19/2022

Exhibit 10.36

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) IS THE TYPE THAT THE REGISTRANT TREATS AS PRIVATE OR CONFIDENTIAL.

LEASE AND LEASE AGREEMENT

Between

Boston Properties Limited Partnership

The Landlord

And

ACADIA PHARMACEUTICALS INC.

The Tenant

For Leased Premises In

502 Carnegie Center
Princeton, New Jersey

May 15, 2018

Prepared by:

Gregory S. Ricciardi
Boston Properties

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TABLE OF EXHIBITS

LEASE AND LEASE AGREEMENT, dated as of May 15, 2018, between Boston Properties Limited Partnership, a Delaware limited partnership with offices c/o Boston Properties at 101 Carnegie Center, Suite 104, Princeton, New Jersey 08540 (the "Landlord"), and ACADIA Pharmaceuticals Inc., a Delaware corporation, with its principal office at 3611 Valley Centre Drive, Suite 300, San Diego, California 92130 (the "Tenant").

Subject to all the terms and conditions set forth below, the Landlord and the Tenant hereby agree as follows:

1 Definitions. Certain terms and phrases used in this Agreement (generally those whose first letters are capitalized) are defined in Exhibit E attached hereto and, as used in this Agreement, they shall have the respective meanings assigned or referred to in that exhibit.

2 Lease of the Leased Premises.

2.1 The Landlord shall, and hereby does, lease to the Tenant, and the Tenant shall, and hereby does, accept and lease from the Landlord, the Leased Premises during the Term. The Leased Premises consist of 25,429 square feet of gross rentable floor space on the third floor of 502 Carnegie Center, as more fully described in the definition of Leased Premises set forth in Exhibit E attached hereto.

2.2 The Landlord shall, and hereby does, grant to the Tenant, and the Tenant shall, and hereby does, accept from the Landlord, the non-exclusive right to use the Common Facilities during the Term for itself, its employees, other agents and Guests in common with the Landlord, any tenants of Other Leased Premises, any of their respective employees, other agents and guests and such other persons as the Landlord may, in the Landlord's reasonable discretion, determine from time to time.

2.3 In the event that the Tenant exercises the Right to Lease Additional Space in accordance with the terms and conditions of subsection 44.2 of this Agreement, the Landlord shall lease to the Tenant, and the Tenant shall accept and lease from the Landlord, the subject Additional Leased Premises from the respective commencement date thereof for the term provided in subsection 44.2 of this Agreement.

3 Rent.

3.1 The Tenant shall punctually pay the Rent for the Leased Premises for the Term to the Landlord in the amounts and at the times set forth below, without bill or other demand and without any offset, deduction or, except as may be otherwise specifically set forth in this Agreement, abatement whatsoever.

3.2 The Basic Rent for the Leased Premises during the Initial Term shall be at the rate per year set forth below:

Period	Annual Rental Rate
Commencement Date through day immediately preceding Rent Commencement Date	[***]
Rent Commencement Date through Lease Year One	[***]
Lease Year Two	[***]
Lease Year Three	[***]
Lease Year Four	[***]
Lease Year Five	[***]
Lease Year Six	[***]
Lease Year Seven	[***]

The annual rate of Basic Rent for the Leased Premises during the Renewal Term shall be calculated as set forth in subsection 6.3 of this Agreement. The annual rate of Basic Rent applicable to any Additional Leased Premises during the Initial Term shall be as set forth in subsection 44.2 of this Agreement.

3.3 The Tenant shall punctually pay the applicable Basic Rent in equal monthly installments in advance on the first day of each month during the Term, with the exception of Basic Rent for the first full calendar month of the Initial Term immediately following the Rent Commencement Date (if the Rent Commencement Date occurs on other than the first day of a calendar month) or for the first full calendar month of the Initial Term commencing on the Rent Commencement Date (if the Rent Commencement Date occurs on the first day of a calendar month), and for any period of less than a full calendar month at the beginning of the Term commencing on the Rent Commencement Date. The Tenant shall pay the Basic Rent for the first full calendar month of the Initial Term immediately following the Rent Commencement Date (if the Rent Commencement Date occurs on other than the first day of a calendar month) or for the first full calendar month of the Initial Term commencing on the Rent Commencement Date (if the Rent Commencement Date occurs on the first day of a calendar month) upon execution and delivery of this Agreement. The Tenant shall punctually pay the Basic Rent for a period of less than a full calendar month at the beginning of the Term commencing on the Rent Commencement Date on the Rent Commencement Date.

3.4 The Basic Rent and the Additional Rent for any period of less than a full calendar month shall be prorated. In the event that any installment of Basic Rent cannot be calculated by the time payment is due, such portion as is then known or calculable shall be then due and payable; and the balance shall be due upon the Landlord's giving written notice to the Tenant of the amount of the balance due.

3.5 The Additional Rent for the Leased Premises during the Term shall be promptly paid by the Tenant in the respective amounts and at the respective times set forth in this Agreement.

3.6 That portion of any amount of Rent or other amount due under this Agreement which is not paid on the day it is first due (or by the fifth day after the day it is first due in the case of the first payment in any period of twelve consecutive calendar months that is not paid on the day it is first due) shall incur a late charge equal to the sum of: (i) [***] percent of that portion of any amount of Rent or other amount due under this Agreement which is not paid on the day it is first due (or by the fifth day after the day it is first due in the case of the first payment in any period of twelve consecutive calendar months that is not paid on the day it is first due) and (ii) interest on that portion of any amount of Rent or other amount due under this Agreement which is not paid on the day it is first due (or by the fifth day after the day it is first due in the case of the first payment in any period of twelve consecutive calendar months that is not paid on the day it is first due) at the Base Rate(s) in effect from time to time plus [***] additional percentage points from the day such portion is first due through the day of receipt thereof by the Landlord. Any such late charge due from the Tenant shall be due immediately.

3.7 Any amount of Rent or other amount which is due upon execution and delivery of this Agreement shall be paid by the Tenant to the Landlord at the Landlord's office at 101 Carnegie Center, Suite 104, Princeton, New Jersey 08540. Otherwise, the Tenant shall make all payments of Rent or other amounts due under this Agreement to the Landlord by either (i) electronic funds (ACH) transfer to Bank of America (Dallas, Texas), [***], (ii) overnight courier to Bank of America Wholesale Lockbox, Boston Properties Limited Partnership [***], or (iii) mail to Boston Properties Limited Partnership, [***]. By notice to the Tenant from time to time, the Landlord may change the foregoing payment instructions with regard to amounts not previously paid.

3.8 If any sum payable by the Tenant under this Agreement is paid by check which is returned due to insufficient funds, stop payment order, or otherwise, then: (a) such event shall be treated as a failure to pay such sum when due; and (b) in addition to all other rights and remedies of the Landlord hereunder, the Landlord shall be entitled (i) to impose a returned check charge of [***] Dollars ($[***]) to cover the Landlord's administrative expenses and overhead for processing, and (ii) after the second occurrence of a returned check in any twelve (12) month period, or after a third occurrence over the Term, to require that all future payments be remitted by ACH or wire transfer, money order, or cashier's or certified check.

4 Term.

4.1 The Initial Term shall commence on the Commencement Date and shall continue for seven (7) years and three (3) months from the beginning of the Initial Year, unless sooner terminated in accordance with section 24 or subsection 44.3 of this Agreement. The Term shall commence on the Commencement Date and shall continue until

the later of the conclusion of the Initial Term or the conclusion of any Renewal Term, unless sooner terminated in accordance with section 24 or subsection 44.3 of this Agreement.

4.2 Unless the condition contemplated by subsection 4.3 of this Agreement occurs, the Commencement Date shall be the Substantial Completion Date, adjusted to an earlier date to compensate the Landlord for the cumulative number of days of Tenant Delay. The target Commencement Date is November 1, 2018.

4.3 In the event the Tenant takes possession of, or occupies, the Leased Premises for the conduct of business earlier than the Substantial Completion Date, the Commencement Date shall be the first date of such earlier taking of possession or occupancy, as adjusted to an earlier date to compensate the Landlord for the cumulative number of days of Tenant Delay. Tenant entering the Premises to install tenant improvements, fixtures and furniture shall not constitute taking possession or occupancy.

4.4 Once it is ascertained in accordance with subsections 4.2 and 4.3 of this Agreement, the Landlord shall give prompt notice of the Commencement Date to the Tenant; and if the Tenant does not object thereto by notice given to the Landlord within ten (10) days of the Landlord's notice, the date set forth in the Landlord's notice shall thereafter be conclusively presumed to be the Commencement Date.

4.5 The Rent Commencement Date shall be that date which is the day immediately following the expiration of the "Rent Concession Period", as hereinafter defined. The period from and including the Commencement Date through the day preceding the Rent Commencement Date (the "Rent Concession Period") shall be three (3) months. By way of example only, if the Commencement Date is November 1, 2018, then the Rent Commencement Date would be February 1, 2019.

5 Preparation of the Leased Premises.

5.1 The Tenant shall accept the Leased Premises on the Commencement Date in its then "AS IS" condition, which shall be with all Building Systems in proper working order and the Leased Premises and Building in material compliance with all applicable laws. Landlord shall cause all warranties of the general contractor and other contractors and suppliers performing the work for Tenant's Buildout to extend to Tenant and to be for not less than one year after the Commencement Date.

5.2 The timely preparation of the Tenant Plan through architects and engineers, licensed in New Jersey, selected by the Tenant shall be the Tenant's obligation and expense. The Tenant Plan shall be prepared consistently with the Building plans and specifications and the Landlord's tenant fitout and alteration guidelines in effect. The Tenant shall deliver the complete Tenant Plan to the Landlord not later than the Tenant Plan Due Date. During the twenty (20) days immediately succeeding the submission of the complete Tenant Plan to the Landlord, the Tenant Plan shall be subject to the Landlord's and its engineers' reasonable review, comment, consultation and objection with respect to any lack of consistency with the Building plans and specifications or the Landlord's tenant fitout and alteration guidelines then in effect, any structural changes to, or any changes in the exterior of, the Building or any portion thereof required thereby, any changes to Systems required thereby, any interface or connection with Systems or any adverse effect upon the functional utility or rental value of the Leased Premises. If the Landlord timely and otherwise properly objects to the Tenant Plan by notice to the Tenant setting forth therein with particularity any of the specified reasons in reasonable detail, the Tenant shall have its architects and engineers revise the Tenant Plan and deliver the revised complete Tenant Plan to the Landlord within ten (10) days of the Landlord's giving timely notice of its objection to the Tenant. In addition, the Tenant shall revise and deliver a revised complete Tenant Plan to the Landlord within ten (10) days of the Landlord's giving notice to the Tenant of the Municipality's objections to the Tenant Plan. The Tenant shall select the colors of the paint to be applied and the flooring to be installed as part of the Tenant's Buildout from the Landlord's samples by the Tenant Plan Due Date. Notwithstanding anything contained in this subsection 5.2 to the contrary, the Landlord's review and approval of the Tenant Plan and consent to perform work described therein, shall be for the sole purpose set forth above and shall not imply the Landlord's review of the same, or obligate the Landlord to review the same, for quality, design sufficiency, completeness, compliance with applicable governmental laws, rules, regulations and building codes or any requirements of insurers of the Building and the other requirements of this Agreement with respect to the Tenant's insurance obligations (herein called "Insurance Requirements") nor deemed a waiver of the Tenant's obligations under this Agreement with respect to applicable governmental laws, rules, regulations and building codes and Insurance Requirements. Accordingly, notwithstanding that any Tenant Plan is reviewed by the Landlord or its space planner, architect, engineers and consultants, and notwithstanding any advice or assistance which may be rendered to the Tenant by the Landlord or

the Landlord's space planner, architect, engineers, and consultants, the Landlord shall have no liability whatsoever in connection therewith and shall not be responsible for any omissions or errors contained in the Tenant Plan.

5.3 As soon as practicable after the receipt by the Landlord of the final Tenant Plan, the Landlord shall solicit bids using an "open book" bidding process for the construction of the work called for by the Tenant Plan from at least three general contractors. The Landlord and the Tenant shall promptly review the bids after receipt. Following bid review and qualification for the Tenant's Buildout, the Landlord and the Tenant shall promptly select in a writing the best qualified and quantified general contractor; but if the Landlord and the Tenant are unable to agree upon the selection of the best qualified and quantified general contractor by the end of the bid review and qualification period for the Tenant's Buildout, the selection of the best qualified and quantified general contractor to be awarded the contract for the Tenant's Buildout shall be made by the Landlord acting in good faith in its sole, reasonable discretion.

5.4 The Landlord shall give notice to the Tenant of the Landlord's price to the Tenant to perform the Tenant's Buildout utilizing the general contractor selected in accordance with subsection 5.3 of this Agreement. The Landlord's price shall include [***] percent of the Landlord's general contractor's aggregate price (which shall include additional costs of any change orders) for the Tenant's Buildout as the Landlord's design review supervision fee and [***] percent of the Landlord's general contractor's aggregate price (which shall include additional costs of any change orders requested by Tenant) for the Tenant's Buildout as the Landlord's construction supervision fee. The Landlord shall pay the cost of the design and construction of the Tenant's Buildout up to the maximum amount of $[***] (the "Landlord's Contribution"). The Tenant shall pay the cost of the design and construction of the Tenant's Buildout in excess of the Landlord's Contribution and of any alterations, improvements or other modifications to the Leased Premises in addition to the Tenant's Buildout made at the request of the Tenant. The Tenant shall pay such price to the Landlord in proportion to the progress of such work, as and when billed by the Landlord at intervals, corresponding to the invoicing by the Landlord's general contractor, with payment of any remaining final balance due from the Tenant upon substantial completion of such work.

5.5 Landlord shall obtain and make arrangements for all necessary construction permits for the alterations, improvement and other modifications set forth in the Tenant Plan to be performed by the Landlord. The Landlord shall cause its selected general contractor to construct the Tenant's Buildout in a good and workmanlike manner and in accordance with the Tenant Plan and in compliance with all applicable laws, rules, regulations, codes and ordinances, including, but not limited to, the Americans with Disabilities Act ("ADA"). The construction of any changes to the Tenant Plan made by the Tenant shall be an additional expense to the Tenant.

5.6 The Tenant shall timely comply on a continuing basis with each of its obligations under sections 12 and 14 of this Agreement in advance of, and while, any of its employees, contractors or other agents is present in the Building or on the Property performing the work called for by the Tenant Plan or other preparation of the Leased Premises.

5.7 The Tenant, using its own contractors, desires to install telecommunications and data wiring and cabling and furniture, fixtures and equipment in the Leased Premises prior to the Substantial Completion Date. The Landlord shall give to the Tenant at least thirty (30) days' advance notice of the Landlord's projected date of such Substantial Completion and upon receipt of such notice the Tenant and its contractors shall be granted access to the Leased Premises to perform such installations. The Tenant and its contractors may have access to the Leased Premises prior to the Substantial Completion Date to perform such installations provided that (i) the Tenant complies with its obligations under section 12 and 14 of this Agreement, and (ii) the Tenant hereby acknowledges that such access and installation may cause Tenant Delay. Notwithstanding the foregoing, any telecommunications and data wiring and cabling in the Leased Premises existing prior to Tenant's entry shall be removed by Landlord, at Landlord's sole cost and expense.

6 Options.

6.1 If, prior to the date of exercise thereof (a)(i) no Event of Default shall have occurred or (ii) if an Event of Default shall have occurred, the Tenant shall have previously cured it in full or the Landlord shall have waived it and (b) there shall not have been a History of Recurring Events of Default, the Tenant shall have one option, exercisable exclusively at the time and in the manner set forth below in subsection 6.2 of this Agreement, to extend the Term for one additional period of five (5) years' duration. The period to which this option relates shall commence upon the end of the Initial Term. This option is the "Option to Renew."

6.2 In the event the Tenant is interested in exercising the Option to Renew, the Tenant shall give timely notice of the Tenant's interest to the Landlord no earlier than fifteen (15), and no later than thirteen (13), months prior to the end of the Initial Term. Within four (4) weeks of the giving of such notice, the Landlord shall give notice to the Tenant of the Landlord's quotation of the Market Rental Rate for the Leased Premises during the Renewal Term. In the event the Tenant desires to exercise the Option to Renew, the Tenant shall do so exclusively by giving timely notice thereof to the Landlord no earlier than thirteen (13), and no later than twelve (12), months prior to the end of the Initial Term, and indicating in that notice whether or not the Landlord's quotation of the Market Rental Rate for the Leased Premises during the Renewal Term, as set forth in the Landlord's notice, is acceptable. In the event the Tenant fails timely to notify the Landlord of its interest in exercising the Option to Renew or timely to exercise the Option to Renew, the Option to Renew shall thereupon expire.

6.3 The Basic Rent for the Leased Premises during the Renewal Term shall be the Landlord's quotation of the Market Rental Rate for the Leased Premises during the Renewal Term, as set forth in the Landlord's notice to the Tenant, unless the Tenant, in the Tenant's notice contemplated by the third sentence of subsection 6.2 of this Agreement affirmatively indicates that the Landlord's quotation of the Market Rental Rate set forth in the Landlord's notice is not acceptable, in which case the Basic Rent for the Leased Premises during the Renewal Term shall the Market Rental Rate as determined in accordance with the procedure described in subsection 33.1 of this Agreement.

6.4 The Option to Renew may not be exercised by any person other than the original Tenant, ACADIA Pharmaceuticals, Inc., or an assignee of the Tenant to which the Tenant has assigned this Agreement in accordance with the terms of subsection 17.6 of this Agreement, or successor by merger or other acquisition. In the event the Tenant assigns this Agreement or sublets, or licenses the use or occupancy of, the Leased Premises or any portions thereof other than in accordance with subsection 17.6 of this Agreement, or attempts to do so:

6.4.1 any Option to Renew which the Tenant has theretofore properly exercised with respect to a Renewal Term that has not yet actually commenced shall be rescinded, if the Landlord so elects by notice to the Tenant, to the same extent as if it had not been exercised at all; and

6.4.2 any Option to Renew or any other type of option or optional right exercisable by the Tenant not theretofore timely and otherwise properly exercised by the Tenant shall thereupon expire.

7 Use and Occupancy.

7.1 The Tenant shall use the Leased Premises during the Term exclusively as general, administrative and executive offices and for uses ancillary to Tenant's business.

7.2 In connection with the Tenant's use and occupancy of the Leased Premises and use of the Common Facilities, the Tenant shall observe, and the Tenant shall cause the Tenant's employees, other agents and Guests to observe, each of the following:

7.2.1 the Tenant shall not do, or permit or suffer the doing of, anything which might materially increase the risk of, or damage from, fire, explosion or other casualty;

7.2.2 the Tenant shall not do, or permit or suffer the doing of, anything which would have the effect of (a) increasing any premium for any liability, property, casualty or excess coverage insurance policy otherwise payable by the Landlord or any tenant of Other Leased Premises or (b) making any such types or amounts of insurance coverage unavailable or less available to the Landlord or any tenant of Other Leased Premises;

7.2.3 to the extent they are not inconsistent with this Agreement, the Tenant and the Tenant's employees, other agents and Guests shall comply with the Building Rules and Regulations attached hereto as Exhibit D, and with any changes made therein by the Landlord if, with respect to any such changes, the Landlord shall have given notice of the particular changes to the Tenant and such changes shall not materially adversely affect the conduct of the Tenant's business in the Leased Premises or access and use of parking and Common Facilities to the extent granted herein;

7.2.4 the Tenant and the Tenant's employees, other agents and Guests shall not create, permit or continue any Nuisance in or around the Carnegie Center Complex, the Leased Premises, the Other Leased Premises, the Building, the Common Facilities and the Property;

7.2.5 the Tenant and the Tenant's employees, other agents and Guests shall not permit the Leased Premises to be regularly occupied by more than one individual per two hundred forty (240) square feet of gross rentable floor space of the Leased Premises;

7.2.6 the Tenant and the Tenant's employees, other agents and Guests shall comply with all Federal, state and local statutes, ordinances, rules, regulations and orders as they pertain to the Tenant's use and occupancy of the Leased Premises, to the conduct of the Tenant's business and to the use of the Common Facilities, except that this subsection shall not require the Tenant to make any structural or other changes that may be required thereby that are generally applicable to the Building or Common Facilities as a whole, or to changes required based on laws in effect prior to the Commencement Date;

7.2.7 the Tenant and the Tenant's employees, other agents and Guests shall comply with the requirements of the Board of Fire Underwriters (or successor organization) and of any insurance carriers providing liability, property, casualty or excess insurance coverage regarding the Property, the Building, the Common Facilities or any portions thereof, any other improvements on the Property and the Carnegie Center Complex, except that this subsection shall not require the Tenant to make any structural or other changes that may be required thereby that are generally applicable to the Building as a whole, or to changes required based on requirements in effect prior to the Commencement Date;

7.2.8 the Tenant and the Tenant's employees, other agents and Guests shall not bring or discharge any substance (solid liquid or gaseous), or conduct any activity, in or on the Carnegie Center Complex, the Property, the Building, the Common Facilities or the Leased Premises that shall have been identified by any Federal, state or local statute (including, without limiting the generality of the foregoing, the Spill Compensation and Control Act (58 N.J.S.A. 23.11 et seq.) and the Industrial Site Recovery Act (13 N.J.S.A. 1 K-6 et seq.), as they may be amended), ordinance, rule, regulation or order as toxic or hazardous to health or to the environment;

7.2.9 the Tenant and the Tenant's employees, other agents and Guests shall not draw electricity in the Leased Premises in excess of the rated capacity of the electrical conductors and safety devices including, without limiting the generality of the foregoing, circuit breakers and fuses, by which electricity is distributed to and throughout the Leased Premises and, without the prior written consent of the Landlord in each instance, shall not connect any fixtures, appliances or equipment to the electrical distribution system serving the Building and the Leased Premises other than typical professional office equipment such as computers, computer servers, typewriters, copiers, telephone systems, coffee machines and table top microwave ovens, none of which, considered individually and in the aggregate, overall and per fused or circuit breaker protected circuit, shall exceed the above limits;

7.2.10 on a timely basis the Tenant shall pay directly and promptly to the respective taxing authorities any taxes (other than Taxes) charged, assessed or levied exclusively on the Leased Premises or arising exclusively from the Tenant's use and occupancy of the Leased Premises; and

7.2.11 the Tenant shall not initiate any appeal or contest of any assessment or collection of Taxes for any period without, in each instance, the prior written consent of the Landlord which, without being deemed unreasonable, the Landlord may withhold if the Building was not [***] percent occupied by paying tenants throughout that period or if the Tenant is not joined by tenants of Other Leased Premises that leased throughout that period, and that are then leasing, at least [***] percent of all Other Leased Premises, determined by their gross rentable floor space.

8 Utilities, Services, Maintenance and Repairs.

8.1 The Landlord shall provide or arrange for the provision of:

8.1.1 such maintenance and repair of the Building (except the Leased Premises and Other Leased Premises); the Common Facilities; and the building standard heating, ventilation and air conditioning systems, any plumbing systems and the electrical systems in the Building, the Common Facilities, the Leased Premises and Other Leased Premises as is customarily provided for first class office buildings in the immediate area;

8.1.2 such janitorial services for the Building, the Leased Premises and Other Leased Premises as are set forth in Exhibit F attached hereto and such garbage removal from the Building and the Common Facilities as is customarily provided for first class office buildings in the immediate area;

8.1.3 water to the Building and, if the appropriate plumbing has been installed therein, the Leased Premises and Other Leased Premises;

8.1.4 sewage disposal for the Building;

8.1.5 passenger elevator service for the Building;

8.1.6 snow and ice clearance from, and sweeping of, Parking Facilities and driveways which are part of the Property or the Common Facilities;

8.1.7 the maintenance of landscaping which is part of the Property or the Common Facilities;

8.1.8 a perimeter card reader system which permits entry to the Building on a twenty-four hour, seven day a week basis; and

8.1.9 a roving security guard for the Carnegie Center Complex on a twenty-four hour, seven day a week basis.

8.2 The Landlord shall provide or arrange for the provision of:

8.2.1 such maintenance and repair of the Leased Premises as is customarily provided for leased premises in first class office buildings in the immediate area, except for refinishing walls and wall treatments, base, ceilings, floor treatments and doors in general from time to time or for gouges, spots, marks, damage or defacement caused by anyone other than the Landlord, its employees and other agents, and except for the Tenant's furniture, furnishings, equipment including, without limiting the generality of the foregoing, any supplemental air conditioning equipment installed by or at the request of the Tenant at any time, and other property;

8.2.2 such maintenance and repair of the Other Leased Premises as is customarily provided for leased premises in first class office buildings in the immediate area, except for refinishing walls and wall treatments, base, ceilings, floor treatments and doors in general from time to time or for gouges, spots, marks, damage or defacement caused by anyone other than the Landlord, its employees and other agents, and except for the respective tenants' furniture, furnishings, equipment and other property;

8.2.3 the electricity required for the operation of the Building, the Property and the Common Facilities during Regular Business Hours and, on a reduced service basis, during other than Regular Business Hours, and, at all times, the electricity required for the Leased Premises and Other Leased Premises;

8.2.4 such building standard heat, ventilation and air conditioning for the Building, the Leased Premises and Other Leased Premises as is customarily provided for first class office buildings in the immediate area for the comfortable use of the Building during Regular Business Hours; and

8.2.5 heated water to the Building (except the Leased Premises and Other Leased Premises, unless the appropriate plumbing, fixtures and hot water heating units have been installed therein); and

8.2.6 during other than Regular Business Hours, upon request either (i) using a dial-up procedure provided by the Landlord, or (ii) faxed by the Tenant to the Landlord or submitted to the Landlord using the Landlord's Internet based service request system, in either case, by (a) 3:00 p.m. on the business day in question, or (b) in the case of any weekend day, Legal Holiday or the morning hours of a business day immediately following a weekend or Legal Holiday, the Tenant shall submit its request by 3:00 p.m. on the business day immediately prior to such day(s) in question, the Landlord shall provide heat, ventilation and air conditioning on a full service basis on such day(s) in question at a cost to the Tenant of $[***] per hour or partial hour of use per floor.

8.3 Except as specifically set forth in subsections 8.1 and 8.2.1 of this Agreement, the Tenant shall maintain and repair the Leased Premises and any equipment above building standard installed by, or at the request of, the Tenant and keep the Leased Premises and the foregoing in as good condition and repair, reasonable wear and use excepted, as the Leased Premises are upon the respective completion of any improvements contemplated by sections 5 or 12 of this Agreement.

8.4 Notwithstanding anything contained in this Agreement to the contrary, if the Landlord or any Affiliate of the Landlord has elected to qualify as a real estate investment trust ("REIT"), any service required or permitted to be performed by the Landlord pursuant to this Agreement, the charge or cost of which may be treated as impermissible tenant service income under the laws governing a REIT, may be performed by a taxable REIT subsidiary that is affiliated with either the Landlord or the Landlord's property manager, an independent contractor of the Landlord or the Landlord's property manager (the "Service Provider"). If the Tenant is subject to a charge under this Agreement for any such service, then, at the Landlord's direction, the Tenant shall pay such charge either to the Landlord for further payment to the Service Provider or directly to the Service Provider, and, in either case, (i) the Landlord shall credit such payment against Additional Rent due from the Tenant under this Agreement for such service, and (ii) such payment to the Service Provider shall not relieve the Landlord from any obligation under this Agreement concerning the provisions of such service.

9 Allocation of the Expense of Utilities, Services, Maintenance, Repairs and Taxes.

9.1 All Tenant Electric Charges shall be borne by the Tenant.

9.2 Between the Commencement Date and the end of the No Pass Through Period, the Tenant's Share of all Operational Expenses and Taxes incurred during such period shall be borne by the Landlord.

9.3 Between the day after the end of the No Pass Through Period and the end of the Term, the Tenant's Share of Operational Expenses and Taxes incurred during each annual or shorter period ending on (a) December 31 of each year and (b) the end of the Term shall be borne as follows:

9.3.1 the Tenant's Share of: Operational Expenses and Taxes incurred during each such period of twelve (12) months (or shorter period), up to the amounts of Base Year Operational Expenses and Base Year Taxes, respectively (or proportional amount thereof for periods shorter than twelve (12) months), shall be borne by the Landlord; and

9.3.2 the Tenant's Share of: the amounts by which Operational Expenses and Taxes incurred during each such period of twelve (12) months (or shorter period) exceed Base Year Operational Expenses and Base Year Taxes, respectively (or proportional amount thereof for periods shorter than twelve (12) months) shall be allocated to, and borne by, the Tenant as more specifically set forth in section 10 of this Agreement.

10 Computation and Payment of Allocated Expenses of Utilities, Services, Maintenance, Repairs, Taxes and Capital Expenditures.

10.1 The Tenant shall promptly pay the following additional amounts to the Landlord at the respective times set forth below:

10.1.1 commencing with the first day after the end of the No Pass Through Period, and on the first day of each month thereafter during the Term, one-twelfth (1/12) of the Tenant's Share of the amount by which Taxes for the then current calendar year exceeds Base Year Taxes, computed in accordance with subsection 10.5 of this Agreement;

10.1.2 within twenty (20) days of the Landlord's giving notice to the Tenant after the close of each calendar year closing during the Term, commencing with the first calendar year closing after the close of the No Pass Through Period, and after the end of the Term, the Tenant's Share of the difference between the Landlord's previously projected amount of Taxes for such period and the actual amount of Taxes for such period, in either case in excess of Base Year Taxes, computed in accordance with subsection 10.6 of this Agreement (unless such difference is a negative amount, in which case the Landlord shall credit such difference against any amounts next due from the Tenant under subsections 10.1.1 and 10.5 of this Agreement);

10.1.3 commencing with the first day after the end of the No Pass Through Period, and on the first day of each month thereafter during the Term, one-twelfth (1/12) of the Tenant's Share of the amount by which Operational Expenses for the then current calendar year exceed Base Year Operational Expenses, computed in accordance with subsection 10.7 of this Agreement;

10.1.4 within twenty (20) days of the Landlord's giving notice to the Tenant after the close of each calendar year closing during the Term, commencing with the first calendar year closing after the close of the No Pass

Through Period, and after the end of the Term, the Tenant's Share of the difference between the Landlord's previously projected amount of Operational Expenses for such period and the actual amount of Operational Expenses for such period, in either case in excess of Base Year Operational Expenses, computed in accordance with subsection 10.8 of this Agreement (unless such difference is a negative amount, in which case the Landlord shall credit such difference against any amounts next due from the Tenant under subsections 10.1.3 and 10.7 of this Agreement);

10.1.5 commencing with the first day of the first month after the Landlord gives any notice contemplated by subsection 10.9 of this Agreement to the Tenant and continuing on the first day of each month thereafter until the earlier of (a) the end of the Term or (b) the last month of the useful life set forth in the respective notice, one-twelfth (1/12) of the Tenant's Share of any Annual Amortized Capital Expenditure, computed in accordance with subsection 10.9 of this Agreement;

10.1.6 on the first day of each month during the Term, the monthly Tenant Electric Charges, computed in accordance with subsection 10.10 of this Agreement; and

10.1.7 promptly as and when billed therefor by the Landlord, the amount of any expense which would otherwise fall within the definition of Operational Expenses, but which is specifically paid or incurred by the Landlord for operation and maintenance of the Building, the Common Facilities or the Property outside Regular Business Hours at the specific request of the Tenant or the amount of any expenditure incurred for maintenance or repair of damage to the Building, the Common Facilities, the Property, the Leased Premises or the Other Leased Premises caused directly or indirectly, in whole or in part, by the active or passive negligence or intentional act of the Tenant or any of its employees, other agents or guests.

10.2 "Operational Expenses" means all expenses paid or incurred by the Landlord in connection with the Property, the Building, the Common Facilities and any other improvements on the Property, provided such improvement does not serve only the Landlord or a specific Other Tenant individually, and their operation and maintenance, adjusted in the manner described in the definition of Base year Operational Expenses set forth in Exhibit E attached hereto during the Base year and each subsequent year to assume [***] percent occupancy of the Building at any time when the Building is less than [***] percent occupied (other than Taxes (which are separately allocated to the Tenant in accordance with subsections 10.1.1 and 10.1.2 of this Agreement), Capital Expenditures (which are separately allocated to the Tenant in accordance with subsection 10.1.5 of this Agreement) and those expenses contemplated by subsections 10.6 and 10.8 of this Agreement)) including, without limiting the generality of the foregoing:

10.2.1 Utilities Expenses;

10.2.2 the reasonable and customary expense of providing the services, maintenance and repairs contemplated by subsections 8.1, 8.2.1 and 8.2.2 of this Agreement, whether furnished by the Landlord's employees or by independent contractors or other agents;

10.2.3 wages, salaries, fees and other compensation and payments and payroll taxes and contributions to any social security, unemployment insurance, welfare, pension or similar fund and payments for other fringe benefits required by law or union agreement (or, if the employees or any of them are not represented by a union, then payments for benefits comparable to those generally required by union agreement in first class office buildings in the immediate area which are unionized) made to or on behalf of any employees of the Landlord performing services rendered in connection with the operation and maintenance of the Building, the Common Facilities and the Property, including, without limiting the generality of the foregoing, elevator operators, elevator starters, window cleaners, porters, janitors, maids, miscellaneous handymen, watchmen, persons engaged in patrolling and protecting the Building, the Common Facilities and the Property, carpenters, engineers, firemen, mechanics, electricians, plumbers, other tradesmen, other persons engaged in the operation and maintenance of the Building, Common Facilities and Property, Building superintendent and assistants, Building manager, and clerical and administrative personnel, provided all such costs are allocated fairly across the Building, Common Facilities and Property;

10.2.4 the uniforms of all employees and the cleaning, pressing and repair thereof;

10.2.5 premiums and other charges incurred by the Landlord with respect to all insurance relating to the Building, the Common Facilities and the Property and the operation and maintenance thereof, including, without limitation: property and casualty, fire and extended coverage insurance, including windstorm, flood, hail, explosion, other casualty, riot, rioting attending a strike, civil commotion, aircraft, vehicle and smoke insurance; public liability

insurance; elevator, boiler and machinery insurance; excess liability coverage insurance; use and occupancy insurance; workers' compensation and health, accident, disability and group life insurance for all employees; and casualty rent insurance;

10.2.6 sales and excise taxes and the like upon any Operational Expenses and Capital Expenditures;

10.2.7 management fees of any independent managing agent for the Property, the Building or the Common Facilities; and if there shall be no independent managing agent, or if the managing agent shall be a person affiliated with the Landlord, the management fees that would customarily be charged for the management of the Property, the Building and the Common Facilities by an independent, first class managing agent in the immediate area, that the management fee shall initially be at the rate of [***] percent ([***]%), and which percentage shall not exceed [***] percent ([***]%) during the balance of the Initial Term of this Agreement and provided further there shall be no increase in the percentage until after the Base Year and thereafter no increase of more than [***] percent ([***]%) in the percentage during the first three Lease Year and no more then [***] percent ([***]%) thereafter;

10.2.8 the cost of replacements for tools, supplies and equipment used in the operation, service, maintenance, improvement, inspection, repair and alteration of the Building, the Common Facilities and the Property, provided all such costs are allocated fairly across the Building, Common Facilities and Property;

10.2.9 the cost of repainting or otherwise redecorating any part of the Building or the Common Facilities;

10.2.10 decorations for the lobbies and other Common Facilities in the Building;

10.2.11 the cost of licenses, permits and similar fees and charges related to operation, repair and maintenance of the Building, the Property and the Common Facilities;

10.2.12 an allocable share of service, replacement, repair, maintenance and other charges assessed from time to time by the Carnegie Center Owners Association II to the Building;

10.2.13 all costs of applying and reporting for the Building or any part thereof to seek or maintain certification under the U.S. EPA's Energy Star® rating system, the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system or a similar system or standard; and

10.2.14 any and all other expenditures of the Landlord in connection with the operation, alteration, repair or maintenance of the Property, the Common Facilities or the Building as a first-class office building and facilities in the immediate area which are properly treated as an expense fully deductible as incurred in accordance with generally applied real estate accounting practice.

10.3 "Capital Expenditures" means the following expenditures incurred or paid by the Landlord in connection with the Property, the Building, the Common Facilities and any other improvements on the Property, which in each case shall be amortized over the full estimate useful life of the capital asset acquired in accordance with the schedule attached hereto as Exhibit I:

10.3.1 all costs and expenses incurred by the Landlord in connection with retro-fitting the entire Building or the Common Facilities, or any portion thereof, to comply with any change in Federal, state or local statute, rule, regulation, order or requirement, which change takes effect after the one year anniversary date of the Commencement Date;

10.3.2 all costs and expenses incurred by the Landlord to replace and improve components of or within the Property, the Building or the Common Facilities or portions thereof for the purpose of cost efficiency for the continued operation of the Property, the Building and the Common Facilities as a first class office complex in the immediate area, which change takes effect after the one year anniversary date of the Commencement Date; and

10.3.3 all costs and expenses incurred by the Landlord in connection with the installation of any energy, labor or other cost saving or life safety device or system on the Property or in the Building or the Common Facilities, which change takes effect after the one year anniversary date of the Commencement Date.

10.4 Neither “Operational Expenses” nor “Capital Expenditures” shall include any of the following:

10.4.1 principal or interest on indebtedness, debt amortization or ground rent paid by the Landlord in connection with any mortgages, deeds of trust or other financing encumbrances, or ground leases of the Building or the Property;

10.4.2 any capital expenditure, or amortized portion thereof, other than those included in the definition of Capital Expenditures set forth in subsection 10.3 above;

10.4.3 expenditures for any leasehold improvement which is made in connection with the preparation of any portion of the Building for occupancy by any tenant or which is not made generally to or for the benefit of the Building or the Property;

10.4.4 the cost of repairs or replacements incurred by reason of fire or other casualty, or condemnation (other than costs not in excess of the deductible on any insurance maintained by the Landlord which provides a recovery for such repair or replacement), to the extent the Landlord actually receives proceeds of property and casualty insurance policies or condemnation awards or would have received such proceeds had the Landlord maintained the insurance required to be maintained by the Landlord under this Agreement;

10.4.5 legal fees, space planner’s fees, architect’s fees, leasing and brokerage commissions, advertising and promotional expenditures and any other marketing expense incurred in connection with the leasing of space in the Building (including new leases, lease amendments, lease terminations and lease renewals);

10.4.6 expenditures for the salaries and benefits of the executive officers, if any, of the Landlord; and

10.4.7 depreciation for the Building, the Common Facilities and any other improvement on the Property.

10.5 As soon as practicable after the close of the No Pass Through Period and December 31 of each year thereafter, any portion of which is during the Term, the Landlord shall furnish the Tenant with a notice setting forth:

10.5.1 Taxes billed, or if a bill has not then been received for the entire period, the Landlord’s projection of Taxes to be billed, for the then current calendar year;

10.5.2 the amount of Base Year Taxes;

10.5.3 the amount, if any, by which item 10.5.1 above exceeds item 10.5.2 above; and

10.5.4 the Tenant’s Share of item 10.5.3 above.

10.6 As soon as practicable after December 31 of each year during the Term and after the end of the Term, the Landlord shall furnish the Tenant with a notice setting forth:

10.6.1 the actual amount of Taxes for the preceding calendar year in excess of Base Year Taxes (or proportional amount thereof for shorter periods during the Term);

10.6.2 the Landlord’s previously projected amount of Taxes for the preceding calendar year in excess of Base Year Taxes (or proportional amount thereof for shorter periods during the Term);

10.6.3 the difference obtained by subtracting item 10.6.2 above from item 10.6.1 above; and

10.6.4 the Tenant’s Share of item 10.6.3 above.

10.7 As soon as practicable after the close of the No Pass Through Period and December 31 of each year thereafter, any portion of which is during the Term, the Landlord shall furnish the Tenant with a notice setting forth:

10.7.1 the Landlord’s projection of annual Operational Expenses for the current period (if any portion thereof is during the Term);

10.7.2 the amount of the Base Year Operational Expenses;

10.7.3 the amount, if any, by which item 10.7.1 above exceeds item 10.7.2 above; and

10.7.4 the Tenant's Share of item 10.7.3 above.

10.8 As soon as practicable after December 31 of each year during the Term and after the end of the Term, the Landlord shall furnish the Tenant with a notice setting forth:

10.8.1 the actual amount of Operational Expenses for the preceding calendar year in excess of Base Year Operational Expenses (or proportional amount thereof for shorter periods during the Term);

10.8.2 the Landlord's previously projected amount of Operational Expenses for the preceding calendar year in excess of Base Year Operational Expenses (or proportional amount thereof for shorter periods during the Term);

10.8.3 the difference obtained by subtracting item 10.8.2 above from item 10.8.1 above; and

10.8.4 the Tenant's Share of item 10.8.3 above.

10.9 As soon as practicable after incurring any Capital Expenditure, the Landlord shall furnish the Tenant with a notice setting forth:

10.9.1 a description of the Capital Expenditure and the subject thereof;

10.9.2 the date the subject of the respective Capital Expenditure was first placed into service and the period of useful life selected by the Landlord in connection with the determination of the Annual Amortized Capital Expenditure;

10.9.3 the amount of the Annual Amortized Capital Expenditure; and

10.9.4 the Tenant's Share of item 10.9.3 above.

10.10 Tenant Electric Charges shall be initially charged at the rate of $[***] per rentable square foot per year. From time to time, whenever the Landlord's estimate of Tenant Electric Charges changes, the Landlord shall furnish the Tenant with a notice setting forth its estimate of Tenant Electric Charges per month. Unless the Tenant desires to question the Landlord's then most recent estimate of Tenant Electric Charges exclusively in the manner set forth below, the Landlord's then most recent estimate shall be binding and shall continue in effect until any question raised by the Tenant is otherwise resolved in accordance with this subsection 10.10 of this Agreement. If the Tenant desires to question the Landlord's estimate of Tenant Electric Charges, provided that the Tenant has completed its initial build-out of the Leased Premises, has fully staffed the Leased Premises and is utilizing such quantity of utility service which the Tenant reasonably projects will be the average quantity of utility service which the Tenant will use throughout the Term, the Tenant shall give notice to the Landlord of its desire. Upon receipt of the Tenant's notice, the Landlord shall obtain, at the Tenant's expense, a reputable, independent electrical engineer's formal written estimate and computation of the Tenant Electric Charges. The engineer's estimate and computation of Tenant Electric Charges shall thereupon control for a twelve (12) month period commencing with the date as of which it is given effect as to Tenant Electric Charges, and until the Landlord furnishes the Tenant with a subsequent notice setting forth its estimate of Tenant Electric Charges per month, except to the extent that the Landlord may increase them in proportion to increases in Utilities Expenses during the same period. Alternatively, if feasible, Tenant may elect to have a meter or sub-meter installed at Tenant's sole cost and expense, including any cost to remove or replace same, to measure Tenant's actual utility usage for each month. In which event, Tenant's Electric Charge shall be at the utility rate for electricity actually used.

10.11 Subject to the provisions of this subsection 10.11 and provided that no Event of Default exists, the Tenant shall have the right to examine the correctness of the Landlord's statement of the actual amount of Operational Expenses and Taxes as set forth in the notices required by subsections 10.6 and 10.8 or any item contained therein:

10.11.1 Any request for examination with respect to any calendar year during the Term may be made by notice from the Tenant to the Landlord no more than ninety (90) days after the date (the "Operational Expenses and Taxes Statement Date") on which the Landlord provides to the Tenant a statement of the actual amount of the Operational Expenses and Taxes with respect to such calendar year and only if the Tenant shall have fully paid such amount. Such notice shall set forth in reasonable detail the matters questioned. Any such examination must be completed and the results communicated to the Landlord no more than one hundred eighty (180) days after the Operational Expenses and Taxes Statement Date; provided Landlord has provided Tenant and its representative prompt access to all books and records requested by them to complete such examination.

10.11.2 The Tenant hereby acknowledges and agrees that the Tenant's sole right to contest an Operational Expenses and Taxes statement shall be as expressly set forth in this subsection 10.11. The Tenant hereby waives any and all other rights pursuant to applicable law to inspect the Landlord's books and records and/or to contest such Operational Expenses and Taxes statement. If the Tenant shall fail to timely exercise the Tenant's right to inspect the Landlord's books and records as provided in this subsection 10.11 with respect to any calendar year, or if the Tenant shall fail to timely communicate to the Landlord the results of the Tenant's examination as provided in this subsection 10.11 with respect to any calendar year, the Landlord's statement of Operational Expenses and Taxes with respect to such calendar year shall be conclusive and binding on the Tenant.

10.11.3 So much of the Landlord's books and records pertaining to the Operational Expenses and Taxes for the specific matters questioned by the Tenant for the calendar year included in the Landlord's statement shall be made available to the Tenant either electronically or during normal business hours at the offices where the Landlord keeps such books and records or at another location, as determined by the Landlord, within a reasonable time after the Landlord timely receives the notice from the Tenant to make such examination pursuant to this subsection 10.11.

10.11.4 The Tenant shall have the right to make such examination no more than once with respect to any calendar year for which the Landlord has given the Tenant a statement of the Operational Expenses and Taxes.

10.11.5 Such examination may be made only by a qualified employee of the Tenant or a qualified independent certified public accounting firm approved by the Landlord, which approval will not be unreasonably withheld or delayed. No examination shall be conducted by an examiner who is to be compensated, in whole or in part, on a contingent fee basis.

10.11.6 As a condition to performing any such examination, the Tenant and its examiners shall be required to execute and deliver to the Landlord an agreement, in form acceptable to the Landlord, agreeing to keep confidential any information which it discovers about the Landlord, the Property, the Building or the Leased Premises in connection with such examination.

10.11.7 No subtenant shall have any right to conduct any such examination and no assignee may conduct any such examination with respect to any period during which the assignee was not in possession of the Leased Premises**.**

10.11.8 All costs and expenses of any such examination shall be paid by the Tenant. In the event the examination by Tenant shows that Tenant has overpaid any amount, Landlord shall promptly credit Tenant an amount equal to such overpayment against any Rent becoming due under this Lease, or if the amount exceeds the remaining rent due, promptly reimburse Tenant such excess amount.

10.12 The mere enumeration of an item within the definitions of Operational Expenses and Capital Expenditures in subsections 10.2 and 10.3 of this Agreement, respectively, shall not be deemed to create an obligation on the part of the Landlord to provide such item unless the Landlord is affirmatively required to provide such item elsewhere in this Agreement.

10.13 In the event that there is located in the Leased Premises a data center containing high density computing equipment, as defined in the U.S. EPA's Energy Star® rating system ("Energy Star"), the Landlord may require the installation in accordance with Energy Star of separate metering or check metering equipment, the Tenant being responsible for the costs of any such meter or check meter and the installation and connectivity thereof. The Tenant shall directly pay to the utility all electric consumption on any such meter and shall pay to the Landlord, as Additional Rent, all electric consumption on any such check meter within thirty (30) days after being billed thereof by the Landlord, in addition to other electric charges payable by the Tenant under this Agreement.

10.14 In the event that the Tenant purchases any utility service directly from the provider, the Tenant shall promptly provide to the Landlord either permission to access the Tenant's usage information from the utility service provider or copies of the utility bills for the Tenant's usage of such services in a format reasonably acceptable to the Landlord.

11 Leasehold Improvements, Fixtures and Trade Fixtures. All leasehold improvements to the Leased Premises, fixtures installed in the Leased Premises and the blinds and floor treatments or coverings shall be the property of the Landlord, regardless of when, by which party or at which party's cost the item is installed. Movable furniture, furnishings, trade fixtures and equipment of the Tenant which are in the Leased Premises shall be the property of the Tenant, except as may otherwise be set forth in section 23 of this Agreement.

12 Alterations, Improvements and Other Modifications by the Tenant.

12.1 The Tenant shall not make any alterations, improvements or other modifications to the Leased Premises which effect structural changes in the Building or any portion thereof, change the functional utility or rental value of the Leased Premises or, except as may be contemplated by section 5 of this Agreement prior to the Commencement Date, affect the mechanical, electrical, plumbing or other systems installed in the Building or the Leased Premises.

12.2 The Tenant shall not make any alterations, improvements or modifications to the Leased Premises, the Building or the Property or make any boring in the ceiling, walls or floor of the Leased Premises or the Building unless the Tenant shall have first:

12.2.1 furnished to the Landlord detailed, New Jersey architect-certified construction drawings, construction specifications and, if they pertain in any way to the heating, ventilation and air conditioning or other systems of the Building, related engineering design work and specifications regarding, the proposed alterations, improvements or other modifications and, (i) if the Tenant elects to perform the work through contractors of its own, paid the Landlord a drawings, specifications and design review fee equal to [***] ([***]%) percent of the cost of the work and, during the course of the work, a construction inspection fee equal to [***] ([***]%) percent of the cost of the work (the Tenant shall furnish to the Landlord, within fifteen (15) days after the substantial completion of such work, a copy of the contractor's Application and Certification for Payment (AIA Document 702) and Continuation Sheet (s) (AIA Document 703) for the total cost of such work and receipted, detailed invoices therefor), and (ii) if the Landlord performs the work, paid the Landlord a drawings, specifications and design review fee equal to [***] percent of the cost of the work and, during the course of the work, a construction supervision fee equal to [***] percent of the cost of the work;

12.2.2 not received a notice from the Landlord objecting thereto in any respect within thirty (30) days of the furnishing thereof (which shall not be deemed the Landlord's affirmative consent for any purpose);

12.2.3 obtained any necessary or appropriate building permits or other approvals from the Municipality and, if such permits or other approvals are conditional, satisfied all conditions to the satisfaction of the Municipality; and

12.2.4 met, and continued to meet, all the following conditions with regard to any contractors selected by the Tenant and any subcontractors, including materialmen, in turn selected by any of them:

12.2.4.1 the Tenant shall have sole responsibility for payment of, and shall pay, such contractors;

12.2.4.2 the Tenant shall have sole responsibility for coordinating, and shall coordinate, the work to be supplied or performed by such contractors, both among themselves and with any contractors selected by the Landlord;

12.2.4.3 the Tenant shall not permit or suffer the filing of any mechanic's notice of intention or other lien or prospective lien by any such contractor or subcontractor with respect to the Property, the Common Facilities, the Building or any other improvements on the Property; and if any of the foregoing should be filed by any such contractor or subcontractor, the Tenant shall forthwith obtain and file the complete discharge and release thereof or provide such payment bond(s) from a reputable, financially sound institutional surety as will, in the opinions of the Landlord, the holders of any mortgage indebtedness on, or other interest in, the Property, the Building,

the Common Facilities or any other improvements on the Property, or any portions thereof, and their respective title insurers, be adequate to assure the complete discharge and release thereof;

12.2.4.4 prior to any such contractor's entering upon the Property, the Building or the Leased Premises or commencing work the Tenant shall have delivered to the Landlord (a) all the Tenant's certificates of insurance set forth in section 14 of this Agreement, conforming in all respects to the requirements of section 14 of this Agreement, except that the effective dates of all such insurance policies shall be prior to any such contractor's entering upon the Property, the Building or the Leased Premises or commencing work (if any work is scheduled to begin before the Commencement Date) and (b) similar certificates of insurance from each of the Tenant's contractors providing for coverage in equivalent amounts, together with their respective certificates of workers' compensation insurance, employer's liability insurance and products-completed operations insurance, the latter providing coverage in at least the amount required for the Tenant's commercial general liability and excess insurance, for the benefit of, and shall name, the Landlord, the Landlord's managing agent and mortgagees and ground lessors known to the Tenant, if any, of the Building, the Common Facilities, the Property or any interest therein, their successors and assigns as additional persons insured, and (c) certificates of insurance from each of the Tenant's contractors providing for builders' risk insurance coverage from financially sound and reputable insurers, licensed by the State of New Jersey to provide such insurance and acceptable to the Landlord, that is written on an "all risk" of physical loss or damage basis, for the full replacement cost value, which insurance policy shall be maintained in full force and effect until final completion of the respective work, and none of which insurance policies shall contain a "co-insurance" clause;

12.2.4.5 each such contractor shall be a party to collective bargaining agreements with those unions that are certified as the collective bargaining agents of all bargaining units of such contractor, of which all such contractor's workpersons shall be members in good standing;

12.2.4.6 each such contractor shall perform its work in a good and workpersonlike manner and shall not interfere with or hinder the Landlord or any other contractor in any manner;

12.2.4.7 there shall be no labor dispute of any nature whatsoever involving any such contractor or any workpersons of such contractor or the unions of which they are members with anyone; and if such a labor dispute exists or comes into existence the Tenant shall forthwith, at the Tenant's sole cost and expense, remove all such contractors and their workpersons from the Building, the Common Facilities and the Property; and

12.2.4.8 the Tenant shall have the sole responsibility for the security of the Leased Premises and all contractors' materials, equipment and work, regardless of whether their work is in progress or completed.

12.3 After the Commencement Date, the Tenant shall not apply any wall covering or other treatment to the walls of the Leased Premises without the prior written consent of the Landlord.

13 Landlord's Rights of Entry and Access. The Landlord and its authorized agents shall have the following rights of entry and access to the Leased Premises:

13.1 In case of any emergency or threatened emergency, at any time for any purpose which the Landlord reasonably believes under such circumstances will serve to prevent, eliminate or reduce the emergency, or the threat thereof, or damage or threatened damage to persons and property.

13.2 Upon at least one business day's prior verbal advice to the Tenant, at any time for the purpose of erecting or constructing improvements, modifications, alterations and other changes to the Building or any portion thereof, including, without limiting the generality of the foregoing, the Leased Premises, the Common Facilities or the Property or for the purpose of repairing, maintaining or cleaning them, whether for the benefit of the Landlord, the Building, all tenants of Other Leased Premises in the Building, or one or more tenants of Other Leased Premises, the Carnegie Center Complex or others. In connection with any such improvements, modifications, alterations, other changes, repairs, maintenance or cleaning, the Landlord may close off such portions of the Property, the Building and the Common Facilities and interrupt such services as may be necessary to accomplish such work, without liability to the Tenant therefor and without such closing or interruption being deemed an eviction or constructive eviction or requiring an abatement of Rent. However, in accomplishing any such work, the Landlord shall endeavor not to materially interfere with the Tenant's use and enjoyment of the Leased Premises or the conduct of the Tenant's business and to minimize interference, inconvenience and annoyance to the Tenant.

13.3 At all reasonable hours for the purpose of operating, inspecting or examining the Building, including the Leased Premises, or the Property.

13.4 At any time after the Tenant has vacated the Leased Premises, for the purpose of preparing the Leased Premises for another tenant or prospective tenant.

13.5 If practicable by appointment with the Tenant, at all reasonable hours for the purpose of showing the Building to prospective purchasers, mortgagees and prospective mortgagees and prospective ground lessees and lessors.

13.6 If practicable by appointment with the Tenant, at all reasonable hours during the last twelve (12) months of the Term for the purpose of showing the Leased Premises to prospective tenants thereof.

13.7 The mere enumeration of any right of the Landlord within this section 13 of the Agreement shall not be deemed to create an obligation on the part of the Landlord to exercise any such right unless the Landlord is affirmatively required to exercise such right elsewhere in this Agreement.

14 Liabilities and Insurance Obligations.

14.1 The Tenant shall maintain in full force on or before the earlier of (i) the date on which any Tenant Party first enters the Leased Premises for any reason, or (ii) the Commencement Date, and thereafter throughout and until the end of the Term, and after the end of the Term for so long after the end of the Term as any of the Tenant's Property remains in the Leased Premises, or the Tenant or anyone acting by, through or under the Tenant may use, be in occupancy of any part of, or have access to the Leased Premises or any portion thereof, a policy of commercial general liability insurance, on an occurrence basis, issued on a form at least as broad as Insurance Services Office ("ISO") Commercial General Liability Coverage "occurrence" form CG 00 01 10 01 or another Commercial General Liability "occurrence" form providing equivalent coverage. Such insurance shall include contractual liability coverage, specifically covering but not limited to the indemnification obligations undertaken by the Tenant in this Agreement. The minimum limits of liability of such insurance shall be $[***] per occurrence. In addition, in the event the Tenant hosts a function in the Leased Premises, the Tenant agrees to obtain, and cause any persons or parties providing services for such function to obtain, the appropriate insurance coverages as determined by the Landlord (including liquor liability coverage, if applicable) and provide the Landlord with evidence of the same.

14.2 The Tenant shall maintain at all times during the Term, and during such earlier or later time as the Tenant may be performing work in or to the Leased Premises or have property, fixtures, furniture, equipment, machinery, goods, supplies, wares or merchandise in the Leased Premises, and continuing thereafter so long as any of the Tenant's Property, remains in the Leased Premises, or the Tenant or anyone acting by, through or under the Tenant may use, be in occupancy of or have access to, any part of the Leased Premises, business interruption insurance and insurance against loss or damage covered by the so-called "all risk" or equivalent type insurance coverage with respect to (i) the Tenant's property, fixtures, furniture, equipment, machinery, goods, supplies, wares and merchandise, and other property of the Tenant located at the Leased Premises, (ii) all additions, alterations and improvements made by or on behalf of the Tenant in the Leased Premises or are existing in the Leased Premises as of the date of this Agreement ("Leasehold Improvements"), and (iii) any property of third parties, including, but not limited to, leased or rented property, in the Leased Premises in the Tenant's care, custody, use or control, provided that such insurance in the case of (iii) may be maintained by such third parties (collectively the "Tenant's Property"). The business interruption insurance required by this section shall be in minimum amounts typically carried by prudent tenants engaged in similar operations, but in no event shall be in an amount less than the Basic Rent then in effect during any Lease Year, plus any Additional Rent due and payable for the immediately preceding Lease Year. The "all risk" insurance required by this section shall be in an amount at least equal to the full replacement cost of the Tenant's Property. In addition, during such time as the Tenant is performing work in or to the Leased Premises, the Tenant, at the Tenant's sole cost and expense, shall also maintain, or shall cause its contractor(s) to maintain, builder's risk insurance for the full insurable value of such work. The Landlord and such additional persons or entities as the Landlord may reasonably request, including but not limited to the entities listed on Exhibit G-1, shall be named as loss payees, as their interests may appear, on the policy or policies required by this section for Leasehold Improvements. In the event of loss or damage covered by the "all risk" insurance required by this section, the responsibilities for repairing or restoring the loss or damage shall be determined in accordance with section 15 of this Agreement. To the extent that the Landlord is obligated to pay for the repair or restoration of the loss or damage covered by the policy, the Landlord shall be paid the proceeds of the "all risk" insurance covering the loss or damage. To the extent the Tenant is obligated to pay for the repair or restoration of the loss or damage, covered by the policy,

the Tenant shall be paid the proceeds of the "all risk" insurance covering the loss or damage. If both the Landlord and the Tenant are obligated to pay for the repair or restoration of the loss or damage covered by the policy, the insurance proceeds shall be paid to each of them in the pro rata proportion of their obligations to repair or restore the loss or damage. If the loss or damage is not repaired or restored (for example, if this Agreement is terminated pursuant to section 15 of this Agreement), the insurance proceeds shall be paid to the Landlord and the Tenant in the pro rata proportion of their relative contributions to the cost of the leasehold improvements covered by the policy.

14.3 The Tenant agrees to maintain in full force on or before the earlier of (i) the date on which any Tenant Party first enters the Leased Premises for any reason, or (ii) the Commencement Date, and thereafter throughout the end of the Term, and after the end of the Term for so long after the end of the Term that any of the Tenant's Property remains in the Leased Premises or as the Tenant or anyone acting by, through or under the Tenant may use, be in occupancy of, or have access to the Leased Premises or any portion thereof, (a) automobile liability insurance (covering any automobiles owned or operated by the Tenant at the Carnegie Center Complex); (b) worker's compensation insurance as required by law; and (c) employer's liability insurance. Such automobile liability insurance shall be in an amount not less than [***]Million Dollars ($[***]) for each accident. Such employer's liability insurance shall be in an amount not less than [***]Million Dollars ($[***]) for each accident, One [***]Dollars ($[***]) disease-policy limit, and [***]Million Dollars ($[***]) disease-each employee.

14.4 All insurance required to be maintained by the Tenant pursuant to this Agreement shall be maintained with responsible companies that are admitted to do business, and are in good standing, in the State of New Jersey and that have a rating of at least "A" and are within a financial size category of not less than "Class X" in the most current Best's Key Rating Guide or such similar rating as may be reasonably selected by the Landlord. All such insurance shall: (1) be acceptable in form and content to the Landlord; and (2) contain a clause requiring the insurer to provide the Landlord thirty (30) days' prior written notice of cancellation. All commercial general liability, excess/umbrella liability and automobile liability insurance policies shall be primary and noncontributory. No liability insurance policy shall contain any self-insured retention greater than $[***] and no property insurance policy shall contain any self-insured retention greater than $[***]. Any deductibles and such self-insured retentions shall be deemed to be "insurance" for purposes of the waiver in subsection 14.12 below. The Landlord reserves the right from time to time to require the Tenant to obtain higher minimum amounts of insurance based on such limits as are customarily carried with respect to similar properties in the area in which the Leased Premises are located. The minimum amounts of insurance required by this Agreement shall not be reduced by the payment of claims or for any other reason. In the event the Tenant shall fail to obtain or maintain any insurance meeting the requirements of this section 14, or to deliver such policies or certificates as required by this section 14, the Landlord may, at its option, on five (5) days notice to the Tenant, procure such policies for the account of the Tenant, and the cost thereof shall be paid to the Landlord within five (5) days after delivery to the Tenant of invoices therefor.

14.5 To the fullest extent permitted by law, the commercial general liability and auto insurance carried by the Tenant pursuant to this Agreement, and any additional liability insurance carried by the Tenant pursuant to subsection 14.1 of this Agreement, shall name the Landlord, the Landlord's managing agent, and such other persons as the Landlord may reasonably request from time to time as additional insureds, including but not limited to those entities identified on Exhibit G-1 (collectively "Additional Insureds") with respect to liability arising out of or related to this Agreement or the operations of the Tenant. Such insurance shall provide primary coverage without contribution from any other insurance carried by or for the benefit of the Landlord, the Landlord's managing agent, or other Additional Insureds. Such insurance shall also waive any right of subrogation against each Additional Insured. For the avoidance of doubt, each primary policy and each excess/umbrella policy through which the Tenant satisfies its obligations under this section 14 must provide coverage to the Additional Insureds that is primary and non-contributory.

14.6 On or before the earlier of (i) the date on which any Tenant Party first enters the Leased Premises for any reason or (ii) the Commencement Date, the Tenant shall furnish the Landlord with certificates evidencing the insurance coverage required by this Agreement, and renewal certificates shall be furnished to the Landlord at least annually thereafter, and at least thirty (30) days prior to the expiration date of each policy for which a certificate was furnished. Acceptable forms of such certificates for liability and property insurance, respectively, as of the date hereof, are attached hereto as Exhibit G-2 and Exhibit G-3. Failure by the Tenant to provide the certificates required by this subsection 14.6 shall not be deemed to be a waiver of the requirements in this subsection 14.6. Upon request by the Landlord, a true and complete copy of any insurance policy required by this Agreement shall be delivered to the Landlord within ten (10) days following the Landlord's request.

14.7 The Tenant shall require its subtenants and other occupants (other than Tenant's employees and guests visiting the Leased Premises in the ordinary course of Tenant's business) of the Leased Premises to provide written documentation evidencing the obligation of such subtenant or other occupant to indemnify the Landlord Parties to the same extent that the Tenant is required to indemnify the Landlord Parties pursuant to section 27 of this Agreement, and to maintain insurance that meets the requirements of this section 14, and otherwise to comply with the requirements of this section 14, provided that the terms of this subsection 14.7 shall not relieve the Tenant of any of its obligations to comply with the requirements of this section 14. The Tenant shall require all such subtenants and occupants to supply certificates of insurance evidencing that the insurance requirements of this section 14 have been met and shall forward such certificates to the Landlord on or before the earlier of (i) the date on which the subtenant or other occupant first enters the Leased Premises or (ii) the commencement date of the sublease. The Tenant shall be responsible for identifying and remedying any deficiencies in such certificates or policy provisions.

14.8 The Tenant shall not commit or permit any violation of the policies of fire, boiler, sprinkler, water damage or other insurance covering the Building and/or the fixtures, equipment and property therein carried by the Landlord, or do or permit anything to be done, or keep or permit anything to be kept, in the Leased Premises, which in case of any of the foregoing (i) would result in termination of any such policies, (ii) would adversely affect the Landlord's right of recovery under any of such policies, or (iii) would result in reputable and independent insurance companies refusing to insure the Building or the property of the Landlord in amounts reasonably satisfactory to the Landlord.

14.9 If, because of anything done, caused or permitted to be done, or omitted by the Tenant (or its subtenant or other occupants of the Leased Premises), the rates for liability, fire, boiler, sprinkler, water damage or other insurance on the Building or the Property or on the property and equipment of the Landlord or any other tenant or subtenant in the Building shall be higher than they otherwise would be, the Tenant shall reimburse the Landlord and/or the other tenants and subtenants in the Building for the additional insurance premiums thereafter paid by the Landlord or by any of the other tenants and subtenants in the Building which shall have been charged because of the aforesaid reasons, such reimbursement to be made from time to time on the Landlord's demand.

14.10 Any or all of the Landlord's insurance may be provided by blanket coverage maintained by the Landlord or any Affiliate of the Landlord under its insurance program for its portfolio of properties, or by the Landlord or any Affiliate of the Landlord under a program of self insurance, and in such event Operational Expenses shall include the portion of the reasonable cost of blanket insurance or self insurance that is allocated to the Building.

14.11 The Landlord shall not be obligated to insure and shall not assume any liability of risk of loss for the Tenant's Property, including any such property or work of the Tenant's subtenants or occupants. The Landlord shall also have no obligation to carry insurance against, nor be responsible for, any loss suffered by the Tenant, subtenants or other occupants due to interruption of the Tenant's or any subtenant's or occupant's business.

14.12 To the fullest extent permitted by law, and notwithstanding any term or provision of this Agreement to the contrary, the parties hereto waive and release any and all rights of recovery against the other, and agree not to seek to recover from the other or to make any claim against the other, and in the case of the Landlord, against all Tenant Parties, and in the case of the Tenant, against all Landlord Parties, for any loss or damage incurred by the waiving/releasing party to the extent such loss or damage is insured under any insurance policy required by this Agreement or which would have been so insured had the party carried the insurance it was required to carry hereunder. The Tenant shall obtain from its subtenants and other occupants (other than Tenant's employees and guests visiting the Leased Premises in the ordinary course of Tenant's business) of the Leased Premises a similar waiver and release of claims against any or all of the Tenant or the Landlord. In addition, the parties hereto (and in the case of the Tenant, its subtenants and other occupants of the Leased Premises) shall procure an appropriate clause in, or endorsement on, any insurance policy required by this Agreement pursuant to which the insurance company waives subrogation so long as no material additional premium is charged for such waiver. The insurance policies required by this Agreement shall contain no provision that would invalidate or restrict the parties' waiver and release of the rights of recovery in this section. The parties hereto covenant that no insurer shall hold any right of subrogation against the parties hereto by virtue of such insurance policy.

14.13 During such times as the Tenant is performing work or having work or services performed in or to the Leased Premises, the Tenant shall require its contractors, and their subcontractors of all tiers, to obtain and maintain commercial general liability, automobile, workers compensation, employer's liability, builder's risk, and equipment/property insurance in such amounts and on such terms as are customarily required of such contractors and subcontractors on similar projects. The amounts and terms of all such insurance are subject to the Landlord's written

approval, which approval shall not be unreasonably withheld. The commercial general liability and auto insurance carried by the Tenant's contractors and their subcontractors of all tiers pursuant to this section shall name the Additional Insureds as additional insureds with respect to liability arising out of or related to their work or services. Such insurance shall provide primary coverage without contribution from any other insurance carried by or for the benefit of the Landlord, the Landlord's managing agent, or other Additional Insureds. Such insurance shall also waive any right of subrogation against each Additional Insured. The Tenant shall obtain and submit to the Landlord, prior to the earlier of (i) the entry onto the Leased Premises by such contractors or subcontractors or (ii) commencement of the work or services, certificates of insurance evidencing compliance with the requirements of this section.

15 Casualty Damage to Building or Leased Premises.

15.1 In the event of any damage to the Building or any portion thereof by fire or other casualty, with the result that the Leased Premises are rendered unusable, in whole or in part, or not reasonably accessible to and from the Building's Common Facilities, within thirty (30) business days of the occurrence of the casualty the Landlord shall determine and give notice of its determination to the Tenant whether, due to the extent of damage and the Landlord's analysis of the economic feasibility of rebuilding or restoring, the Landlord intends not to rebuild or restore the Building or, if the Landlord shall not have made that determination, the Landlord's reasonable opinion of the period of time required to restore the Building and the Leased Premises to their condition immediately prior to the occurrence of the respective casualty (exclusive of any improvements constructed, installed or added in the Leased Premises as contemplated by sections 5 or 12 of this Agreement).

15.1.1 If the Landlord gives timely notice of its determination that it does not intend to rebuild or restore, due to the extent of damage and the Landlord's analysis of the economic feasibility of rebuilding or restoring, then this Agreement and the Term shall terminate effective as of the date of the subject casualty with respect to those portions of the Leased Premises rendered unusable by the subject casualty and as of the date of the Tenant's surrender with respect to those portions of the Leased Premises which were not rendered unusable by the subject casualty.

15.1.2 Otherwise, if, in the Landlord's reasonable opinion, the restoration contemplated by subsection 15.1 of this Agreement will take more than two hundred forty (240) days (inclusive of a reasonable period for adjustment of the Landlord's insurance claim, but exclusive of any period for resort to a formal dispute resolution forum with the insurer), or the casualty event occurs in the final year of the Term, or extended Term if Tenant has exercised the option to extend, then either the Landlord or the Tenant may elect to terminate the Term and this Agreement (effective as of the date of the subject casualty with respect to those portions of the Leased Premises rendered unusable by the subject casualty and as of the date of the Tenant's giving notice with respect to those portions of the Leased Premises which were not rendered unusable by the subject casualty) by timely notice of its election to the other. Notice of the Landlord's election to terminate, if any, shall be given to the Tenant within the thirty (30) business day period contemplated by subsection 15.1 of this Agreement. If the Landlord shall not timely elect to terminate the Term and this Agreement, notice of the Tenant's election to terminate, if any, shall be given to the Landlord within the thirty (30) day period immediately succeeding the Landlord's giving notice to the Tenant of the Landlord's estimated period to rebuild or restore.

15.1.3 If (a) in the Landlord's reasonable opinion, the restoration contemplated by subsection 15.1 of this Agreement will take more than two hundred forty (240) days (inclusive of a reasonable period for adjustment of the Landlord's insurance claim, but exclusive of any period for resort to a formal dispute resolution forum with the insurer) and neither the Landlord nor the Tenant shall have timely exercised their respective rights to terminate contemplated by subsection 15.1.2 of this Agreement or (b) in the Landlord's reasonable opinion, the restoration contemplated by subsection 15.1 of this Agreement will take two hundred forty (240) days or less (inclusive of a reasonable period for adjustment of the Landlord's insurance claim, but exclusive of any period for resort to a formal dispute resolution forum with the insurer), then, unless the casualty event occurred in the final year of the Term, or extended Term if Tenant has exercised the option to extend, Tenant elected to terminate the this Agreement, this Agreement shall remain in effect and the Landlord shall restore the Building and the Leased Premises as contemplated by subsection 15.1 of this Agreement to the extent the Landlord shall have received (and no mortgagee of the Property or the Building shall have received) proceeds of any property, casualty or liability insurance on the damaged portions, causing the restoration to proceed diligently and expediently. Under the circumstances contemplated by clause (b) of this subsection 15.1.3, if the Landlord shall not have timely restored the Building and the Leased Premises as contemplated by subsection 15.1 of this Agreement to the extent the Landlord shall have received proceeds of any property or liability insurance on the damaged portions, the Term shall terminate upon the expiration of ninety (90) additional days (without the Landlord's completion of its restoration obligation in the interim) after the Tenant shall have given prompt notice that the Landlord has not completed its restoration obligations on a timely basis and that the

Tenant desires termination of the Term (which termination shall be effective as of the date of the subject casualty with respect to those portions of the Leased Premises rendered unusable by the subject casualty and as of the date of the Tenant's giving notice with respect to those portions of the Leased Premises which were not rendered unusable by the subject casualty).

15.2 Under the circumstances contemplated by subsection 15.1 of this Agreement, Rent shall abate from the date of the casualty until such time as the Building and the Leased Premises are again restored by the Landlord as contemplated by subsection 15.1 of this Agreement by the amount which bears the same proportion to the Rent otherwise payable during such period as the gross rentable floor space of the Leased Premises which are rendered unusable or not reasonably accessible to and from the Common Facilities of the Building bears to the gross rentable floor space of the Leased Premises.

15.3 The restoration of the improvements constructed or installed in the Leased Premises as contemplated by sections 5 or 12 of this Agreement shall be the Tenant's responsibility. The Tenant shall make reasonable, good faith efforts to integrate the restoration which is its responsibility with the restoration which is the Landlord's responsibility. To the extent such integration is not feasible, the Tenant shall be allowed an additional, reasonable interval to complete its work, not to exceed thirty (30) days after the completion of the Landlord's restoration work, and Rent shall continue to abate until the earlier of (i) the expiration of such additional interval or (ii) the completion of the Tenant's work, to the same extent contemplated by subsection 15.2. The Landlord shall cooperate with the Tenant to integrate the restoration of such improvements during the reconstruction period.

15.4 In the event either the Landlord shall make any election to cancel contemplated by subsection 15.1.1 of this Agreement or either the Landlord or the Tenant shall make any election to cancel contemplated by subsection 15.1.2 of this Agreement, then the Landlord may proceed with restoration (or non-restoration) in any manner it chooses, without any liability to the Tenant.

15.5 The Tenant shall promptly advise the Landlord by the quickest means of communication of the occurrence of any casualty damage to the Building or the Leased Premises of which the Tenant becomes aware.

16 Condemnation.

16.1 This section 16 of the Agreement shall apply if the power of eminent domain (or private purchase by any public or quasi-public body in lieu thereof for any public or quasi-public purpose) shall be exercised with the result that:

16.1.1 all or substantially all the Property or the Leased Premises is taken during the Term for at least the balance of the Term;

16.1.2 less than substantially all the Property, the Building or the Common Facilities (but none of the Leased Premises) is taken during the Term for at least the balance of the Term, but the Landlord reasonably promptly determines in good faith that it is not economically feasible for the Landlord to make any necessary alterations and continue to operate the portions not so taken, as they may be altered, as a first class Building and facility in the vicinity for the balance of the Term;

16.1.3 less than substantially all the Leased Premises is taken during the Term for at least the balance of the Term, but the Tenant reasonably promptly determines in good faith that it cannot continue to use and enjoy the portions not so taken for the conduct of its business in the ordinary course during the balance of the Term; or

16.1.4 so much of the Property or the Common Facilities is taken during the Term for at least the balance of the Term that the Leased Premises are not reasonably accessible to and from the Common Facilities and reasonable alternate access is not provided by the Landlord.

16.2 Under the circumstances contemplated by subsections 16.1.1 and subsections 16.1.4 of this Agreement, then either the Landlord or the Tenant may elect to terminate the Term by notice to the other given within thirty (30) days after, and effective as of, the later of the date (i) that the condemnor acquires title to the portions taken or (ii) that possession of the portions taken is required to be delivered or surrendered to the condemning authority. Under the circumstances contemplated by subsection 16.1.2 of this Agreement the Landlord, and under the circumstances contemplated by subsection 16.1.3 of this Agreement the Tenant, respectively, may elect to terminate the Term by notice to the other given within thirty (30) days after, and effective as of, the later of the date (i) that the condemnor

acquires title to the portions taken or (ii) that possession of the portions taken is required to be delivered or surrendered to the condemning authority.

. Under the circumstances contemplated by subsection 16.1 of this Agreement, if no party with any right to elect to terminate the Term under subsection 16.2 of this Agreement shall have given timely notice to the other of exercise of its election to terminate the Term, this Agreement shall continue in full force and effect, but Rent shall abate, effective as of the later of the date (i) that the condemnor acquires title to the portions taken or (ii) that possession of the portions taken is required to be delivered or surrendered to the condemning authority, by the amount which bears the same proportion to the Rent otherwise payable during any period as the gross rentable floor space, if any, of the Leased Premises which is taken bears to the gross rentable floor space of the Leased Premises.

16.3 Under any of the circumstances contemplated by this section 16 of the Agreement, the Tenant hereby waives any claim against the Landlord, the condemning authority for anything of value, tangible or intangible, including, without limiting the generality of the foregoing, the putative value of any leasehold interest or the loss of the use of same, except for any right the Tenant might have to make a claim, independent of, and without reference to or having any effect on, any claim, award or settlement of the Landlord, against the condemning authority regarding the value of the Tenant's installed trade fixtures and other installed equipment which are not removable from the Leased Premises or for ordinary and necessary moving and relocation expenses occasioned by the taking.

17 Assignment or Subletting by Tenant.

17.1 Except as may be specifically set forth in this section 17 of the Agreement, the Tenant shall not, by operation of law or otherwise:

17.1.1 assign, or purport to assign, this Agreement or any of the Tenant's rights hereunder;

17.1.2 sublet, or purport to sublet, the Leased Premises or any portion thereof;

17.1.3 license, or purport to license, the use or occupancy of the Leased Premises or any portion thereof;

17.1.4 otherwise transfer, or attempt to transfer any interest including, without limiting the generality of the foregoing, a mortgage, pledge or security interest, in this Agreement, the Leased Premises or the right to the use and occupancy of the Leased Premises; or

17.1.5 indirectly accomplish, or permit or suffer the accomplishment of, any of the foregoing by merger or consolidation with another entity, by acquisition or disposition of assets or liabilities outside the ordinary course of the Tenant's business or by acquisition or disposition, by the Tenant's equity owners or subordinated creditors, of any of their respective interests in the Tenant.

17.2 The Tenant shall not assign this Agreement or any of the Tenant's rights hereunder or sublet the Leased Premises or any portion thereof without first giving one (1) months' prior notice to the Landlord of its desire to assign or sublet and requesting the Landlord's consent and without first receiving the Landlord's prior written consent, except as permitted under section 17.6 of this Lease. The Tenant's notice to the Landlord shall include:

17.2.1 the full name, address and telephone number of the proposed assignee or sublessee;

17.2.2 a description of the type(s) of business in which the proposed assignee or sublessee is engaged and proposes to engage;

17.2.3 a description of the precise use to which the proposed assignee or sublessee intends to put the Leased Premises or portion thereof;

17.2.4 the proposed assignee's or subtenant's most recent quarterly and annual financial statements prepared in accordance with generally accepted accounting principles and any other evidence of financial position and responsibility that the Tenant or proposed assignee or sublessee may desire to submit;

17.2.5 by diagram and measurement of the actual square feet of floor space, the precise portion of the Leased Premises proposed to be subject to the assignment of this Agreement or to be sublet;

17.2.6 a complete, accurate and detailed description of the terms of the proposed assignment or sublease including, without limiting the generality of the foregoing, all consideration paid or given, or proposed to be paid or to be given, by the proposed assignee, sublessee or other person to the Tenant and the respective times of payment or delivery;

17.2.7 a payment to the Landlord of an administrative processing fee in the amount of [***] Dollars; and

17.2.8 any other information reasonably requested by the Landlord.

17.3 By the expiration of the notice period contemplated by subsection 17.2 of this Agreement, the Landlord, in its sole discretion, shall take one of the following actions by notice to the Tenant:

17.3.1 grant consent on the terms and conditions set forth in subsection 17.4 of this Agreement and such other reasonable terms and conditions set forth in the Landlord's notice;

17.3.2 refuse to grant consent for any of the reasons set forth in subsection 17.5 of this Agreement or for any other reasonable reason set forth in the Landlord's notice; or

17.3.3 elect to terminate the Term for that portion of the Leased Premises to be assigned or subleased as of (a) the end of the month after the Tenant has given notice of the Tenant's desire to assign or sublet or (b) the proposed effective date of the proposed assignment or sublease, provided in either case the assignment or sublease is for all or substantially all of the remaining Term of the Lease.

17.4 The Landlord's consent to the Tenant's proposed assignment or sublease, if granted under subsection 17.3.1 of this Agreement, shall be subject to all the following terms and conditions (and to any other terms and conditions permitted by that subsection):

17.4.1 any proposed assignee or sublessee shall, by document executed and delivered forthwith to the Landlord, agree to be bound by all the obligations of the Tenant set forth in this Agreement;

17.4.2 the Tenant shall remain liable under this Agreement, jointly and severally with any proposed assignee or sublessee, for the timely performance of all obligations of the Tenant set forth in this Agreement;

17.4.3 the Tenant shall forthwith deliver to the Landlord manually executed copies of all documents regarding the proposed assignment or sublease and a written, accurate and complete description, manually executed both by the Tenant and the proposed assignee or sublessee, of any other agreement, arrangement or understanding between them regarding the same;

17.4.4 with respect to any consideration or other thing of value received or to be received by the Tenant in connection with any such assignment or sublease (other than those payable in equal monthly installments each month during the proposed term of any such assignment or sublease), the Tenant shall pay to the Landlord one-half of any such amount and one-half of the fair market value of any other thing of value within ten (10) days of receipt of same; and

17.4.5 with respect to any amount payable to the Tenant in equal monthly installments each month during the proposed term of any such assignment or sublease in connection with such assignment or sublease, which amount is in excess of the amount which bears the same ratio to the monthly installment of Rent due from the Tenant as the gross rentable floor space of the Leased Premises subject to the assignment or sublease bears to the gross rentable floor space of the entire Leased Premises, the Tenant shall pay one-half of such excess to the Landlord together with the Tenant's monthly installment of Rent.

17.5 The Landlord's refusal to grant consent under subsection 17.3.2 of this Agreement shall not be deemed an unreasonable withholding of consent if based upon any of the following reasons (or any other reason permitted by that subsection):

17.5.1 the Landlord desires to take one of the other actions enumerated in subsection 17.3 of this Agreement;

17.5.2 there are already two or more assignees, sublessees or licensees of all or a portion of the Leased Premises;

17.5.3 the proposed sublease is for a term of less than one year;

17.5.4 the proposed sublease is for a term which would expire after the Term;

17.5.5 less than one year remains in the Term as of the proposed effective date of the proposed assignment or sublease;

17.5.6 the general reputation, financial position or ability or type of business of, or the anticipated use of the Leased Premises by, the proposed assignee or proposed sublessee is unsatisfactory to the Landlord or is inconsistent with those of tenants of Other Leased Premises or of the Carnegie Center Complex or inconsistent with any commitment made by the Landlord to any such other tenant;

17.5.7 the Tenant shall not market, advertise or otherwise promote the availability of the Leased Premises or any portion thereof for consideration during any period of twelve (12) months that is less than the amount of the Market Rental Rate divided by the gross rentable floor space of the Leased Premises and multiplied by that portion of the gross rentable floor space of the Leased Premises proposed to be subject to the proposed assignment or sublease;

17.5.8 the gross rentable floor space of the portion of the Leased Premises proposed to be sublet is less than one-quarter of the gross rentable floor space of the Leased Premises;

17.5.9 the proposed assignee or sublessee is a tenant, sublessee or other occupant of Other Leased Premises or other premises in the Carnegie Center Complex; or

17.5.10 any part of the rent payable under the proposed assignment or sublease shall be based in whole or in part on the income or profits derived from the Leased Premises or if any proposed assignment or sublease shall potentially have any adverse effect on the real estate investment trust qualification requirements applicable to the Landlord and its affiliates.

17.6 Notwithstanding anything to the contrary set forth in section 17 of this Agreement, the Landlord hereby consents to the Tenant’s assignment of this Agreement or subletting the Leased Premises or portion thereof specified below if:

17.6.1 at or prior to the respective dates of exercise and effectiveness thereof (a)(i) no Event of Default shall have occurred or (ii) if an Event of Default shall have occurred, the Tenant shall have previously cured it in full or the Landlord shall have waived it and (b) there shall not have been a History of Recurring Events of Default; and

17.6.2 the Tenant and the proposed assignee or sublessee comply with all the conditions set forth in subsections 17.4.1 through 17.4.3 of this Agreement; and

17.6.3 at the date of effectiveness of the proposed assignment or sublet there is not already more than two other assignee, sublessee or licensee of the Leased Premises or any portions thereof; and

17.6.4 one of the following is applicable:

17.6.4.1 the proposed assignee or sublessee is, and continues to be, an Affiliate of the Tenant, provided that the proposed assignee or sublessee shall also have and shall continue to have a net worth at least as great as that of the Tenant on the Commencement Date; or

17.6.4.2 the proposed assignee or sublessee is a person (a) resulting from the merger or consolidation of the Tenant with or into such person or (b) purchasing substantially all the assets (subject to substantially all the liabilities) of the Tenant and succeeding to the business of the Tenant, provided either the Tenant or the proposed assignee or sublessee shall have and shall continue to have a net worth at least as great as that of the Tenant on the Commencement Date.

17.7 No person other than the Tenant shall have any assignment or sublet rights under this Agreement.

18 Signs, Displays and Advertising.

18.1 The Tenant shall have one sign identifying the Landlord's assigned number for the Leased Premises at the principal entrance to the Leased Premises. The Tenant may identify itself in or on each of: the sign at the principal entrance to the Leased Premises, the Building directory and the directory, if any, on the floor of the Building on which the Leased Premises is located. All such signs, and the method and materials used in mounting and dismounting them, shall be in accordance with the Landlord's specifications. All such signs shall be provided and mounted by the Landlord at the Landlord's expense, except that the Tenant shall bear any expense of identifying itself on the sign at the principal entrance to the Leased Premises.

18.2 No other sign, advertisement, fixture or display shall be used by the Tenant on the Property or in the Building or the Common Facilities. Any signs other than those specifically permitted under subsection 18.1 of this Agreement shall be removed promptly by the Tenant or by the Landlord at the Tenant's expense.

18.3 During the Term, so long as the Tenant leases and occupies for the conduct of its own business leased premises consisting of that amount of square feet of gross rentable floor space which is at least the third largest amount of square feet of gross rentable floor space in the Building as compared to the gross rentable floor space of tenants of Other Leased Premises in the Building, the Tenant shall have the right to require the Landlord, at the Tenant's sole cost and expense, in accordance with the Landlord's specifications, to add and maintain (or to continue to maintain, as the case may be) the name of the Tenant on the monument sign located at the entrance to the Property near the access road leading to the Property, for so long as such sign is maintained by the Landlord. Upon the Tenant no longer having any rights to require the Landlord to maintain said name on said sign, the Landlord shall, at the Tenant's sole cost and expense, remove said name from such sign. The rights granted under this subsection 18.3 shall be personal to the original Tenant, ACADIA Pharmaceuticals Inc., and any successor by merger or acquisition of all or substantially all of its assets. All signage of Tenant in each location shall be of substantially equal magnitude, location and quality as the signage provided for any comparably sized office tenant in the Building.

19 Quiet Enjoyment. The Landlord is the owner of the Building, the Property and those Common Facilities located on the Property. The Landlord has the right and authority to enter into and execute and deliver this Agreement with the Tenant. So long as an Event of Default shall not have occurred, the Tenant shall and may peaceably and quietly have, hold and enjoy the Leased Premises during the Term in accordance with this Agreement.

20 Relocation. At any time and from time to time during the Term (but not in the first Lease Year and no more than once during the Initial Term and no more than once during the Renewal Term), on at least one hundred twenty (120) days' prior notice to the Tenant, the Landlord shall have the right to move the Tenant out of the Leased Premises and into premises located on any floor above the first floor of a 500 Series Building having (i) equal or better lobby exposure, and (ii) a substantially similar layout to the Leased Premises, for the duration of the Term. The Landlord shall use its best efforts to ensure that the amount of square feet of gross rentable floor space in the substitute new premises approximately equals the amount of square feet of gross rentable floor space in the Leased Premises. In the event the Landlord exercises this right of relocation, the Landlord shall decorate the new premises similarly to the Leased Premises and remove, relocate and reinstall the Tenant's furniture, trade fixtures, furnishings and equipment (including electrical, telephone and computer cabling and wiring), and replace the then existing inventory of letterhead stationery, envelopes and business cards, with such revised stationery and business cards indicating the new address of the Tenant, all at the sole cost and expense of the Landlord. The Landlord shall also reimburse the Tenant for its reasonable third party moving expenses from the Leased Premises to the substitute new premises. Any and all alterations, modifications and improvements to the substitute new premises shall be of equal or greater quality and substantially similar to Tenant's alterations, modifications and improvements to the Leased Premises immediately preceding such relocation. When the substitute new premises are ready, the Tenant shall surrender the Leased Premises. Following any such relocation, this Agreement shall continue in full force and effect except for the description of the Leased Premises, the Building and the Property which, upon completion of such relocation, shall be deemed amended to describe the substitute new premises, building and property, respectively, to which the Tenant shall have been relocated in accordance with this section 20 of the Agreement. Notwithstanding anything to the contrary contained herein, following any such relocation, neither the amount of Basic Rent payable by the Tenant hereunder during the Expiring Term nor the Tenant's Share of Taxes, Operational Expenses or Annual Amortized Capital Expenditures payable by the Tenant hereunder during the Expiring Term shall be increased in the event that the gross rentable square footage of the substitute new premises is greater than that of the original Leased Premises.

Notwithstanding anything to the contrary contained herein, following any such relocation, in the event that the gross rentable square footage of the substitute new premises is less than that of the Leased Premises, the amount of Basic Rent payable by the Tenant hereunder during the Expiring Term and the Tenant's Share of Taxes, Operational Expenses and Annual Amortized Capital Expenditures during the Expiring Term shall be decreased proportionately; and the Landlord and the Tenant shall enter into an amendment of this Agreement reflecting same.

21 Surrender. Upon termination of the Term, or at any other time at which the Landlord, by virtue of any provision of this Agreement or otherwise has the right to re-enter and re-take possession of the Leased Premises, the Tenant shall surrender possession of the Leased Premises; remove from the Leased Premises all property owned by the Tenant or anyone else other than the Landlord; if installed by or on behalf of Tenant, remove all cabling, hardware and equipment from the ceiling plenum spaces, and/or concealed in wall cavities, including cabling related to the Tenant's movable wall systems or partition office furniture and IT and telecommunications systems, without damaging existing infrastructure and pathways that may support fire alarm systems, lighting systems, electrical systems, fire protection systems, and/or HVAC systems, that the Landlord may request by notice (electrical receptacles shall remain in place in all full height partition walls); remove from the Leased Premises or any Common Facilities any alterations, improvements or other modifications made to the Leased Premises or in the Common Facilities by or on behalf of the Tenant that the Landlord may request by notice; upon such removal restore the Leased Premises to its condition prior to the installation of such alterations, improvements or other modifications and repair any damage occasioned by such removal and restoration; clean the Leased Premises; leave the Leased Premises in as good order and condition as it was upon the completion of any improvements contemplated by section 5 of this Agreement, ordinary wear and use excepted (subject to the right of the Landlord, as stated above, to require the Tenant to remove from the Leased Premises any alterations, improvements or other modifications to the Leased Premises and perform any restoration and repairs); return all copies of all keys and passes to the Leased Premises, the Common Facilities and the Building to the Landlord; and receive the Landlord's written acceptance of the Tenant's surrender. The Landlord shall not be deemed to have accepted the Tenant's surrender of the Leased Premises unless and until the Landlord shall have executed and delivered the Landlord's written acceptance of surrender to the Tenant, which shall not be unreasonably withheld or delayed.

22 Events of Default. The occurrence of any of the following events shall constitute an Event of Default under this Agreement:

22.1 the Tenant's failure to pay any installment of Basic Rent or any amount of Additional Rent, provided that Tenant shall be granted one opportunity in any twelve (12) month period to cure a failure to pay any installment of Basic Rent or any amount of Additional Rent, where such payment was made after same was first due;

22.2 the Tenant's failure to perform any of its obligations under this Agreement if such failure has caused, or may cause, loss or damage that cannot promptly be cured by subsequent act of the Tenant;

22.3 the Tenant's failure to complete performance of any of the Tenant's obligations under this Agreement (other than those contemplated by subsections 22.1 and 22.2 of this Agreement) within ten (10) days after the Landlord shall have given notice to the Tenant specifying which of the Tenant's obligations has not been performed and in what respects, unless completion of performance within such period of ten (10) days is not possible using diligence and expedience, then within a reasonable time of the Landlord's notice so long as the Tenant shall have commenced substantial performance within the first three (3) days of such period of ten (10) days and shall have continued to provide substantial performance, diligently and expediently, through to completion of performance;

22.4 the discovery of any intentional misrepresentation of material fact made by the Tenant in this Agreement, which shall have been inaccurate or incomplete in any material respect either on the date it was made or the date as of which it was made;

22.5 the sale, transfer or other disposition of any interest of the Tenant in the Leased Premises by way of execution or other legal process;

22.6 with the exception of those of the following events to which section 365 of the Bankruptcy Code shall apply in the context of an office lease (in which case subsection 22.7 of this Agreement shall apply):

22.6.1 the Tenant's becoming a "debtor," as that term is defined in section 101 of the Bankruptcy Code;

22.6.2 any time when either the value of the Tenant's liabilities exceed the value of the Tenant's assets or the Tenant is unable to pay its obligations as and when they respectively become due in the ordinary course of business;

22.6.3 the appointment of a receiver or trustee of the Tenant's Property or affairs; or

22.6.4 the Tenant's making an assignment for the benefit of, or an arrangement with or among, creditors or filing a petition in insolvency or for reorganization or for the appointment of a receiver;

22.7 in the event of the occurrence of any of the events enumerated in subsection 22.6 of this Agreement to which section 365 of the Bankruptcy Code shall apply in the context of an office lease, the earlier of the bankruptcy trustee's rejection or deemed rejection (as those terms are used in section 365 of the Bankruptcy Code) of this Agreement; or

22.8 the Tenant's abandoning the Leased Premises before expiration of the Term without the prior written consent of the Landlord.

23 Rights and Remedies.

23.1 Upon the occurrence of an Event of Default the Landlord shall have all the following rights and remedies:

23.1.1 to elect to terminate the Term by giving notice of such election, and the effective date thereof, to the Tenant and to receive Termination Damages;

23.1.2 to elect to re-enter and re-take possession of the Leased Premises, without thereby terminating the Term, by giving notice of such election, and the effective date thereof, to the Tenant and to receive Re-Leasing Damages;

23.1.3 if the Tenant remains in possession of the Leased Premises after the Tenant's obligation to surrender the Leased Premises shall have arisen, to remove the Tenant and the Tenant's and any others' possessions from the Leased Premises by any of the following means without any liability to the Tenant therefor, any such liability to the Tenant therefor which might otherwise arise being hereby waived by the Tenant: legal proceedings (summary or otherwise), writ of dispossession and any other means and to receive Holdover Damages and, except in the circumstances contemplated by section 20 of this Agreement, to receive all expenses incurred in removing the Tenant and the Tenant's and any others' possessions from the Leased Premises, and of storing such possessions if the Landlord so elects;

23.1.4 to be awarded specific performance, temporary restraints and preliminary and permanent injunctive relief regarding Events of Default where the Landlord's rights and remedies at law may be inadequate, without the necessity of proving actual damages or the inadequacy of the rights and remedies at law;

23.1.5 to receive all expenses incurred in securing, preserving, maintaining and operating the Leased Premises during any period of vacancy, in making repairs to the Leased Premises, in preparing the Leased Premises for re-leasing and in re-leasing the Leased Premises including, without limiting the generality of the foregoing, any brokerage commissions;

23.1.6 to receive all legal expenses, including without limiting the generality of the foregoing, attorneys' fees incurred in connection with pursuing any of the Landlord's rights and remedies, including indemnification rights and remedies;

23.1.7 if the Landlord, in its sole discretion, elects to perform any obligation of the Tenant under this Agreement (other than the obligation to pay Rent) which the Tenant has not timely performed, to receive all expenses incurred in so doing;

23.1.8 to elect to pursue any legal or equitable right and remedy available to the Landlord under this Agreement or otherwise; and

23.1.9 to elect any combination, or any sequential combination of any of the rights and remedies set forth in subsection 23.1 of this Agreement.

23.2 In the event the Landlord elects the right and remedy set forth in subsection 23.1.1 of this Agreement, Termination Damages shall be equal to the amount which, at the time of actual payment thereof to the Landlord, is the sum of:

23.2.1 all accrued but unpaid Rent;

23.2.2 the present value (calculated using the most recently available (at the time of calculation) published weekly average yield on United States Treasury securities having maturities comparable to the balance of the then remaining Term) of the sum of all payments of Rent remaining due (at the time of calculation) until the date the Term would have expired (had there been no election to terminate it earlier) less the present value (similarly calculated) of all payments of rent to be received through the end of the Term (had there been no election to terminate it earlier) from a lessee, if any, of the Leased Premises at the time of calculation (and it shall be assumed for purposes of such calculations that (i) the amount of future Additional Rent due per year under this Agreement will be equal to the average Additional Rent per month due during the twelve (12) full calendar months immediately preceding the date of any such calculation, increasing annually at a rate of [***] percent compounded annually, (ii) if any calculation is made before the first anniversary of the end of the No Pass Through Period, the average Additional Rent due for any month after the end of the No Pass Through Period will be equal to [***] percent of the sum of the Base Year Operating Expenses, Base Year Taxes, Annual Amortized Capital Expenditures and Tenant Electric Charges (considered on an annual basis), (iii) if any calculation is made before the beginning of the Base Year, the sum of Base Year Taxes and Base Year Operational Expenses shall be assumed to be $[***]per gross rentable square foot and (iv) if any calculation is made before the end of the Base Year, Base Year Taxes and Base Year Operational Expenses may be extrapolated based on the year to date experience of the Landlord);

23.2.3 the Landlord’s reasonably estimated cost of demolishing any leasehold improvements to the Leased Premises; and

23.2.4 that amount, which as of the occurrence of the Event of Default, bears the same ratio to the costs, if any, incurred by the Landlord (and not paid by the Tenant) in building out the Leased Premises in accordance with section 5 of this Agreement as the number of months remaining in the Term (immediately before the occurrence of the Event of Default) bears to the number of months in the entire Term (immediately before the occurrence of the Event of Default).

23.3 In the event the Landlord elects the right and remedy set forth in subsection 23.1.2 of this Agreement, Re-Leasing Damages shall be equal to the Rent less any rent actually and timely received by the Landlord from any lessee of the Leased Premises or any portion thereof, payable at the respective times that Rent is payable under the Agreement plus the cost, if any, to the Landlord of building out or otherwise preparing the Leased Premises for, and leasing the Leased Premises to, any such lessee.

23.4 In the event the Landlord elects the right and remedy set forth in subsection 23.1.3 of this Agreement, Holdover Damages shall mean damages at the rate per month or part thereof equal to [***] or, in the event the Term shall have terminated by expiration under subsection 24.1.1 of this Agreement, [***]. The Tenant’s obligations under this subsection 23.4 shall survive the expiration or earlier termination of this Agreement.

23.5 In connection with any summary proceeding to dispossess and remove the Tenant from the Leased Premises under subsection 23.1.3 of this Agreement, the Tenant hereby waives:

23.5.1 any notices for delivery of possession thereof, of termination, of demand for removal therefrom, of the cause therefor, to cease, to quit and all other notices that might otherwise be required pursuant to 2A N.J.S.A. 18-53 et seq.;

23.5.2 any right the Tenant might otherwise have to cause a termination of the action or proceeding by paying to the Landlord or into court or otherwise any Rent in arrears;

23.5.3 any right the Tenant might otherwise have to a period of waiting between issuance of any warrant in execution of any judgment for possession obtained by the Landlord and the execution thereof;

23.5.4 any right the Tenant might otherwise have to transfer or remove such proceeding from the court (or the particular division or part of the court) or other forum in which it shall have been instituted by the Landlord to another court, division or part;

23.5.5 any right the Tenant might otherwise have to redeem the Tenant's former leasehold interest between the entry of any judgment and the execution of any warrant issued in connection therewith by paying to the Landlord or into Court or otherwise any Rent in arrears; and

23.5.6 any right the Tenant might otherwise have to appeal any judgment awarding possession of the Leased Premises to the Landlord.

23.6 The enumeration of rights and remedies in this section 23 of the Agreement is not intended to be exhaustive or exclusive of any rights and remedies which might otherwise be available to the Landlord, or to force an election of one or more rights and remedies to the exclusion of others, concurrently, consecutively or sequentially. On the contrary, each right and remedy enumerated in this section 23 of the Agreement is intended to be cumulative with each other right and remedy enumerated in this section 23 of the Agreement and with each other right and remedy that might otherwise be available to the Landlord; and the selection of one or more of such rights and remedies at any time shall not be deemed to prevent resort to one or more others of such rights and remedies at the same time or a subsequent time, even with regard to the same occurrence sought to be remedied.

23.7 Notwithstanding anything to the contrary contained in this Agreement the Landlord shall in each case of an Event of Default use commercially reasonable efforts to mitigate its damages.

24 Termination of the Term.

24.1 The Term shall terminate upon the earliest of the following events to occur:

24.1.1 expiration of the Term;

24.1.2 in connection with a transaction contemplated by section 16 of this Agreement and under the circumstances contemplated by subsection 16.2 of this Agreement, the effective date of termination of the Term as set forth in subsection 16.2;

24.1.3 upon the respective effective dates of termination set forth in the various subsections (whichever may be applicable) of subsection 15.1 of this Agreement providing for termination of the Term under various circumstances;

24.1.4 the effective date of any election by the Landlord under subsection 17.3.3 of this Agreement in response to the Tenant's notice of the Tenant's desire to assign this Agreement or to sublet all or a portion of the Leased Premises; or

24.1.5 the effective date of any election by the Landlord to terminate the Term under subsection 23.1.1 of this Agreement.

24.2 No termination of the Term shall have the effect of releasing the Tenant from any obligation or liability theretofore or thereby incurred and, until the Tenant shall have surrendered the Leased Premises in accordance with section 21 of this Agreement, from any obligation or liability thereafter incurred.

24.3 Any items of Tenant's Property (except money, securities and valuables) which remain in the Leased Premises after the expiration or earlier termination of the Term may, at the option of the Landlord, be deemed to have been abandoned and in such case may either be retained by the Landlord as its property or may be disposed of without accountability, at the Tenant's expense, in such manner as the Landlord may see fit.

25 Mortgage and Underlying Lease Priority. Subject to the provisions of section 26.6, this Agreement and the estate, interest and rights hereby created for the benefit of the Tenant are, and shall always be, subordinate to any mortgage (other than a mortgage created by the Tenant or a sale, transfer or other disposition by the Tenant in the nature of a security interest in violation of subsections 17.1.4 and 22.5, respectively, of this Agreement) already or afterwards placed on the Carnegie Center Complex, the Property, the Common Facilities, the Building or any estate or interest therein, including, without limiting the generality of the foregoing, any new mortgage or any mortgage extension,

renewal, modification, consolidation, replacement, supplement or substitution. This Agreement and the estate, interest and rights hereby created for the benefit of the Tenant are, and shall always be, subordinate to any ground lease already or afterwards made with regard to the Carnegie Center Complex, the Property, the Common Facilities, the Building or any estate or interest therein, including, without limiting the generality of the foregoing, any new ground lease or any ground lease extension, renewal, modification, consolidation, replacement, supplement or substitution. The provisions of this section 25 shall be self-effecting; and no further instrument shall be necessary to effect any such subordination. Nevertheless, the Tenant hereby consents that any mortgagee or mortgagee's successor in interest may, at any time and from time to time, by notice to the Tenant, subordinate its mortgage to the estate and interest created by this Agreement; and upon the giving of such notice, the subject mortgage shall be deemed subordinate to the estate and interest created by this Agreement regardless of the respective times of execution or delivery of either or of recording the subject mortgage.

26 Transfer by Landlord.

26.1 The Landlord shall have the right at any time and from time to time to sell, transfer, lease or otherwise dispose of the Carnegie Center Complex, the Property, the Common Facilities or the Building or any of the Landlord's interests therein, or to assign this Agreement or any of the Landlord's rights thereunder.

26.2 Upon giving notice of the occurrence of any transaction contemplated by subsection 26.1 of this Agreement, the Landlord shall thereby be relieved of any obligation that might otherwise exist under this Agreement with respect to periods subsequent to the effective date of any such transaction. If, in connection with any transaction contemplated by subsection 26.1 of this Agreement the Landlord transfers, or makes allowance for, any Security Deposit of the Tenant and gives notice of that fact to the Tenant, the Landlord shall thereby be relieved of any further obligation to the Tenant with regard to any such Security Deposit; and the Tenant shall look solely to the transferee with respect to any such Security Deposit.

26.3 In the event of the occurrence of any transaction contemplated by subsection 26.1 of this Agreement the Tenant, upon written request therefor from the transferee, shall attorn to and become the tenant of such transferee upon the terms and conditions set forth in this Agreement.

26.4 Notwithstanding anything to the contrary that may be set forth in subsections 26.1, 26.2 and 26.3 of this Agreement, in the event any mortgage contemplated by section 25 of this Agreement is enforced by the respective mortgagee pursuant to remedies provided in the mortgage or otherwise provided by law or equity and any person succeeds to the interest of the Landlord as a result of, or in connection with, any such enforcement, the Tenant shall, upon the request of such successor in interest, automatically attorn to and become the Tenant of such successor in interest without any change in the terms or provisions of this Agreement, except that such successor in interest shall not be bound by: (a) any payment of Basic Rent or Additional Rent (exclusive of prepayments in the nature of a Security Deposit) for more than one month in advance or (b) any amendment or other modification of this Agreement which was made without the consent of such mortgagee or such successor in interest; and, upon the request of such successor in interest, the Tenant shall execute, acknowledge and deliver any instrument(s) confirming such attornment.

26.5 If this Agreement and the estate, interest and rights hereby created for the benefit of the Tenant are ever subject and subordinate to any ground lease contemplated by section 25 of this Agreement:

26.5.1 upon the expiration or earlier termination of the term of any such ground lease before the termination of the Term under this Agreement, the Tenant shall attorn to, and become the Tenant of, the lessor under any such ground lease and recognize such lessor as the Landlord under this Agreement for the balance of the Term; and

26.5.2 such expiration or earlier termination of the term of any such ground lease shall have no effect on the Term under this Agreement.

26.5.3 notwithstanding the foregoing, Landlord represents that there is presently no ground lease or mortgage encumbering the Property or the Leased Premises.

26.6 Notwithstanding anything to the contrary that may be set forth in section 25 of this Agreement, with respect to any mortgages or ground leases contemplated by section 25 of this Agreement, the Landlord shall use reasonable commercial efforts to obtain from each such mortgagee and ground lessor its respective standard form of non-disturbance, attornment and subordination agreement which includes a provision to the effect that, in the event of

enforcement of any remedies provided in the respective mortgage or ground lease, respectively, or otherwise, so long as an Event of Default shall not have occurred, the Tenant shall not be disturbed in its possession of the Leased Premises in accordance with this Agreement and which does not include any provision increasing the Tenant's obligations otherwise due, or diminishing the Tenant's rights otherwise available, in either case in accordance with this Agreement. Any processing or other fee that the mortgagee or ground lessor may charge and any reasonable legal expense that the Landlord may incur in connection with performing its obligations under this subsection shall be at the sole cost of Landlord.

27 Indemnification.

27.1 To the fullest extent permitted by law and to the extent not resulting from any act, omission, fault, negligence or misconduct of the Landlord or its contractors, licensees, invitees, servants or employees, the Tenant waives any right to contribution against the Landlord Parties and agrees to indemnify and save harmless the Landlord Parties from and against all claims of whatever nature by a third party arising from or claimed to have arisen from (i) any act, omission or negligence of the Tenant Parties; (ii) any accident, injury or damage whatsoever caused to any person, or to the property of any person, occurring in the Leased Premises from the earlier of (a) the date on which any Tenant Party first takes possession the Leased Premises for any reason or (b) the Commencement Date, and thereafter throughout and until the end of the Term, and after the end of the Term for so long after the end of the Term as any of the Tenant's Property remains in the Leased Premises, or the Tenant or anyone acting by, through or under the Tenant may be in possession of any part of, or have access to the Leased Premises or any portion thereof; (iii) any accident, injury or damage whatsoever occurring outside the Leased Premises but within the Building, within the Common Facilities, on the Property or within the Carnegie Center Complex, where such accident, injury or damage results, or is claimed to have resulted, from any act, omission or negligence on the part of any of the Tenant Parties; or (iv) any breach of this Agreement by the Tenant. The Tenant shall pay such indemnified amounts as they are incurred by the Landlord Parties. This indemnification shall not be construed to deny or reduce any other rights or obligations of indemnity that a Landlord Party may have under this Agreement. The indemnification rights of the Landlord Parties provided in this Agreement are their exclusive indemnification rights with respect to this Agreement. The Landlord Parties waive any additional rights to indemnification they may have against the Tenant Parties with respect to this Agreement under common law.

27.2 In the event that the Tenant breaches any of its indemnity obligations hereunder: (i) the Tenant shall pay to the Landlord Parties all liabilities, loss, cost, or expense (including reasonable attorney's fees) incurred as a result of said breach, and the reasonable value of time expended by the Landlord Parties as a result of said breach; and (ii) the Landlord Parties may deduct and offset from any amounts due to the Tenant under this Agreement any amounts owed by the Tenant pursuant to this section 27.

27.3 The indemnification obligations under this section 27 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Tenant or any subtenant or other occupant of the Leased Premises under workers' compensation acts, disability benefit acts, or other employee benefit acts. The Tenant waives any immunity from or limitation on its indemnity or contribution liability to the Landlord Parties based upon such acts.

27.4 The Tenant shall require its subtenants and other occupants (other than employees and guests of Tenant visiting the Leased Premises in the ordinary course of Tenant's business) of the Leased Premises to provide similar indemnities to the Landlord Parties in a form reasonably acceptable to the Landlord.

27.5 The terms of this section 27 shall survive any termination or expiration of this Agreement.

27.6 The foregoing indemnity and hold harmless agreement shall include indemnity for all costs, expenses and liabilities (including, without limitation, attorneys' fees and disbursements) incurred by the Landlord Parties in connection with any such claim or any action or proceeding brought thereon, and the defense thereof. In addition, in the event that any action or proceeding shall be brought against one or more Landlord Parties by reason of any such claim, the Tenant, upon request from the Landlord Party, shall resist and defend such action or proceeding on behalf of the Landlord Party by counsel appointed by the Tenant's insurer (if such claim is covered by insurance without reservation) or otherwise by counsel reasonably satisfactory to the Landlord Party. The Landlord Parties shall not be bound by any compromise or settlement of any such claim, action or proceeding without the prior written consent of such Landlord Parties.

27.7 The Tenant agrees to use and occupy the Leased Premises, and to use such other portions of the Building, the Property and the Carnegie Center Complex as the Tenant is given the right to use by this Agreement, at the Tenant's own risk. The Landlord Parties shall not be liable to the Tenant Parties for any damage, injury, loss, compensation, or claim (including, but not limited to, claims for the interruption of or loss to a Tenant Party's business) based on, arising out of or resulting from any cause whatsoever, including, but not limited to, repairs to any portion of the Leased Premises, the Building, the Property or the Carnegie Center Complex, any fire, robbery, theft, mysterious disappearance, or any other crime or casualty, the actions of any tenants of Other Leased Premises or of any other person or persons, or any leakage in any part or portion of the Leased Premises, the Common Facilities, the Building or the Property, or from water, rain or snow that may leak into, or flow from any part of the Leased Premises, the Common Facilities, the Building or the Property, or from drains, pipes or plumbing fixtures in the Building or on the Property. Any goods, property or personal effects stored or placed in or about the Leased Premises shall be at the sole risk of the Tenant Party, and neither the Landlord Parties nor their insurers shall in any manner be held responsible therefor. The Landlord Parties shall not be responsible or liable to a Tenant Party, or to those claiming by, through or under a Tenant Party, for any loss or damage that may be occasioned by or through the acts or omissions of persons occupying adjoining premises or any part of the premises adjacent to or connecting with the Leased Premises or any part of the Building or otherwise. The provisions of this section shall be applicable to the fullest extent permitted by law, and until the expiration or earlier termination of the Term, and during such further period as any of the Tenant's Property remains in the Leased Premises, or the Tenant or anyone acting by, through or under the Tenant may use, or be in occupancy of any part of, or have access to the Leased Premises or of the Building.

28 Parties' Liability.

28.1 None of the following occurrences shall constitute a breach of this Agreement by the Landlord, a termination of the Term, an active or constructive eviction or an occurrence requiring an abatement of Rent:

28.1.1 the inability of the Landlord to provide any utility or service to be provided by the Landlord, as described in section 8 of this Agreement which is due to causes beyond the Landlord's control, or to necessary or advisable improvements, maintenance, repairs or emergency, so long as the Landlord uses reasonable efforts and diligence under the circumstances to restore the interrupted service or utility. Any interruption of utilities caused by Landlord's or it's agents negligence or willful misconduct, continuing for more than five (5) consecutive business days, and Landlord has not commenced cure, and such interruption renders all or substantially all of the Leased Premises untenantable, and the Tenant actually vacates such portion of the Leased Premises, then Tenant shall be entitled to a prorated abatement of Rent from the sixth (6^{th}) consecutive business day until such portion of the Leased Premises is tenantable.

28.1.2 any improvement, modification, alteration or other change made to the Carnegie Center Complex, the Property, the Building or the Common Facilities by the Landlord consistently with the Landlord's obligations set forth in subsection 13.2 of this Agreement; and

28.1.3 any change in any Federal, state or local law or ordinance.

28.2 Except for the commencement, duration or termination of the Term (other than under the circumstances contemplated by subsection 15.1 of this Agreement), the Tenant's obligation to make timely payments of Rent, the Tenant's obligation to maintain certain insurance coverage in effect, the Tenant's failure to perform any of its other obligations under this Agreement if such failure has caused loss or damage that cannot promptly be cured by subsequent act of the Tenant and the period within which any type of option or optional right exercisable by the Tenant must be exercised, any period of time during which the Landlord or the Tenant is prevented from performing any of its respective obligations under this Agreement because of fire, any other casualty or catastrophe, strikes, lockouts, civil commotion, acts of God or the public enemy, governmental prohibitions or preemptions, embargoes or inability to obtain labor or material due to shortage, governmental regulation or prohibition or any other cause beyond the Landlord's control, shall be added to the time when such performance is otherwise required under this Agreement.

28.3 In the event the Landlord is an individual, partnership, joint venture, association or a participant in a joint tenancy or tenancy in common, the Landlord, the partners, venturers, members and joint owners shall not have any personal liability or obligation under or in connection with this Agreement or the Tenant's use and occupancy of the Leased Premises; but recourse shall be limited exclusively to the Landlord's interest in the Building.

28.4 If, at any time during the Term, the payment or collection of any Rent otherwise due under this Agreement shall be limited, frozen or otherwise subjected to a moratorium by applicable law, and such limitation,

freeze or other moratorium shall subsequently be lifted, whether before or after the termination of the Term, such aggregate amount of Rent as shall not have been paid or collected during the Term on account of any such limitation, freeze or other moratorium, shall thereupon be due and payable at once. There shall be added to the maximum period of any otherwise applicable statute of limitation the entire period during which any such limitation, freeze or other moratorium shall have been in effect.

28.5 If this Agreement is executed by more than one person as the Tenant, their liability under this Agreement and in connection with the use and occupancy of the Leased Premises shall be joint and several.

28.6 In the event any rate of interest, or other charge in the nature of interest, calculated as set forth in this Agreement would lead to the imposition of a rate of interest in excess of the maximum rate permitted by applicable usury law, only the maximum rate permitted shall be charged and collected.

28.7 The rule of construction that any ambiguities that may be contained in any contract shall be construed against the party drafting the contract shall be inapplicable in construing this Agreement.

29 Security Deposit.

29.1 The Tenant shall pay to the Landlord upon execution and delivery of this Agreement a sum equal to $[***] as a security deposit, in the form of a letter of credit as described in subsection 29.2 of this Agreement, to be held by the Landlord as security for the Tenant's performance of all the Tenant's obligations under this Agreement. The Tenant shall not encumber the Security Deposit. If there has been no Event of Default, within thirty (30) days after termination of the Term the Landlord shall return the entire balance of the Security Deposit to the Tenant. The Tenant will not look to any foreclosing mortgagee of the Property, the Building, the Common Facilities or any interest therein for such return of the balance of the Security Deposit, unless the mortgagee has expressly assumed the Landlord's obligations under this Agreement or has actually received the balance of the Security Deposit.

29.2 The Security Deposit contemplated by subsection 29.1 of this Agreement shall be in the form of an irrevocable letter of credit in the amount of the Security Deposit for the benefit of the Landlord. The letter of credit shall (i) be issued by and drawn on a reputable commercial bank operating in the United States reasonably satisfactory to the Landlord and at a minimum having a long term issuer credit rating from Standard and Poor's Professional Rating Service of A or a comparable minimum rating from Moody's Professional Rating Service, (ii) permit one or more draws thereunder to be made which are conditioned only on the Landlord's certification of the occurrence of an Event of Default that, at the time of the draw, shall not have been cured in full by the Tenant, (iii) permit transfers at any time without charge, and (iv) provide that any notices to the Landlord be sent to the notice address provided for the Landlord in this Agreement. If the credit rating for the issuer of such letter of credit falls below the standard set forth in (i) above, or if the financial condition of such issuer changes in any other material adverse way, or if the issuer is placed in receivership by the Federal Deposit Insurance Corporation or other governmental entity, the Landlord shall have the right to require that the Tenant provide a substitute letter of credit that complies in all respects with the requirements of this subsection, and the Tenant's failure to provide the same within ten (10) days following the Landlord's written demand therefor shall entitle the Landlord to immediately draw 100% of the then current letter of credit and hold the proceeds as a cash Security Deposit in accordance with subsection 29.1 of this Agreement. In the case of the issuer being placed in receivership by the Federal Deposit Insurance Corporation or other governmental entity, the failure of the Federal Deposit Insurance Corporation or other governmental entity to honor the presentation of documentation by the Landlord to draw 100% of the then current letter of credit shall be an Event of Default under this Agreement. The letter of credit shall be held by the Landlord as a Security Deposit for the Tenant's performance of all the Tenant's obligations under this Agreement. The Landlord, in its sole discretion, may draw upon the Security Deposit to cure any Event of Default under this Agreement. If any such application is made, upon notice by the Landlord to the Tenant, the Tenant shall promptly replace the amount so applied in the form of an additional letter of credit with otherwise similar terms. The letter of credit shall be for a term equal to the Term or, if the issuer of the letter of credit regularly and customarily only issues letters of credit for shorter terms, for the longest of such shorter regular and customary terms, but in no event for a term shorter than one year. If the letter of credit is issued for a term shorter than the Term, the letter of credit shall contain an "evergreen clause" which shall provide for automatic renewals, without written amendment, for successive terms each of which is equal to such term, unless the issuer gives to the Landlord at least sixty (60) days' written notice of cancellation or non-renewal of the letter of credit prior to the expiration date of the letter of credit. In the event that the issuer gives such notice, the Tenant shall obtain and deliver to the Landlord a substitute letter of credit that complies in all respects with the requirements of this subsection, no later than thirty (30) days prior to expiration of the term of the then current letter of credit. If the Tenant shall fail to obtain and deliver to the Landlord on a timely basis any such conforming substitute letter of credit, the Landlord shall

have the right to draw 100% of the then current letter of credit and hold the proceeds as a cash Security Deposit in accordance with subsection 29.1 of this Agreement.

30 Representations. The Tenant hereby represents and warrants that:

30.1.1 no broker or other agent has shown the Leased Premises or the Building to the Tenant, or brought either to the Tenant's attention, except CBRE, Inc., whose entire commission therefor is set forth in a separate document and which commission the Tenant understands will be paid by the Landlord directly to the person named;

30.1.2 the execution and delivery of, the consummation of the transactions contemplated by and the performance of all its obligations under, this Agreement by the Tenant have been duly and validly authorized by its general partners, to the extent required by their partnership agreement and applicable law, if the Tenant is a partnership or, if the Tenant is a limited liability company, by its representative(s) and members to the extent required by their operating agreement and applicable law or, if the Tenant is a corporation, by its board of directors and, if necessary, by its stockholders at meetings duly called and held on proper notice for that purpose at which there were respective quorums present and voting throughout; and no other approval, partnership, corporate, governmental or otherwise, is required to authorize any of the foregoing or to give effect to the Tenant's execution and delivery of this Agreement;

30.1.3 the execution and delivery of, the consummation of the transactions contemplated by and the performance of all its obligations under, this Agreement by the Tenant will not result in a breach or violation of, or constitute a default under, the provisions of any statute, charter, certificate of incorporation or bylaws or partnership agreement of the Tenant or any affiliate of the Tenant, as presently in effect, or any indenture, mortgage, lease, deed of trust, other agreement, instrument, franchise, permit, license, decree, order, notice, judgment, rule or order to or of which the Tenant or any affiliate of the Tenant is a party, a subject or a recipient or by which the Tenant, any affiliate of the Tenant or any of their respective properties and other assets is bound; and

30.1.4 (i) the Tenant is not, nor is it owned or controlled directly or indirectly by, any person, group, entity or nation named on any list issued by the Office of Foreign Assets Control of the United States Department of the Treasury ("OFAC") pursuant to Executive Order 13224 or any similar list or any law, order, rule or regulation or any Executive Order of the President of the United States as a terrorist, "Specially Designated National and Blocked Person" or other banned or blocked person (any such person, group, entity or nation being hereinafter referred to as a "Prohibited Person"); (ii) the Tenant is not (nor is it owned or controlled, directly or indirectly, by any person, group, entity or nation which is) acting directly or indirectly for or on behalf of any Prohibited Person; and (iii) neither Tenant (nor any person, group, entity or nation which owns or controls the Tenant, directly or indirectly) has conducted or will conduct business or has engaged or will engage in any transaction or dealing with any Prohibited Person, including without limitation any assignment of this Agreement or any subletting of all or any portion of the Leased Premises or the making or receiving of any contribution of funds, goods or services to or for the benefit of a Prohibited Person. In connection with the foregoing, is expressly understood and agreed that (x) any breach by the Tenant of the foregoing representations and warranties shall be deemed a default by the Tenant under subsection 22.2 of this Agreement and shall be covered by the indemnity provisions of section 27 of this Agreement, and (y) the representations and warranties contained in this subsection 30.4 shall be continuing in nature and shall survive the expiration or earlier termination of this Agreement.

30.2 The Landlord hereby represents and warrants that:

30.2.1. to the Best of the Landlord's knowledge, the Building and the Property comply with all applicable Laws as of the date of this Agreement; and

30.2.2. The Landlord shall be responsible for causing the Property and the Building, including the Leased Premises, to comply with all applicable Laws at all times during the Term, as the same may be extended as provided herein, except to the extent of any alterations, improvements or other modifications to the Leased Premises made by the Tenant or required solely as a result of the Tenant's unique and specific use of the Leased Premises, which shall be the Tenant's responsibility, at the Tenant's sole cost and expense.

30.2.3. to the best of the Landlord's knowledge, the Building and the Leased Premises are free of asbestos and any hazardous waste or toxic materials that shall have been identified by the scientific community or by any Federal, state or local statute (including, without limiting the generality of the foregoing, the Spill Compensation and Control Act (58 N.J.S.A. 23.11 et seq.) and the Industrial Site Recovery Act (13 N.J.S.A. 1 K-6 et seq.) (collectively, "Hazardous Materials"), as they may be amended), ordinance, rule, regulation or order as toxic or

hazardous to health or to the environment, except deminimus quantities of janitorial and property management supplies in accordance with all applicable laws, rules and regulations;

30.2.4. There is no Ground Lease, Mortgage or other encumbrance on the Leased Premises or the Property, which would prohibit Landlord from leasing the Leased Premises to Tenant or for Tenant to leased the Leased Premises from Landlord. No Other Tenants have a right of first refusal or other right with respect to the Leased Premises.

31 Reservation in Favor of Tenant. Neither the Landlord's forwarding a copy of this document to any prospective tenant nor any other act on the part of the Landlord prior to execution and delivery of this Agreement by the Landlord shall give rise to any implication that any prospective tenant has a reservation, an option to lease or an outstanding offer to lease any premises.

32 Tenant's Certificates and Mortgagee Notice Requirements.

32.1 Promptly upon request of the Landlord at any time or from time to time, but in no event more than five (5) days after the Landlord's respective request, the Tenant shall execute, acknowledge and deliver to the Landlord or its designee an estoppel or other certificate, satisfactory in form and substance to the Landlord and any of its mortgagees, ground lessors or lessees or transferees or prospective mortgagees, ground lessors or lessees or transferees, with respect to any of or all the following matters:

32.1.1 whether this Agreement is then in full force and effect;

32.1.2 whether this Agreement has not been amended, modified, superseded, canceled, repudiated or revoked;

32.1.3 whether the Landlord has satisfactorily completed all construction work, if any, required of the Landlord or contractors selected and retained by the Landlord in connection with readying the Leased Premises for occupancy by the Tenant in accordance with section 5 of this Agreement;

32.1.4 whether the Tenant is then in actual possession of the Leased Premises;

32.1.5 whether the Tenant then has any known defenses or counterclaims under this Agreement or otherwise against the Landlord or with respect to the Leased Premises;

32.1.6 whether to Tenant's knowledge the Landlord is then in breach of this Agreement in any respect;

32.1.7 whether the Tenant then has no knowledge of any assignment of this Agreement, the pledging or granting of any security interest in this Agreement or in Rent due and to become due under this Agreement;

32.1.8 whether Rent is not then accruing under this Agreement in accordance with its terms;

32.1.9 whether any Rent is not then in arrears;

32.1.10 whether Rent due or to become due under this Agreement has not been prepaid by more than one month;

32.1.11 if the response to any of the foregoing matters is in the negative, a specification of all the precise reasons that necessitated the negative response in each instance; and

32.1.12 any other matter reasonably requested by the Landlord or any of its mortgagees, ground lessors or lessees or transferees or prospective mortgagees, ground lessors or lessees or transferees, including, without limiting the generality of the foregoing, such information as the Landlord may request for purposes of assuring compliance with the Industrial Site Recovery Act (13 N.J.S.A. 1K-6 et seq.), as it may be amended, and any other applicable Federal, state or local statute, ordinance, rule, regulation or order concerned with environmental matters.

32.2 If, in connection with the Landlord's or a prospective transferee's obtaining financing or refinancing of the Carnegie Center Complex, the Property, the Building, the Common Facilities, any portion thereof or any interest

therein, the Landlord or a prospective lender shall so request, the Tenant shall furnish to the requesting party within fifteen (15) days of the request:

32.2.1 its written consent to any requested modifications of this Agreement provided that, in each such instance, the requested modification does not increase the Rent otherwise due or, in the reasonable judgment of the Tenant, otherwise materially increase the obligations of the Tenant under this Agreement or materially adversely affect the Tenant's leasehold interest created hereby or the Tenant's use and enjoyment of the Leased Premises (except in the circumstances contemplated by section 16 of this Agreement); and

32.2.2 summary financial information regarding its financial position as of the close of its most recently completed fiscal year and its most recently completed interim fiscal period and regarding its results of operations for the periods then ended and comparable year earlier periods, certified by the Tenant's chief financial officer to be a complete, accurate and fair presentation of the summary financial information purporting to be set forth therein.

32.3 If the Landlord or any of its mortgagees gives notice to the Tenant of any of their respective names and addresses from time to time, the Tenant shall give notice to each such mortgagee of any notice of breach or default previously or afterwards given by the Tenant to the Landlord under this Agreement and provide in such notice that if the Landlord has not cured such breach or default within any permissible cure period then such mortgagee shall have the greater of (a) an additional period of thirty (30) days or (b) if such default cannot practically be cured within such period, such additional period as is reasonable under the circumstances, within which to cure such default. Upon request of the Landlord at any time or from time to time, the Tenant shall execute, acknowledge and deliver to the Landlord or its designee an acknowledgment of receipt of any such notice, an acknowledgment of receipt of any notice of assignment of this Agreement or rights hereunder by the Landlord to any of its mortgagees and the Tenant's agreement to the foregoing effect on the respective forms, if any, furnished by the Landlord or the respective mortgagees.

33 Appraisal, Waiver of Jury Trial and Arbitration.

33.1 If the Landlord and the Tenant are unable, at any time of reference, to agree on the Market Rental Rate whenever a determination of the Market Rental Rate is required under this Agreement (other than in the context of Holdover Damages), within 15 days after this appraisal procedure is invoked by either party, each shall appoint one qualified appraiser of its choice which two appraisers shall then together choose a third qualified appraiser within 10 days after their appointment. Within 20 days after the appointment of the third appraiser, each of the three appraisers shall submit his or her opinion of the Market Rental Rate, as defined in, and at the time specified by, the definition of Market Rental Rate set forth in Exhibit E attached hereto, by notice to the Landlord and the Tenant. The Market Rental Rate shall be the arithmetic mean of the two closest appraisers' opinions, unless the absolute difference between the middle opinion and the highest and lowest opinion, respectively, is equal, in which case the middle opinion shall be the Market Rental Rate. Any determination of the Market Rental Rate in accordance with this subsection 33.1 of the Agreement shall be final and binding on, and not appealable by, the Landlord and the Tenant with respect to the respective instance in which the appraisal procedure was invoked. An appraiser shall be qualified, as that phrase is used in this subsection 33.1 of the Agreement, if he is independent, a member in good standing of the Appraisal Institute (successor to the American Institute of Real Estate Appraisers), has substantial prior experience appraising the market rental values of leased offices in office buildings located in central New Jersey and is not named in subsection 30.1 of this Agreement. The expense of the third appraiser shall be borne equally by the Landlord and the Tenant; otherwise each party shall bear the expense of its respective appraiser.

33.2 The parties hereby waive any right they might otherwise have to a trial by jury in connection with any dispute arising out of or in connection with this Agreement or the use and occupancy of the Leased Premises; and, except as otherwise set forth in subsection 33.1 of this Agreement, they hereby consent to arbitration of any such dispute in Princeton, New Jersey, in accordance with the rules for commercial arbitration of the American Arbitration Association or a successor organization, except that the Landlord, in its sole discretion, may, with respect to any dispute involving either (i) the Landlord's right to re-enter and re-take possession of the Leased Premises or (ii) the determination of money damages following the occurrence of an Event of Default under this Agreement, elect to pursue any of or all its rights in any court of competent jurisdiction. Judgment upon any arbitration award may be entered in any court of competent jurisdiction.

34 Severability. If any term or provision of this Agreement, including, but not limited to, any waiver of contribution or claims, indemnity obligation, or limitation of liability or of damages, or the application of any such term or provision

to any person or circumstance shall to any extent be conclusively determined by a court of competent jurisdiction to be illegal, invalid or otherwise unenforceable, the remainder of this Agreement, or the application of such term or provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and each term and provision of this Agreement shall be valid and be enforced to the fullest extent permitted by law.

35 Notices. All notices contemplated by, permitted or required by this Agreement shall be in writing. All notices required by this Agreement shall be personally delivered or forwarded by certified mail--return receipt requested, or by a nationally recognized overnight delivery service provided confirmation can be readily obtained of delivery on the next business day, addressed as follows:

If to the Landlord:

Boston Properties Limited Partnership
c/o Boston Properties
Attention:

with a copy to:

Boston Properties Limited Partnership
c/o Boston Properties
Attention:

If to the Tenant:

Acadia Pharmaceuticals
Attention:

with a copy to:

Blanchard, Krasner & French
Attention:

Either party may from time to time change the address prescribed in this Agreement for notices to it by notice to the other. All notices required under this Agreement shall be deemed given upon their deposit, properly addressed and postage prepaid, in a postal depository or upon personal delivery to the intended party or the next business day after delivery to an overnight courier as described above provided confirmation of delivery on the next business day is obtained, in either case, regardless of whether delivery shall be refused.

36 Captions. Captions have been inserted at the beginning of each section of this Agreement for convenience of reference only and such captions shall not affect the construction or interpretation of any such section of this Agreement.

37 Counterparts. This Agreement may be executed in more than one counterpart, each of which shall constitute an original of this Agreement but all of which, taken together, shall constitute one and the same Agreement.

38 Applicable Law. This Agreement and the obligations of the parties hereunder shall be governed by and construed in accordance with the laws of the State of New Jersey.

39 Exclusive Benefit. Except as may be otherwise specifically set forth in this Agreement, this Agreement is made exclusively for the benefit of the parties hereto and their permitted assignees and no one else shall be entitled to any right, remedy or claim by reason of any provision of this Agreement.

40 Successors. This Agreement shall be binding upon the parties hereto and their respective successors and assigns.

41 Amendments. This Agreement contains the entire agreement of the parties hereto, subsumes all prior discussions and negotiations and, except as may otherwise be specifically set forth in this Agreement, this Agreement may not be amended or otherwise modified except by a writing signed by all the parties to this Agreement.

42 Waiver. Except as may otherwise be specifically set forth in this Agreement, the failure of any party at any time or times to require performance of any provision of this Agreement shall in no manner affect the right at a later time to enforce the same. No waiver by any party of any condition, or of the breach of any term, covenant, representation or warranty set forth in this Agreement, whether by conduct or otherwise, in any one or more instances shall be deemed to be or construed as a further or continuing waiver of any such condition or breach, or as a waiver of any other condition or of the breach of any other term, covenant, representation or warranty set forth in this Agreement. The Landlord's acceptance of, or endorsement on, any partial payment of Rent or any late payment of Rent from the Tenant shall not operate as a waiver of the Landlord's right to the balance of the Rent due on a timely basis regardless of any writing to the contrary on, or accompanying, the Tenant's partial payment or the Landlord's putative acquiescence therein.

43 Course of Performance. No course of dealing or performance by the parties, or any of them, shall be admissible for the purpose of obtaining an interpretation or construction of this Agreement at variance with the express language of the Agreement itself.

44 Landlord's Concessions.

44.1 If, (a)(i) no Event of Default shall have occurred or (ii) if any Event of Default shall have occurred, the Tenant shall have previously cured it in full or the Landlord shall have waived it and (b) if there shall not have been a History of Recurring Events of Default, the Landlord hereby grants to the Tenant a non-exclusive license (the "Antenna License"):

44.1.1 during the Term, at its sole cost and expense, to install, maintain and replace a single antenna and associated equipment (the "Antenna") on the roof of the Building and in other Common Facilities in the Building, at such locations to be approved by the Landlord in its sole discretion (the "Antenna Licensed Area") in accordance with plans to be submitted by the Tenant to the Landlord regarding the installation (or, when applicable, the replacement) of the Antenna, which shall include Antenna specifications, an electrical/cabling routing diagram, and the location of the devices the Antenna is intended to serve (the "Antenna Plan"); and

44.1.1.1 during the Term to use and operate the Antenna exclusively for the Antenna Licensed Use (as hereinafter defined); and

44.1.1.2 have such access to the Antenna Licensed Area as may be necessary to accomplish the foregoing.

44.1.2 The Landlord is making the Antenna Licensed Area available to the Tenant under the Antenna License granted hereby in the Antenna Licensed Area's present "AS IS" condition. The Landlord makes no warranty or representation that the Antenna Licensed Area is suitable for the Antenna Licensed Use. The Tenant shall make whatever examination and study it deems necessary or appropriate to ascertain whether the Antenna Licensed Area is suitable for the Antenna Licensed Use. The Antenna License granted hereby is not exclusive; and the Landlord hereby reserves the right to grant, renew or extend similar or dissimilar licenses to any and all other persons. The Tenant's availing itself of any rights or incurring any obligations under or in connection with the Antenna License granted hereby shall be exclusively at the Tenant's expense and risk. The Tenant shall use the Antenna exclusively for telecommunications purposes to serve the Leased Premises (the "Antenna Licensed Use"). During the Antenna License, the Tenant shall: (i) maintain and repair both the Antenna and the Antenna Licensed Area; (ii) not damage the electrical or other systems or the structure of the Building or the Property or that of any tenant of Other Leased Premises in the course of installation, maintenance, operation, replacement, or removal of the Antenna; (iii) not permit or suffer the Antenna to interfere with the communications, data or video wires or cables of any other person or the signals carried thereby or by electromagnetic broadcast or with the computer equipment of any other person; and (iv) comply with all applicable Federal, state and local statutes, rules, regulations and ordinances and with rulings and orders of any governmental authority with jurisdiction regarding the Antenna or its installation, replacement, maintenance, removal or use. Prior to installation, the Tenant shall provide the Landlord with one complete copy of each of the Antenna's full specifications, installation manual, operational manual and any other manual provided by the manufacturer or installer and intended for the end user.

44.1.3 The Tenant shall utilize the Landlord's supplied common antenna junction box and wireway conduit located on the roof of the Building for the installation of the Antenna.

44.1.4 Notwithstanding anything to the contrary set forth in this subsection 44.1, the Tenant shall:

44.1.4.1 not install any Antenna of such a size and weight that, in the reasonable opinion of the Landlord's structural engineer, would require any structural reinforcement of the Building or any of its components; and

44.1.4.2 pay the Landlord, in addition to all other Rent due under this Agreement the following amount(s) per month of the Term: (i) $[***] for a satellite dish antenna up to 18 inches in diameter or width or for any other type of antenna up to 18 inches in length, (ii) $[***] for a satellite dish antenna over 18 inches and not more than 36 inches in diameter or width or for any other type of antenna over 18 inches and not more than 36 inches in length, or (iii) $[***] for a satellite dish antenna over 36 inches in diameter or width or for any other type of antenna over 36 inches in length.

44.1.5 Upon termination of the Term, the Tenant shall, at its sole cost and expense, remove the Antenna and related wiring from the Antenna Licensed Area and the Leased Premises and restore: (i) any portions of the Antenna Licensed Area, the Leased Premises, the Building and the Property damaged in the process and (ii) the Antenna Licensed Area and the Leased Premises substantially to their condition immediately prior to the commencement of the installation of the Antenna, reasonable wear and use excepted.

44.2 If, prior to the respective date of exercise thereof, (a)(i) no Event of Default shall have occurred or (ii) if any Event of Default shall have occurred, the Tenant shall have previously cured it in full or the Landlord shall have waived it, (b) there shall not have been a History of Recurring Events of Default, and (c) the Tenant is then leasing and occupying at least 25,429 square feet of gross rentable floor space in the Building, exercisable exclusively at the time and in the manner set forth below in subsection 44.2.2 of this Agreement, to require that the Landlord (subject to any similar obligations of the Landlord to any tenants of the Carnegie Center Complex at the time such notice is received and provided that the Landlord is not negotiating with another prospective tenant or existing tenant of the Carnegie Center Complex for such space at the time that such notice is received) whenever the Landlord becomes aware of Available Space in the Building, give notice to the Tenant offering to lease such Available Space to the Tenant at the Market Rental Rate then in effect (and specifying same) for a term commencing on the date set forth in the Landlord's notice and continuing for the greater of (a) the balance of the Initial Term, or (b) five (5) years, and the Tenant shall have the right, exercisable exclusively at the time and in the manner set forth below in subsection 44.2.2 of this Agreement, to accept such Available Space at the Market Rental Rate so specified for a term commencing on the date set forth in the Landlord's notice and continuing for the greater of (a) the balance of the Initial Term, or (b) five (5) years. Such requirement on the Landlord shall commence on the tenth (10th) day after the Tenant shall have timely and otherwise properly given such notice to the Landlord and shall continue in effect until the earlier of: (i) the Tenant's timely and otherwise proper acceptance of any such offer made by the Landlord, (ii) the Tenant's failure to timely and otherwise properly accept any such offer made by the Landlord, or (iii) six (6) months after the Tenant shall have timely and otherwise properly given such notice to the Landlord provided that during such six (6) month period, there was no Available Space in the Building. This is the "Right to Lease Additional Space". The Right to Lease Additional Space may not be exercised by any person other than the original Tenant, ACADIA Pharmaceuticals Inc., or by an assignee of the Tenant to which the Tenant has assigned this Agreement in accordance with the terms of subsection 17.6 of this Agreement. In the event the Tenant assigns this Agreement or sublets, or licenses the use or occupancy of, the Leased Premises or any portions thereof other than in accordance with subsection 17.6 of this Agreement, or attempts to do so, (i) the Right to Lease Additional Space shall thereupon expire, and (ii) if the Right to Lease Additional Space has theretofore been properly exercised, but the commencement date with respect to such additional space has not yet actually occurred, the Right to Lease Additional Space shall be rescinded, if the Landlord so elects by notice to the Tenant, to the same extent as if it had not been exercised at all.

44.2.1. The Tenant shall exercise its right to require the Landlord to give the notices and make the offers contemplated by subsection 44.2 of this Agreement by giving timely and otherwise proper notice to the Landlord of its desire to lease additional space.

44.2.2. The Tenant shall exercise its right to accept the Landlord's offer of additional space contemplated by subsection 44.2 of this Agreement, by giving notice of acceptance to the Landlord within five (5) days after the Landlord gives notice of the offer to the Tenant. All additional space leased by the Tenant pursuant to the exercise of the Right to Lease Additional Space shall be taken AS IS. If the Tenant fails timely to accept any such offer of the Landlord pursuant to section 44.2 of this Agreement, its Right to Lease Additional Space shall thereupon terminate and be of no further force and effect.

44.2.3. If Tenant exercises this "Right to Lease Additional Space" in accordance with this section 44.2 within the first twelve (12) months of the Initial Term, the Market Rental Rate shall be $[***] per rentable square foot. In addition, Tenant shall be entitled to a prorated period of free rent and a prorated Landlord Contribution with respect to Fitout of Tenant's Additional Space.

44.3 If, prior to the date of exercise thereof and the date of effectiveness thereof, (i) no Event of Default shall have occurred or (ii) if an Event of Default shall have occurred, the Tenant shall have previously cured it in full or the Landlord shall have waived it, the Tenant shall have one option, exercisable exclusively at the time and in the manner set forth below in this subsection 44.3, to terminate the Term effective sixty-three (63) months from the Rent Commencement Date (the "Early Termination Date". This is the "Option to Terminate Early". In the event the Tenant desires to exercise the Option to Terminate Early, the Tenant shall give timely notice of its exercise to the Landlord twelve (12) months prior to the Early Termination Date and enclosing with such notice full payment of that amount which is equal to the sum of: (x) the unamortized portion of (i) the total amount credited, reimbursed or paid by the Landlord as contemplated by section 5 of this Agreement, (ii) the total brokerage commission paid to the broker named in subsection 30.1.1 of this Agreement, and (iii) the total amount of the Basic Rent concession during the Rent Concession Period. Said sum shall be in addition to all Rent otherwise due under this Agreement during the Term. The Tenant's giving such notice shall thereby rescind any Right to Lease Additional Space which the Tenant has theretofore timely and otherwise properly exercised regarding Additional Leased Premises whose respective commencing date has not yet occurred, if the Landlord so elects by notice to the Tenant, to the same extent as if it had been properly exercised at all and cancel any Right to Leased Additional Space not theretofore properly exercised by the Tenant. The Option to Terminate Early may not be exercised by any Person other than the original Tenant, ACADIA Pharmaceuticals Inc. In the event the Tenant assigns this Agreement or sublets, or licenses the use or occupancy of, the Leased Premises or any portions thereof in accordance with subsection 17 of this Agreement or otherwise, or attempts to do so, the Option to Terminate Early shall thereupon expire.

45 Electronic Signatures. The parties acknowledge and agree that this Agreement may be executed by electronic signature, which shall be considered as an original signature for all purposes and shall have the same force and effect as an original signature. Without limitation, "electronic signature" shall include faxed versions of an original signature or electronically scanned and transmitted versions (e.g., via pdf) of an original signature.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date(s) set forth below.

LANDLORD:

BOSTON PROPERTIES LIMITED PARTNERSHIP, a Delaware limited partnership

By: Boston Properties, Inc., its general partner

By: /s/ John K. Brandbergh
Name: John K. Brandbergh
Title: Senior Vice President
Dated: May 29, 2018

TENANT:

ACADIA PHARMACEUTICALS

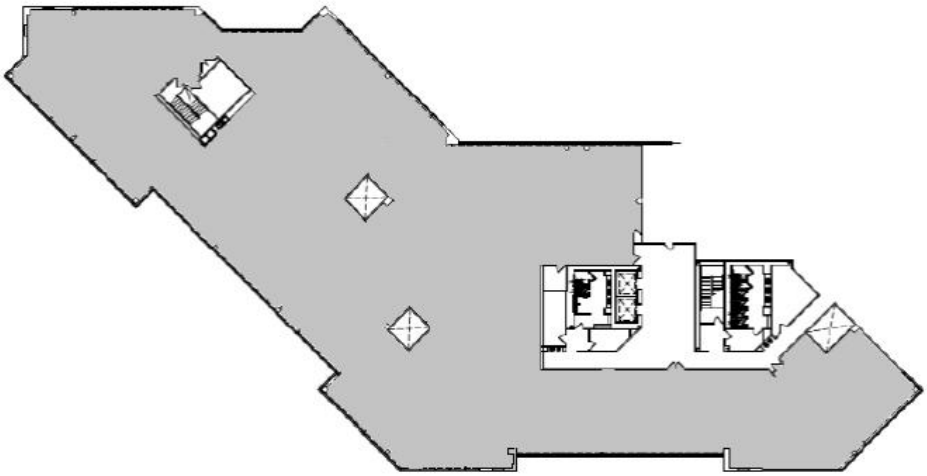
By:/s/ Todd Young

Name:Todd Young

Title:EVP and CFO

Dated: May 17, 2018

LEASED PREMISES FLOOR SPACE DIAGRAM



PROPERTY DESCRIPTION

DESCRIPTION OF 502 CARNEGIE CENTER
WEST WINDSOR TOWNSHIP
MERCER COUNTY, NEW JERSEY

[***]

BUILDING DESCRIPTION

The following is the Building Description referred to in the Agreement of which this exhibit is a part.

The Building's structure is a three-story office building of Construction Type 2C with a steel frame, a metal deck floor system, a brick masonry exterior facade and aluminum and insulated glass. The floors will sustain a live load of 80 pounds per square foot of floor space and will have a typical bay size of 30 feet by 30 feet.

Among other Common Facilities, the Building will contain one men's and one women's bathroom on each floor, two drinking fountains on each floor and two hydraulic elevators with a capacity of 3,500 pounds each and will have Parking Facilities with approximately 355 lined parking spaces.

"Building standard" shall mean the type and grade of material, equipment, device or service designated by the Landlord as standard for leased premises in the Building.

The Tenant will include the following information as part of its Tenant Plan:

1. The location and extent of floor loading, if any, in excess of the building standard specified above.

2. Special air conditioning requirements, if any, in excess of building standard.

3. Plumbing requirements, if any.

4. Estimated total electrical load, including lighting requirements, lighting switch requirements and electrical outlet requirements, if any, in excess of building standard, setting forth the amount of the load, locations and types.

BUILDING RULES AND REGULATIONS

The following are the Building Rules and Regulations adopted in accordance with subsection 7.2.3 of the Agreement of which this exhibit is a part; and the Tenant and the Tenant's employees, other agents and Guests shall comply with these Building Rules and Regulations:

1. The sidewalks, driveways, entrances, passages, courts, lobby, esplanade areas, plazas, elevators, vestibules, stairways, corridors, halls and other Common Facilities shall not be obstructed or encumbered or used for any purpose other than ingress and egress to and from the Leased Premises. The Tenant shall not permit or suffer any of its employees, other agents or Guests to congregate in any of the said areas. No door mat of any kind whatsoever shall be placed or left in any public hall or outside any entry door of the Leased Premises.

2. No awnings or other projections shall be attached to the outside walls of the Building. No curtains, drapes, blinds, shades or screens shall be attached to, hung in or used in connection with any window or door of the Leased Premises without the prior written consent of the Landlord. If such consent is given, such curtains, drapes, blinds, shades or screens shall be of a quality, type, design and color, and attached in the manner, approved by the Landlord.

3. Except as otherwise specifically provided in subsection 18.1 of the Agreement, no sign, insignia, advertisement, object, notice or other lettering shall be exhibited, inscribed, painted or affixed so as to be visible from outside the Leased Premises or the Building. In the event of the violation of the foregoing by the Tenant, the Landlord may remove same without any liability and may charge the expense incurred in such removal to the Tenant.

4. The sashes, doors, skylights, windows, and doors that reflect or admit light and air into the halls, passageways or other public places in the Building shall not be covered or obstructed and no bottles, parcels or other articles shall be placed on the window sills.

5. No showcase or other articles shall be placed in front of or affixed to any part of the Building or the Common Facilities.

6. The lavatories, water and wash closets and other plumbing fixtures shall not be used for any purposes other than those for which they were designed and constructed, and no sweepings, rubbish, rags, acids or other substances shall be thrown or deposited therein. All damages resulting from any misuse thereof shall be repaired at the expense of the Tenant that permitted or suffered the violation hereof by the Tenant, the Tenant's employees, other agents or Guests.

7. The Tenant shall not mark, paint, drill into or in any way deface any part of the Leased Premises, the Building, the Common Facilities or the Property. No boring, cutting or stringing of wires shall be permitted, except with the prior written consent of the Landlord, and as the Landlord may direct. Linoleum and other resilient floor coverings shall be laid so that the same shall not come in direct contact with the floor of the Leased Premises; and if linoleum or other resilient floor coverings are desired, an interlining of builder's deadening felt shall be first affixed to the floor by a paste or other material that is, and will remain, soluble in water. The use of cement or other adhesive material that either is not, or will not remain, soluble in water is prohibited.

8. No bicycles, vehicles, animals, reptiles, fish or birds of any kind shall be brought into or kept in or about the Leased Premises.

9. No noise including, without limiting the generality of the foregoing, music or the playing of musical instruments, recordings, radio or television which, in the reasonable judgment of the Landlord, might disturb tenants of Other Leased Premises shall be made or permitted by the Tenant. Nothing shall be done or permitted

in the Leased Premises by the Tenant which would impair or interfere with the use or enjoyment of Other Leased Premises by any tenant thereof. Nothing shall be thrown out of the doors, windows or skylights or down the passageways of the Building.

10. The Tenant shall not manufacture any commodity, or prepare or dispense any foods or beverages, tobacco, flowers or other commodities or articles without the prior written consent of the Landlord. The Tenant shall not permit the installation or use of vending machines in the Leased Premises.

11. Duplicates of keys and passes distributed to the Tenant by the Landlord shall not be made. The Tenant shall provide appropriate security for keys. Nothing shall be done to render any lock inoperable by the Building Grand Master Key. No lock shall be installed without the Landlord's prior written consent; and any lock so installed shall be operable by the Building Grand Master Key. Upon termination of the Term, all keys, passes and duplicates provided by the Landlord to the Tenant, or otherwise procured by the Tenant, shall be returned to the Landlord. Any failure to comply with the foregoing which requires changes in locks, new or additional keys, passes or duplicates or other services of a locksmith shall be paid by the Tenant.

12. All deliveries and removals, and the carrying in or out of any safes, freight, furniture, packages, boxes, crates or any other object or matter of any description shall take place during such hours, in such manner and in such elevators and passageways as the Landlord may determine from time to time. The Landlord reserves the right to inspect all objects and matter being brought into the Building or the Common Facilities and to exclude from the Building and the Common Facilities all objects and matter that violates any of these Building Rules and Regulations or that are contraband. The Landlord may (but shall not be obligated to) require any person leaving the Building or the Common Facilities with any package or object or matter from the Leased Premises to establish his authority from the Tenant to do so. The establishment and enforcement of such a requirement shall not impose any responsibility on the Landlord for the protection of the Tenant against the removal of property from the Leased Premises. The Landlord shall not be liable to the Tenant for damages or loss arising from the admission, exclusion or ejection of any person to or from the Leased Premises or the Building or the Common Facilities under this rule.

13. The Tenant shall not place any object in any portion of the Building that is in excess of the safe carrying or designed load capacity of the structure.

14. The Landlord shall have the right to prohibit any advertising or display of any identifying sign by the Tenant which in the Landlord's judgment tends to impair the reputation of the Building or its desirability; and, on notice from the Landlord, the Tenant shall refrain from or discontinue such advertising or display of such identifying sign.

15. The Landlord reserves the right to exclude from the Building and the Common Facilities during hours other than Regular Business Hours all persons who do not present a pass thereto signed by both the Landlord and the Tenant. All persons entering or leaving the Building or the Common Facilities during hours other than Regular Business may be required to sign a register. The Landlord will furnish passes to persons for whom the Tenant requests same in writing. The establishment and enforcement of such a requirement shall not impose any responsibility on the Landlord for the protection of the Tenant against unauthorized entry of persons.

16. The Tenant, before closing and leaving the Leased Premises at any time shall see that all lights and appliances generating heat (other than the heating system) are turned off. All entrance doors to the Leased Premises shall be left locked by the Tenant when the Leased Premises are not in use. At any time when the Building or the Common Facilities are locked during hours other than Regular Business Hours, the Building and the Common Facilities locks shall not be defeated by any means, such as by leaving a door ajar.

17. No person shall go upon the roof of the Building without the prior written consent of the Landlord.

18. Any requirements of the Tenant may be attended to only upon application at the office of the Building. The Landlord and its agents shall not perform any work or do any work or do anything outside of the Landlord's obligations under the Agreement except upon special instructions from the Landlord on terms acceptable to the Landlord and the Tenant.

19. Canvassing, soliciting and peddling in the Building and the Common Facilities are prohibited and the Tenant shall cooperate to prevent same.

20. There shall not be used in any space, or in the public halls or other Common Facilities of the Building, in connection with the moving or delivery or receipt of safes, freight, furniture, packages, boxes, crates, paper, office material, or any other matter or thing, any hand trucks or dollies except those equipped with rubber tires, side guards and such other safeguards as the Landlord shall require. No hand trucks shall be used in passenger elevators, and no passenger elevators shall be used for the moving, delivery or receipt of the aforementioned articles. In connection with moving in or out any furniture, furnishings, equipment, heavy articles and heavy packages, the Tenant shall take such precautions as may be necessary to prevent excessive wear and tear in the Building's Common Facilities and the Leased Premises including, without limiting the generality of the foregoing, floor and wall treatments.

21. The Tenant shall not cause or permit any odors of cooking or other processes or any unusual or objectionable odors to emanate from the Leased Premises which might constitute a Nuisance. No cooking shall be done in the Leased Premises other than as specifically permitted in the Agreement.

22. The Landlord reserves the right not to enforce any Building Rule or Regulation against any tenants of Other Leased Premises. The Landlord reserves the right to rescind, amend or waive any Building Rule and Regulation when, in the Landlord's reasonable judgment, it appears necessary or desirable for the reputation, safety, care or appearance of the Building or the preservation of good order therein or the operation of the Building or the comfort of tenants or others in the Building. No rescission, amendment or waiver of any Building Rule and Regulation in favor of one tenant shall operate as a rescission, amendment or waiver in favor of any other tenant.

DEFINITIONS AND INDEX OF DEFINITIONS

In accordance with section 1 of the Agreement of which this exhibit is a part, throughout the Agreement the following terms and phrases shall have the meanings set forth or referred to below:

1"Additional Leased Premises" means any portion of the interior of the Building (as viewed from the interior of the respective Additional Leased Premises) bounded by the interior sides of the unfinished floor and the finished ceiling on the applicable floor of the Building, the centers of all Common Walls and the exterior sides of all walls other than Common Walls that the Tenant may lease (other than the Leased Premises) in the Building pursuant to the Tenant's exercise of the Right to Lease Additional Space.

2"Additional Rent" means all amounts, other than Basic Rent and any Security Deposit, required to be paid by the Tenant to the Landlord in accordance with this Agreement.

3"Affiliate" of any person means a person controlling, controlled by, or under common control with, that person.

4"Agreement" means this Lease and Lease Agreement (including exhibits), as it may have been amended.

5"Annual Amortized Capital Expenditure" means the payment amount determined as an annuity in arrears using the cost incurred by the Landlord for any Capital Expenditure as the present value, the number of years of its useful life (not exceeding ten (10) years) selected by the Landlord in accordance with generally applied real estate accounting practice as the number of periods and the Base Rate in effect when the respective improvement is first placed into service plus [***] additional percentage points as the annual rate of interest; provided, however, if the Landlord reasonably concludes that a particular Capital Expenditure will effect savings in Operational Expenses, including, without limitation, energy, labor or other cost savings ("Projected Savings"), and if the "Projected Payback Period", as hereinafter defined, will be less than the useful life of the Capital Expenditure as determined above, then the Landlord shall amortize the Capital Expenditure based upon the Projected Payback Period, together with interest thereon at the interest rate as stated above in equal monthly payments. For the purpose herein, the "Projected Payback Period" shall be defined as the number of months or portion thereof required for the Projected Savings in Operational Expenses to equal the cost incurred by the Landlord for such Capital Expenditure.

6"Available Space" means, when used in the context of the Right to Lease Additional Space, Other Leased Premises located [***] that will become available for lease to others, generally and without limitation or restriction, due to the termination of the term of the lease with its then present tenant and the tenant's unwillingness to renew or otherwise extend the term, regardless of whether any such renewal or other extension is pursuant to a renewal or extension right or option set forth in the then present tenant's lease, or not.

7"Base Rate" means the prime commercial lending rate per year as announced from time to time by JP Morgan Chase Bank (National Association) at its principal office in New York City.

8"Base Year" means the full calendar year 2019 with respect to Operational Expenses and Taxes.

9"Base Year Operational Expenses" means actual Operational Expenses incurred by the Landlord with respect to the Base Year adjusted as follows: projected and extrapolated to assume [***]% occupancy of the Building at any time when the Building is less than [***]% occupied. Base Year Operational Expenses shall not include increases due to extraordinary circumstances, including but not limited to, Force Majeure, boycotts, conservation surcharges, security concerns, embargoes or shortages.

10"Base Year Taxes" means actual Taxes incurred by the Landlord with respect to the Property and the Building with respect to the Base Year.

11"Basic Rent" is defined in subsection 3.2 of this Agreement.

12"Building" means the office building erected on the Property which is commonly known as 502 Carnegie Center, Princeton, New Jersey 08540, as it may, in the Landlord's sole discretion, be increased, decreased, modified, altered

or otherwise changed from time to time before, during or after the Term. As the Building is presently constructed it consists of 116,855 gross rentable square feet of floor space.

13 “Building Description” means Exhibit C attached hereto which generally describes the type of construction of the Building.

14 “Building Standard” is defined in Exhibit C of this Agreement.

15 “Capital Expenditure” is defined in subsection 10.3 of this Agreement.

16 “Carnegie Center Complex” means the office development commonly known as Carnegie Center, Princeton (West Windsor Township), New Jersey, bounded on the north by Alexander Road and on the west by U.S. Route 1.

17 “Commencement Date” is defined in section 4 of this Agreement.

18 “Common Facilities” means the areas, facilities and improvements provided by the Landlord in the Building (except the Leased Premises and the Other Leased Premises) and on the Property, including, without limiting the generality of the foregoing, the Parking Facilities and driveways on the Property, for non-exclusive use by the Tenant in accordance with subsection 2.2 of this Agreement, as they may, in the Landlord’s sole discretion, be increased, decreased, modified, altered or otherwise changed from time to time before, during or after the Term.

19 “Common Walls” means those walls which separate the Leased Premises from Other Leased Premises.

20 “Electric Charges” means all the supplying utility’s charges for, or in connection with, furnishing electricity including charges determined by actual usage, any seasonal adjustments, demand charges, energy charges, energy adjustment charges and any other charges, howsoever denominated, of the supplying utility, including sales and excise taxes and the like.

21 “Event of Default” is defined in section 22 of this Agreement.

22 “Expiring Term” means, at the time of reference, the Term as it is then scheduled to expire.

23 “Force Majeure” means (i) strikes or other labor troubles, (ii) governmental preemption in connection with a national emergency, (iii) any rule, order or regulation of any government agency or any department or subdivision thereof, whether in connection with a drought, energy shortage or other like event or otherwise, (iv) any fact, condition or circumstance related to war, terrorism or other emergency, (v) fire, casualty or other acts of God (including the time necessary to repair any damage caused thereby), (vi) the inability to obtain labor or material due to shortage, governmental regulation or prohibition, or (vii) any other cause whatsoever beyond Landlord’s or Tenant’s reasonable control, as the case may be.

24 The Tenant’s “Guests” shall mean the Tenant’s licensees, invitees and all others in, on or about the Leased Premises, the Building, the Common Facilities or the Property, either at the Tenant’s express or implied request or invitation or for the purpose of soliciting or visiting the Tenant.

25 A “History of Recurring Events of Default” means the occurrence of three or more Events of Default (whether or not cured by the Tenant) in any period of twelve (12) months.

26 “Holdover Damages” is defined in subsection 23.4 of this Agreement.

27 The “Index” means the “all items” index figure for the New York Northeastern New Jersey average of the Consumer Price Index for all urban wage earners and clerical workers which uses a base period of 1982-84=100, published by the United States Department of Labor, so long as it continues to be published. If the Index is not published for a period of three consecutive months, or if its base period is changed, the term “Index” shall mean that index, as nearly equivalent in purpose, function and coverage as practicable to the original Index, which the Landlord shall have designated by notice to the Tenant.

28 “Initial Term” means the period so designated in subsection 4.1 of this Agreement.

29 “Initial Year” means the first twelve (12) full calendar months immediately following the Rent Commencement Date (if the Rent Commencement Date occurs on other than the first day of a calendar month) or the first 12 full calendar months commencing on the Rent Commencement Date (if the Rent Commencement Date occurs on the first day of a calendar month).

30 “Landlord” means the person so designated at the beginning of this Agreement and those successors to the Landlord’s interest in the Property and/or the Landlord’s rights and obligations under this Agreement contemplated by section 26 of this Agreement.

31 “Landlord Party” or “Landlord Parties” shall mean the Landlord, any Affiliate of the Landlord, the Landlord’s managing agents for the Building, each mortgagee, if any, each ground lessor, if any**,** and each of their respective direct or indirect partners, officers, shareholders, directors, members, trustees, beneficiaries, servants, employees, principals, contractors, licensees, agents or representatives.

32“Landlord’s Contribution” is defined in section 5 of this Agreement.

33 “Lease Year” means the Initial Year and each succeeding period of twelve (12) consecutive calendar months that commences immediately after the end of the immediately preceding Lease Year.

34 “Leased Premises” means that portion of the interior of the Building (as viewed from the interior of the Leased Premises) bounded by the interior sides of the unfinished floor and the finished ceiling on the Third floor (as the floors have been designated by the Landlord) of the Building, the centers of all Common Walls and the exterior sides of all walls other than Common Walls, the outline of which floor space is designated on the diagram set forth in Exhibit A attached hereto, which portion contains 25,429 square feet of gross rentable floor space; and references within this Agreement to the gross rentable floor space of the Leased Premises shall mean the quantity herein specified.

35 “Legal Holidays” means New Year’s Day, Presidents’ Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

36 “Market Rental Rate” means, at the time of reference, the gross rentable floor space of the Leased Premises multiplied by the greater of: (a) that annual rate of Basic Rent per square foot of gross rentable floor space which is then being quoted by the Landlord for comparable Other Leased Premises at which the Landlord, or other landlords, as the case may be, are then executing leases for new or renewing tenants for comparable leased space located in buildings in the Carnegie Center Complex and the buildings located at 7-9 Roszel Road, Princeton Overlook and University Square, all in West Windsor Township, New Jersey (or would then be quoted if comparable Other Leased Premises were then available), taking into consideration the following factors, if applicable: (i) the term of such lease, (ii) the terms of any workletter associated therewith, (iii) tenant improvement allowances, (iv) free rent or other concessions, and (v) the subject amount of square feet of gross rentable floor space, or (b) that annual rate of Basic Rent per square foot of gross rentable floor space in effect during the last twelve (12) months of the Expiring Term.

37 “Municipality” means the Township of West Windsor in Mercer County, New Jersey, or any successor municipality with jurisdiction over the Property.

38 “No Pass Through Period” means, in the context of Operational Expenses and Taxes, the period beginning on the Commencement Date and ending on December 31, 2019.

39 “Nuisance” means any condition or occurrence which unreasonably or materially interferes with the authorized use and enjoyment of the Other Leased Premises and the Common Facilities by any tenant of Other Leased Premises or by any person authorized to use any Other Leased Premises or Common Facilities or with the authorized use of any other areas, buildings or other improvements in the Carnegie Center Complex.

40 “Operational Expenses” is defined in subsection 10.2 of this Agreement.

41 “Option to Renew” is defined in subsection 6.1 of this Agreement.

42 “Option to Terminate Early” is defined in section 44 of this Agreement.

43 “Other Leased Premises” means all premises within the Building, with the exception of the Leased Premises, that are, or are available to be, leased to tenants or prospective tenants, respectively.

44 “Parking Facilities” means the parking area located on the Property, containing the approximate number of lined parking spaces set forth in the Building Description, which parking area is provided as Common Facilities.

45 “Person” includes an individual, a corporation, a partnership, a limited liability company, a limited liability partnership, a trust, an estate, an unincorporated group of persons and any group of persons.

46 “Property” means the parcel of land, as it may, in the Landlord’s sole discretion, be increased, decreased, modified, altered or otherwise changed from time to time before, during or after the Term, on which the Building is (or is about to be) erected. As the Property is presently constituted, it is more particularly described in Exhibit B attached hereto.

47“Punchlist” shall mean a single written list prepared by the Landlord at or about the date of achievement of Substantial Completion of the Tenant’s Buildout, setting forth those faults, defects and omissions in the Tenant’s Buildout, which are in the nature of minor or cosmetic faults, defects and omissions.

48 “Regular Business Hours” means 8:00 A.M. to 6:00 P.M., Monday through Friday, except on Legal Holidays.

49 “Re-Leasing Damages” is defined in subsection 23.3 of this Agreement.

50 “Renewal Term” means, at the time of reference, any portion of the Term, other than the Initial Term, as to which the Tenant has properly exercised an Option to Renew.

51 “Rent” means Basic Rent and Additional Rent.

52 “Rent Commencement Date” is defined in section 4 of this Agreement.

53 “Rent Concession Period” is defined in section 4 of this Agreement.

54 “Right to Lease Additional Space” is defined in section 44 of this Agreement.

55 “Security Deposit” is designated in section 29 of this Agreement.

56 “Substantial Completion” means that (i) the Tenant’s Buildout shall have been substantially completed, subject only to the completion or correction of Punchlist items, and (ii) a certificate of occupancy for the Tenant’s Buildout shall have been issued by the Municipality.

57 “Substantial Completion Date” means the date that Substantial Completion of the Tenant’s Buildout shall have been achieved, adjusted to an earlier date to compensate the Landlord for the cumulative number of days of delay attributable to Tenant Delay.

58 “Systems” means the building standard elevator, heating, ventilation and air conditioning, electrical, plumbing and fire alarm and suppression systems installed in the Building.

59 “Taxes” means, in any calendar year, the aggregate amount of real property taxes, assessments and sewer rents, rates and charges, state and local taxes, transit taxes and every other governmental charge, whether general or special, ordinary or extraordinary (except corporate franchise taxes and taxes imposed on, or computed as a function of, net income or net profits from all sources and except taxes charged, assessed or levied exclusively on the Leased Premises

or arising exclusively from the Tenant's occupancy of the Leased Premises) charged, assessed or levied by any taxing authority with respect to the Property, the Building, the Common Facilities and any other improvements on the Property and an allocable portion of Taxes with respect to other portions of the Carnegie Center Complex, less any refunds or rebates (net of expenses incurred in obtaining any such refunds or rebates) of Taxes actually received by the Landlord during such calendar year with respect to any period during the Term for the benefit of the Tenant, tenants of Other Leased Premises and the Landlord. If during the Term there shall be a change in the means or methods of taxing real property generally in effect at the beginning of the Term and another type of tax or method of taxation should be substituted in whole or in part for, or in lieu of, Taxes, the amounts calculated under such other types of tax or by such other methods of taxation shall also be deemed to be Taxes. Until such time as the actual amount of Taxes for any calendar year becomes known, the amount thereof shall be the Landlord's estimate of Taxes for that calendar year.

60 "Tenant" means the person so designated at the beginning of this Agreement.

61 "Tenant Delay" means any period of delay encountered by the Landlord or its general contractor selected to perform the Tenant's Buildout in achieving Substantial Completion of the Tenant's Buildout or the issuance of the Municipality's building permits, that is attributable to the following: (i) if the Tenant elects to have the Landlord's architect prepare the Tenant Plan for the Tenant's Buildout, (a) the failure of the Tenant to deliver the Final and Complete Space Plan by the Space Plan Due Date, or (b) any changes made by or at the request of the Tenant to the Final and Complete Space Plan or the Tenant Plan after the Space Plan Due Date; (ii) if the Tenant elects to have its own architect prepare the Tenant Plan for the Tenant's Buildout, (a) the failure of the Tenant to deliver the final Tenant Plan to the Landlord by the Tenant Plan Due Date; (b) any changes made by or at the request of the Tenant to the Tenant Plan after the Tenant Plan Due Date, (c) the failure of the Tenant to revise and deliver a revised complete Tenant Plan to the Landlord within ten (10) days of the Landlord's giving notice of its objection to the Tenant pursuant to subsection 5.2 of this Agreement, (d) the failure of the Tenant to revise and deliver a revised complete Tenant Plan to the Landlord within ten (10) days of the Landlord's giving notice to the Tenant of the Municipality's objections to the Tenant Plan pursuant to subsection 5.2 of this Agreement; and (e) any design error or omission in the Tenant Plan; (iii) the failure of the Tenant to give notice to the Landlord of the Tenant's election to have either the Landlord's architect or the Tenant's architect prepare the Tenant Plan for the Tenant's Buildout by the Space Plan Due Date; (iv) the failure of the Tenant to select the colors of the paint to be applied and the flooring to be installed as part of the Tenant's Buildout from the Landlord's samples by the Tenant Plan Due Date, (v) any labor dispute or disharmonious labor relations with the Landlord's general contractor, any of its subcontractors or any of their sub-subcontractors (of any tier) involving any direct contractor or other agent of the Tenant or any of its subcontractors or any of their sub-subcontractors (of any tier) when performing any preparation of the Initial Leased Premises; (vi) any work performed by or for the Tenant (other than the Tenant's Buildout), or any delay in the commencement or performance or completion of any such work, which impedes the orderly coordination, sequence and progress of the Tenant's Buildout; (vii) any flaw or other deficiency in any work performed by any direct contractor of the Tenant or any of its subcontractors or their sub-subcontractors (of any tier); (viii) any failure of any direct contractor of the Tenant or any of its subcontractors or their sub-subcontractors (of any tier) to properly connect and interface with the Tenant's Buildout including, without limiting the generality of, the foregoing, the installation of the Tenant's telecommunications and computer cabling and equipment, partitions, furniture and fixtures and other installations not included in the Tenant's Buildout; (ix) any delay in the Tenant's Buildout encountered as a result of attempting to integrate work of the Tenant's direct contractors with the Tenant's Buildout; (x) any suspension or stoppage of the Tenant's Buildout at the request or instance of the Tenant or any of its agents; (xi) the lack of completion or the lack of satisfactory completion of any work performed by any direct contractor of the Tenant or any of its subcontractors or their sub-subcontractors (of any tier) at any time when the Tenant's Buildout (or any portion thereof) is ready for any inspection or test required by the Municipality regarding the Tenant's Buildout; (xii) the existence of any long lead time items in the Tenant's Buildout of which the Landlord or the Landlord's architect shall have advised the Tenant or its construction manager in writing prior to the commencement of the construction of the Tenant's Buildout and which the Tenant elects to retain in the Tenant's Buildout; (xiii) any delay in the issuance of the Municipality's Certificate of Occupancy as a result of any alterations, improvements or other modifications made by or on behalf of the Tenant in the Leased Premises (which shall be limited to the installation of voice and data cabling and wiring) other than the Tenant's Buildout; (xiv) the request by the Tenant for materials, finishes or installations other than Building Standard; and (xv) any other delay caused by the Tenant or its design professionals, engineers, direct contractors, employees or other agents of which the Landlord shall have advised the Tenant or its construction manager which is not cured at once.

62 “Tenant Electric Charges” means Electric Charges attributable to the Tenant’s use of electricity in the Leased Premises for purposes other than heating, ventilation and air conditioning provided to the Leased Premises by the Landlord in accordance with subsection 8.2.3 of this Agreement.

63 “Tenant Party” or “Tenant Parties” means the Tenant, any Affiliate of the Tenant, any permitted subtenant or any other permitted occupant of the Leased Premises, and each of their respective direct or indirect partners, officers, shareholders, directors, members, trustees, beneficiaries, servants, employees, principals, contractors, licensees, agents, invitees or representatives.

64 “Tenant Plan” means construction drawings and related construction specifications regarding the build-out of the Leased Premises (with any construction drawings in a reproducible diazo sepia mylar form) including, without limiting the generality of the foregoing, the information called for by the Building Description attached hereto as Exhibit C, signed and sealed by a New Jersey-licensed architect, and also furnished on AutoCad, complying in all respects with all applicable building and fire codes and regulations and insurance underwriting standards in effect and, to the extent they are not inconsistent with this Agreement, with the Landlord’s tenant construction specifications in effect and in sufficient detail to permit the Municipality to issue any required building permits and to permit skilled contractors to supply and perform the work called for therein.

65 “Tenant Plan Due Date” means June 1, 2018.

66 “Tenant’s Property” is defined in subsection 14.2 of this Agreement.

67 “Tenant’s Share” of any amount means [***] percent.

68 “Term” means the Initial Term plus, at the time of reference, any Renewal Terms.

69 “Termination Damages” is defined in subsection 23.2 of this Agreement.

70 “Utilities Expenses” means Electric Charges (other than Tenant Electric Charges) and all charges for any other fuel that may be used in providing electricity and services powered by electricity that the Landlord provides in accordance with section 8 of this Agreement to the Building, the Leased Premises, Other Leased Premises, the Common Facilities and the Property, including sales and excise taxes and the like.

EXHIBIT F

JANITORIAL SERVICES DESCRIPTION

[***]

ADDITIONAL INSUREDS

[***]

[***]

[***]

EXHIBIT I

Capital Expenditure – Useful Life Schedule

[***]

Exhibit 21.1

List of Subsidiaries

NAME OF SUBSIDIARY	JURISDICTION OF INCORPORATION
ACADIA Pharmaceuticals A/S	Denmark
ACADIA Pharmaceuticals GmbH	Switzerland
ACADIA Pharma Limited	United Kingdom
CerSci Therapeutics Incorporated	Delaware
Amorsa Therapeutics Inc.	Delaware
Acadia Pharmaceuticals Holdings Inc.	Delaware
Levo Therapeutics, Inc.	Delaware
Pandeia Therapeutics	United Kingdom

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statements (Form S-3 Nos. 333-171722, 333-185639, 333-248401, and 333-265205) of Acadia Pharmaceuticals Inc.,

(2) Registration Statement (Form S-8 No. 333-115956) pertaining to the 1997 Stock Option Plan, 2004 Equity Incentive Plan, and 2004 Employee Stock Purchase Plan of Acadia Pharmaceuticals Inc.,

(3) Registration Statements (Form S-8 Nos. 333-128290, 333-137557, 333-146398, 333-153346, and 333-161057) pertaining to the 2004 Equity Incentive Plan and 2004 Employee Stock Purchase Plan of Acadia Pharmaceuticals Inc.,

(4) Registration Statements (Form S-8 Nos. 333-266680, 333-168667, 333-190400, 333-213109, and 333-232981) pertaining to the 2010 Equity Incentive Plan and the 2004 Employee Stock Purchase Plan of Acadia Pharmaceuticals Inc.,

(5) Registration Statements (Form S-8 Nos. 333-176212, 333-183151, 333-197872, 333-241711) pertaining to the 2004 Employee Stock Purchase Plan of Acadia Pharmaceuticals Inc.;

(6) Registration Statements (Form S-8 Nos. 333-207971, 333-219785, 333-226834, amd 333-266680) pertaining to the 2010 Equity Incentive Plan of Acadia Pharmaceuticals Inc.; and

(7) Registration Statement (Form S-8 No. 333-269611) pertaining to the 2023 Inducement Plan of Acadia Pharmaceuticals Inc.

of our reports dated February 27, 2023, with respect to the consolidated financial statements and schedule of Acadia Pharmaceuticals Inc. and the effectiveness of internal control over financial reporting of Acadia Pharmaceuticals Inc. included in this Annual Report (Form 10-K) of Acadia Pharmaceuticals Inc. for the year ended December 31, 2022.

/s/ Ernst & Young LLP

San Diego, California
February 27, 2023

EXHIBIT 31.1

CERTIFICATION
Pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934,
as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Stephen R. Davis, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2022 of Acadia Pharmaceuticals Inc.

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer 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: February 27, 2023

/s/ STEPHEN R. DAVIS

Stephen R. Davis
Chief Executive Officer
(Registrant's Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION
Pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934,
as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Mark C. Schneyer, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2022 of Acadia Pharmaceuticals Inc.

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer 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: February 27, 2023

/s/ MARK C. SCHNEYER
Mark C. Schneyer
Executive Vice President, Chief Financial Officer
(Registrant's Principal Financial Officer)

EXHIBIT 32.1

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

In connection with the Annual Report of Acadia Pharmaceuticals Inc. (the "Company") on Form 10-K for the period ended December 31, 2022, as filed with the Securities and Exchange Commission on or about the date hereof (the "Report"), I, Stephen R. Davis, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

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

(2) the information contained in the Report fairly presents, in all material respects, the financial condition of the Company at the end of the period covered by the Report and results of operations of the Company for the period covered by the Report.

Date: February 27, 2023

/s/ STEPHEN R. DAVIS

Stephen R. Davis
Chief Executive Officer
(Registrant's Principal Executive Officer)

This certification shall not be deemed "filed" for purposes of Section 18 of the Exchange Act or otherwise subject to the liability of Section 18 of the Exchange Act. Such certification shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that the Company specifically incorporates it by reference.

EXHIBIT 32.2

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

In connection with the Annual Report of Acadia Pharmaceuticals Inc. (the "Company") on Form 10-K for the period ended December 31, 2022, as filed with the Securities and Exchange Commission on or about the date hereof (the "Report"), I, Mark C. Schneyer, Executive Vice President and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

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

(2) the information contained in the Report fairly presents, in all material respects, the financial condition of the Company at the end of the period covered by the Report and results of operations of the Company for the period covered by the Report.

Date: February 27, 2023

/s/ MARK C. SCHNEYER

Mark C. Schneyer
Executive Vice President, Chief Financial Officer
(Registrant's Principal Financial Officer)

This certification shall not be deemed "filed" for purposes of Section 18 of the Exchange Act or otherwise subject to the liability of Section 18 of the Exchange Act. Such certification shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that the Company specifically incorporates it by reference.