CORTEX PHARMACEUTICALS INC/DE/
Form 10-K
March 30, 2015

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

[X] **Annual Report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the fiscal year ended December 31, 2014

OR

[ ] **Transition Report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

Commission file number 1-16467

Cortex Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**33-0303583**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**

126 Valley Road, Suite C

Glen Rock, New Jersey 07452

(Address of principal executive offices, including zip code)

(201) 444-4947

(Registrant's telephone number, including area code)

Securities registered under Section 12(b) of the Act: None

Securities registered under Section 12(g) of the Act:

Common Stock, $0.001 par value

(Title of Class)

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES [ ] NO [X]

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. YES [ ] NO [X]

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 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 [X] NO [ ]

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). YES [X] NO [ ]

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [ ]

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

Large accelerated filer [ ]	Accelerated filer [ ]	Non-accelerated filer [ ] (Do not check if a smaller reporting company)	Smaller reporting company [X]

Indicate by check mark whether the registrant is a shell company (as defined in Exchange Act Rule 12b-2). YES [ ] NO [X]

The aggregate market value of the voting stock held by non-affiliates as of June 30, 2014 was approximately $4,232,000 (based on the closing sale price of the common stock as reported by the Over the Counter Bulletin Board). As of March 24, 2015, there were 240,318,062 shares of the registrant’s common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE: NONE

TABLE OF CONTENTS

In this Annual Report on Form 10-K, the terms “Cortex,” the “Company,” “we,” “us” and “our” refer to Cortex Pharmaceutica Inc., a Delaware corporation, and, unless the context indicates otherwise, its consolidated subsidiaries.

INTRODUCTORY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 (the “Exchange Act”) and we intend that such forward-looking statements be subject to the safe harbors created thereby. These forward-looking statements, which may be identified by words including “anticipates,” “believes,” “intends,” “estimates,” “expects,” “plans,” and similar expressions include, but are not limited to, statements regarding (i) future research plans, expenditures and results, (ii) potential collaborative arrangements, (iii) the potential utility of our proposed products and (iv) the need for, and availability of, additional financing.

The forward-looking statements included herein are based on current expectations that involve a number of risks and uncertainties. These forward-looking statements are based on assumptions regarding our business and technology, which involve judgments with respect to, among other things, future scientific, economic and competitive conditions, and future business decisions, all of which are difficult or impossible to predict accurately and many of which are beyond our control. Although we believe that the assumptions underlying the forward-looking statements are reasonable, actual results may differ materially from those set forth in the forward-looking statements. In light of the significant uncertainties inherent in the forward-looking information included herein, the inclusion of such information should not be regarded as a representation by us or any other person that our objectives or plans will be achieved.

Forward-looking statements speak only as of the date they are made. We do not undertake and specifically decline any obligation to update any forward-looking statements or to publicly announce the results of any revisions to any statements to reflect new information or future events or developments.

PART I

Item 1. Business

Since its formation in 1987, the Company has engaged in the discovery, development and commercialization of innovative pharmaceuticals for the treatment of neurological and psychiatric disorders. In 2011, however, we conducted a re-evaluation of our strategic focus and determined that clinical development in the area of respiratory disorders, particularly respiratory depression and sleep apnea, provided the most cost-effective opportunities for potential rapid development and commercialization of our compounds. As a result of our scientific discoveries and the acquisition of strategic, exclusive license agreements, we believe we are now a leader in the discovery and development of innovative pharmaceuticals for the treatment of respiratory disorders.

Saying that there exists an unmet need for new drug treatments for breathing disorders is an understatement. According to the Centers for Disease Control and Prevention, the rate of respiratory disorders is reaching epidemic proportions, with estimates that 1 in 4 men and 1 in 10 women in this country have sleep apnea. Sleep apnea places a considerable burden on society and the health care system because of its association with adverse events ranging from loss of productivity to increased risk of cardiopulmonary illness and related death. No drugs currently are approved for the treatment of sleep apnea.

Even in patients without sleep apneas, the use of drugs such as propofol, used as an anesthetic during surgery, and opioid analgesics such as morphine, used for the treatment of post-surgical and chronic pain, are well known for producing respiratory depression. In fact, while respiratory depression is the leading cause of death from the overdose of most classes of abused drugs, it also arises during normal, physician-supervised procedures such as surgical anesthesia, post-operative analgesia and as a result of normal outpatient management of pain.

Although naloxone (Narcan) and nalmefene (Revex) can reverse respiratory depression associated with opioids, they have several major shortcomings. First and foremost, these opioid antagonists do not reverse the respiratory depression produced by other classes of drugs often given/taken either alone or in combination with narcotics. Second, while these drugs reverse the serious side effects of the opioids, they also dramatically reduce their analgesic effectiveness. Third, the side effects of opioid antagonists are themselves serious and include seizures, agitation, convulsions, tachycardia, hypotension, nausea, and vomiting.

Clearly, considerable need exists for pharmaco-therapeutic agents to 1.) treat sleep apnea, and 2.) prevent and reverse the respiratory depression produced by different classes of drugs. The Company currently has two drug platforms, each with a clinical stage compound directed at these needs.

Sleep Apnea

Sleep apnea is a serious disorder in which breathing repeatedly stops long enough to disrupt sleep, and temporarily decreases the amount of oxygen and increases the amount of carbon dioxide in the blood. Apnea is defined by more than five periods per hour of ten seconds or longer without breathing. The repetitive cessation of breathing during sleep has substantial impact on the affected individuals. The disorder is associated with major co-morbidities including excessive daytime sleepiness and increased risk of cardiovascular disease (such as hypertension, stroke and heart failure), diabetes and weight gain. Sleep apnea is often made worse by central nervous system depressants such as opioids, benzodiazepines, barbiturates and alcohol. It is therefore important for these patients to seek therapy.

The most common type of sleep apnea is obstructive sleep apnea (“OSA”), which occurs by repetitive narrowing or collapse of the pharyngeal airway during sleep. There is currently no approved pharmacotherapy, and the most common treatment is to use continuous positive airway pressure (“CPAP”) delivered via a nasal or full-face mask, as long as patients are able to tolerate the treatment. It is estimated that in more than 50% of cases patients stop using the CPAP device on a regular basis. Given the large patient population and a lack of suitable treatment options, there is a very large opportunity for pharmacotherapy to treat this disorder.

Central sleep apnea (“CSA”), a less frequently diagnosed type of sleep apnea, is caused by alterations in the brain mechanisms responsible for maintaining normal respiratory drive. CSA is most frequently observed in heart failure patients and in patients taking chronic opioids. In fact, CSA is a predictor of mortality in heart failure patients. CPAP has not demonstrated efficacy in treating CSA and no drugs presently are approved for this indication.

Mixed sleep apnea, a third type of sleep apnea, is a combination of central and obstructive factors occurring in the same episode of sleep apnea.

Drug-induced Respiratory Depression

Drug-induced respiratory depression ("RD") is a life-threatening condition caused by a variety of depressant drugs, including analgesic, hypnotic, and anesthesia medications. RD is a leading cause of death from the overdose of some classes of abused drugs, yet it also arises during normal, physician-supervised procedures such as surgical anesthesia and post-operative pain management. For example, in the hospital setting, anesthetics, such as propofol, are well known for their propensity to produce RD. With more than 40 million surgical procedures performed annually, it is notable that post-operative respiratory failure produces the highest mortality rate, the second highest attributable number of deaths and the second largest overall excess cost to the Medicare system, when compared to other patient safety indicators.

In the hospital setting, the most serious complication of patient-controlled analgesia is RD and, despite nurses' vigilance, adverse events associated with opioids continue to increase. Drug-induced RD is associated with a high mortality rate relative to other adverse drug events. If high-risk patients are receiving combination therapies, they are at even higher risk.

Outside the hospital, the primary risk factor for RD is the use of a single opioid in large doses or concomitant use of opioids and sedative agents. Whether as a result of normal outpatient management of pain or as a result of substance abuse, RD has been reported to be the leading cause of death from drug overdose, with the drug overdose death rate tripling since 1991. It has been estimated that nearly 15,000 people die every year as a result of overdoses involving prescription painkillers. Oxycodone and fentanyl have been reported to be the two most frequently reported drugs associated with death and serious nonfatal outcomes from 1998 to 2005, exceeding the number of deaths from heroin and cocaine combined. Opioid use has increased significantly along with a dramatic increase in unintentional poisoning deaths from opioids. Unintentional deaths from opioids are not only related to diversion for nonmedical use and misuse by patients, but by prescriber's error as well.

Cannabinoids

In order to expand the Company's respiratory disorders program, on August 10, 2012, pursuant to an Agreement and Plan of Merger by and among Pier Pharmaceuticals Inc., a privately-held corporation, ("Pier") Pier Acquisition Corp., a Delaware corporation ("Merger Sub") and a wholly-owned subsidiary of Cortex, and Cortex, Merger Sub merged with and into Pier (the "Merger") and Pier became a wholly-owned subsidiary of Cortex. Pier had been formed in June 2007 (under the name SteadySleep Rx Co.) as a clinical stage pharmaceutical company to develop a pharmacologic

treatment for the respiratory disorder known as obstructive sleep apnea and had been engaged in research and clinical development activities since formation.

Through the Merger, the Company gained access to an Exclusive License Agreement, as amended (the "License Agreement"), that Pier had entered into with the University of Illinois on October 10, 2007. The License Agreement covered certain patents and patent applications in the United States and other countries claiming the use of certain compounds referred to as cannabinoids for the treatment of sleep related breathing disorders (including sleep apnea), of which dronabinol is a specific example of one type of cannabinoid. Dronabinol is a synthetic derivative of the naturally occurring substance in the cannabis plant, otherwise known as Δ9-THC (Δ9-tetrahydrocannabinol). Dronabinol is currently approved by the U. S. Food and Drug Administration ("FDA") and is sold generically for use in refractory chemotherapy-induced nausea and vomiting, as well as for anorexia in patients with AIDS. The License Agreement was terminated effective March 21, 2013 due to the Company's failure to make a required payment.

However, on June 27, 2014, the Company entered into a new license agreement with the Board of Trustees of the University of Illinois. In exchange for certain milestone and royalty payments, the License Agreement grants the Company (i) exclusive rights to several issued and pending patents in numerous jurisdictions and (ii) the non-exclusive right to certain technical information that is generated by the University of Illinois in connection with certain clinical trials as specified in the License Agreement, all of which relate to the use of cannabinoids for the treatment of sleep related breathing disorders. The Company is developing dronabinol for the treatment of OSA, the most common form of sleep apnea.

The Company previously conducted a 21 day, randomized, double-blind, placebo-controlled, dose escalation Phase 2 clinical study in 22 patients with OSA, in which dronabinol produced a statistically significant reduction in the Apnea-Hypopnea Index (AHI), the primary therapeutic end-point, and was observed to be safe and well tolerated. Dronabinol is currently under investigation, at the University of Illinois and other centers, in a potentially pivotal Phase 2 OSA clinical trial, fully funded by the National Institutes of Health.

Dronabinol is a Schedule III, controlled generic drug with a relatively low abuse potential that is approved by the FDA for the treatment of AIDS related anorexia and chemotherapy induced emesis. The use of dronabinol for the treatment of OSA is a novel indication for an already approved drug and, as such, the Company believes that it should only require approval by the FDA of a supplemental new drug application.

Ampakines

Since its founding, the Company has been engaged in the research and clinical development of a class of compounds referred to as ampakines. By acting as positive allosteric modulators of AMPA glutamate receptors, ampakines increase the excitatory effects of the neurotransmitter glutamate. Early preclinical and clinical research suggested that these ampakines might have therapeutic potential for the treatment of memory and cognitive disorders, depression, attention deficit disorder and schizophrenia. Given our current focus on respiratory disorders, we may seek to partner, out-license or sell our rights to the use of ampakine compounds for the treatment of neurological and psychiatric indications, as we focus on the development of our compounds for the treatment of brain-related breathing disorders.

The early ampakines discovered by Cortex, Eli Lilly and Company, and others were ultimately abandoned due to the presence of undesirable side effects, particularly convulsive activity. Subsequently, Cortex scientists discovered a new, chemically distinct series of molecules termed “low impact” as opposed to the “high impact” designation given to the earlier compounds. While these low impact compounds shared many pharmacological properties with the high impact compounds, they did not produce convulsive effects in animals. These low impact compounds do not bind to the same molecular site as the high impact compounds and, as a result, do not produce the undesirable electrophysiological and biochemical effects that lead to convulsive activity.

The Company owns patents and patent applications for certain families of chemical compounds that claim the chemical structures and their use in the treatment of various disorders. These patents cover, among other compounds, the Company’s lead ampakines CX1739 and CX1942 and extend through at least 2028.

In order to broaden the use of the Company’s ampakine technology into the area of respiratory disorders, on May 8, 2007, the Company entered into a license agreement, as subsequently amended, with the University of Alberta granting the Company exclusive rights to practice patents held by the University of Alberta claiming the use of

ampakines for the treatment of various respiratory disorders. These patents, along with the Company's own patents claiming chemical structures, comprise the Company's principal intellectual property supporting the Company's research and clinical development program in the use of ampakines for the treatment of respiratory disorders.

The Company has obtained pre-clinical results indicating that several of its low impact ampakines, including CX717, CX1739 and CX1942, were able to antagonize the respiratory depression caused by opioids, barbiturates and anesthetics without offsetting the analgesic effects of the opiates or the sedative effects of the anesthetics. Dr. John Greer, Director of the Neuroscience and Mental Health Institute at the University of Alberta, has shown that these ampakine effects are due to a direct action on neurons in pre-Botzinger's complex, a brain stem region responsible for regulating respiratory drive.

After several Phase 1 and 2 studies to demonstrate safety and tolerability, the first of these low impact compounds, CX717, was tested in two Phase 2A clinical studies to determine its ability to antagonize the respiratory depressant effects of fentanyl, a potent opioid analgesic. In both of these studies, one of which was published in a peer-reviewed journal, CX717 antagonized the respiratory depression produced by fentanyl without altering the analgesia produced by this drug.

After considerable delay in the development of CX717, due to regulatory issues with the FDA, the Company finally has decided to terminate development of this compound because of the impending loss of its U.S. patents in 2017 and international patents in 2018. Nevertheless, the Company believes that CX717 has demonstrated clinical proof of principle for the use of low impact ampakines in the treatment of opioid-induced respiratory depression.

The Company's present lead ampakine, CX1739, has demonstrated safety and tolerability in several Phase 1 clinical studies, with maximum well-tolerated single dose identified as 900mg and 450 mg twice-a-day (for a 900mg total daily dose) for 7 days. Pharmacokinetic results to date from the volunteers who have taken CX1739 show that drug absorption over the range of 50mg to 1200mg was linear and predictable, with an approximate half-life of 8 hours.

The Company has conducted a single dose, randomized, double-blind, placebo-controlled study with CX1739 in 20 subjects with moderate to severe sleep apnea. Analysis of a range of sleep apnea parameters assessed by overnight polysomnography revealed that, while a single dose of CX1739 improved a number of sleep apnea parameters across most of the patients who were given the drug, the primary effects were observed within a sub-group of patients diagnosed with either central or mixed sleep apnea. CX1739 was safe, but the dose appeared to be near the limits of tolerability. There were no serious adverse events and no clinically relevant changes in vital signs, cardiovascular or other safety assessments.

We believe that the results from this study merit conducting a larger study with CX1739 that will be focused on patients with central and/or mixed sleep apnea. It is possible that repeated daily treatment with CX1739 for several weeks may prove to be tolerated better and with greater efficacy than a single dose. However, given the time and expense necessary to conduct such a clinical trial, the Company is not currently planning to conduct such a study. Instead, subsequent to additional funding, and using a design similar to that in which CX717 demonstrated clinical efficacy, the Company plans to conduct two clinical studies investigating the ability of orally administered CX1739 to antagonize the respiratory depressant effects of fentanyl and propofol without altering the analgesic and anesthetic effects of these drugs. The Company's short term commercial goals are to obtain FDA approval for the use of orally administered CX1739 for the following indications: 1.) pre-surgical administration for the prevention of respiratory depression produced by propofol and 2.) peri- and post-operative administration in a hospital setting for the prevention of respiratory depression produced by opiods. The Company believes that these goals can be achieved in a timely and cost-effective manner. Longer term goals include obtaining FDA approval for the use oral administration of CX1739 given concomitantly with an opioid analgesic for the safe management of pain in a home setting. The Company believes that successful commercial implementation of these goals will require corporate partnership.

In addition to CX1739, the Company is developing CX1942, a soluble ampakine, to be used in an injectable formulation as a rescue medication for the emergency treatment of drug-induced respiratory depression. Animal studies have indicated that intravenously injected CX1942 can reverse the respiratory depression produced by fentanyl. In October 2014, the Company began a study, funded by the National Institute of Drug Abuse, to determine the parameters whereby CX1942 is able to reverse the respiratory depression and lethality produced by a number of respiratory depressant drugs, including opioids. One aspect of the study will be to determine whether intramuscular or subcutaneous injections are as effective as intravenous. Upon completion of this study and the choice of a route of

administration, preclinical toxicology and safety studies can be conducted relatively quickly and inexpensively, since the clinical indication supported by these studies is for acute use.

Manufacturing

We have no experience or capability to either manufacture bulk quantities of the new compounds that we develop, or to produce finished dosage forms of the compounds, such as tablets or capsules. We rely, and presently intend to continue to rely, on the manufacturing and quality control expertise of contract manufacturing organizations or current and prospective corporate partners. There is no assurance that we will be able to enter into manufacturing arrangements to produce bulk quantities of our compounds on favorable financial terms. There is, however, substantial availability of both bulk chemical manufacturing and dosage form manufacturing capability throughout the world that we believe we can readily access. See "Risk Factors – *Risks related to our business* – We are at an early stage of development and we may not be able to successfully develop and commercialize our products and technologies" for a discussion of certain risks related to the development and commercialization of our products.

Marketing

We have no experience in the marketing of pharmaceutical products and do not anticipate having the resources to distribute and broadly market any products that we may develop. We will therefore continue to seek commercial development arrangements with other pharmaceutical companies for our proposed products for those indications that require significant sales forces to effectively market. In entering into such arrangements, we may seek to retain the right to promote or co-promote products for certain of the Orphan Drug indications in North America. We believe that there is a significant expertise base for such marketing and sales functions within the pharmaceutical industry and expect that we could recruit such expertise if we choose to directly market a drug. See "Risk Factors—*Risks related to our business*—We are at an early stage of development and we may not be able to successfully develop and commercialize our products and technologies" for a discussion of certain risks related to the marketing of our products.

Employees

As of December 31, 2014 and as of the date of filing of this Annual Report on Form 10-K, the Company employed six people (four of them officers), one of whom was full time (including certain contractors who provide substantial services to the Company).

Technology Rights

University of California, Irvine License Agreements

The Company entered into a series of license agreements in 1993 and 1998 with the University of California, Irvine ("UCI") that granted the Company proprietary rights to certain chemical compounds that acted as ampakines and their therapeutic uses. These agreements granted the Company, among other provisions, exclusive rights: (i) to practice certain patents and patent applications, as defined in the license agreement, that were then held by UCI; (ii) to identify, develop, make, have made, import, export, lease, sell, have sold or offer for sale any related licensed products; and (iii) to grant sub-licenses of the rights granted in the license agreements, subject to the provisions of the license agreements. The Company was required, among other terms and conditions, to pay UCI a license fee, royalties, patent costs and certain additional payments.

Under such license agreements, the Company was required to make minimum annual royalty payments of approximately $70,000. The Company was also required to spend a minimum of $250,000 per year to advance the ampakine compounds until the Company began to market an ampakine compound. At December 31, 2012, the

Company was not in compliance with its minimum annual payment obligations and believed that this default constituted a termination of the license agreements. On April 15, 2013, the Company received a letter from UCI indicating that the license agreements between UCI and the Company had been terminated due to the Company's failure to make certain payments required to maintain the agreements. Since the patents covered in these license agreements had begun to expire and the therapeutic uses described in these patents were no longer germane to the Company's new focus on respiratory disorders, the loss of these license agreements is not expected to have a material impact on the Company's current drug development programs. In the opinion of management, the Company has made adequate provision for any liability relating to this matter in its financial statements at December 31, 2014 and 2013.

University of Alberta License Agreement

On May 8, 2007, the Company entered into a license agreement, as subsequently amended, with the University of Alberta granting the Company exclusive rights to practice patents held by the University of Alberta claiming the use of ampakines for the treatment of various respiratory disorders. The Company agreed to pay the University of Alberta a licensing fee and a patent issuance fee, which were paid, and prospective payments consisting of a royalty on net sales, sublicense fee payments, maintenance payments and milestone payments. The prospective maintenance payments commence on the enrollment of the first patient into the first Phase 2B clinical trial and increase upon the successful completion of the Phase 2B clinical trial. As the Company does not at this time anticipate scheduling a Phase 2B clinical trial, no maintenance payments are currently due and payable to the University of Alberta. In addition, no other prospective payments are currently due and payable to the University of Alberta.

University of Illinois License Agreement

Through the merger with Pier, the Company gained access to the License Agreement that Pier had entered into with the University of Illinois on October 10, 2007. The License Agreement covered certain patents and patent applications in the United States and other countries claiming the use of certain compounds referred to as cannabinoids for the treatment of sleep related breathing disorders (including sleep apnea), of which dronabinol is a specific example of one type of cannabinoid. The License Agreement was terminated effective March 21, 2013 due to the Company's failure to make a required payment.

On June 27, 2014, the Company entered into a new license agreement with the Board of Trustees of the University of Illinois that was similar, but not identical, to the License Agreement between the parties that had been terminated on March 21, 2013. In exchange for certain milestone and royalty payments, the License Agreement grants the Company (i) exclusive rights to several issued and pending patents in numerous jurisdictions and (ii) the non-exclusive right to certain technical information that is generated by the University of Illinois in connection with certain clinical trials as specified in the License Agreement, all of which relate to the use of cannabinoids for the treatment of sleep related breathing disorders. The Company is developing dronabinol for the treatment of OSA, the most common form of sleep apnea.

Item 1A. Risk Factors

In addition to the other matters set forth in this Annual Report on Form 10-K, our continuing operations and the price of our common stock are subject to the following risks:

Risks related to our business

Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern.

In its audit opinion issued in connection with our balance sheets as of December 31, 2014 and 2013 and our statements of operations, stockholders' equity (deficiency), and cash flows for the years ended December 31, 2014 and 2013, our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern given our limited working capital, recurring net losses and negative cash flows from operations. The accompanying consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities and commitments in the normal course of

business. The consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or amounts of liabilities that might be necessary should we be unable to continue in existence. While we have relied principally in the past on external financing to provide liquidity and capital resources for our operations, we can provide no assurance that cash generated from our operations together with cash received in the future from external financing, if any, will be sufficient to enable us to continue as a going concern.

We have a history of net losses; we expect to continue to incur net losses and we may never achieve or maintain profitability.

Since our formation on February 10, 1987 through the end of our most recent fiscal year ended December 31, 2014, we have generated only modest operating revenues and we have incurred net losses of $142,311,095. For the fiscal year ended December 31, 2014, our net loss was $2,707,535 and as of December 31, 2014, we had an accumulated deficit of $142,311,095. For the year ended December 31, 2013, our net loss was $1,201,457 and as of December 31, 2013, we had an accumulated deficit of $129,542,788. We have not generated any revenue from product sales to date, and it is possible that we will never generate revenues from product sales in the future. Even if we do achieve significant revenues from product sales, we expect to incur significant net losses over the next several years. As with other companies in the biotechnology industry, it is possible that we will never achieve profitable operations.

We will need additional capital in the future and, if such capital is not available on terms acceptable to us or available to us at all, we may need to scale back our research and development efforts and may be unable to continue our business operations.

We will require substantial additional funds to advance our research and development programs and to continue our operations, particularly if we decide to independently conduct later-stage clinical testing and apply for regulatory approval of any of our proposed products, and if we decide to independently undertake the marketing and promotion of our products. Additionally, we may require additional funds in the event that we decide to pursue strategic acquisitions of or licenses for other products or businesses. Based on our operating plan as of December 31, 2014, we estimated that our existing cash resources may not be sufficient to meet our requirements for 2015. We believe that we will require additional capital to fund on-going operations. Additional funds may result from agreements with larger pharmaceutical companies that include the license or rights to the technologies and products that we are currently developing, although there is no assurance that we will secure such a transaction in a timely manner, or at all.

Our cash requirements in the future may differ significantly from our current estimates, depending on a number of factors, including:

- the results of our clinical trials;
- the time and costs involved in obtaining regulatory approvals;
- the costs of setting up and operating our own marketing and sales organization;
- the ability to obtain funding under contractual and licensing agreements;
- the costs involved in obtaining and enforcing patents or any litigation by third parties regarding intellectual property; and
- our success in entering into collaborative relationships with other parties.

To finance our future activities, we may seek funds through additional rounds of financing, including private or public equity or debt offerings and collaborative arrangements with corporate partners. We cannot say with any certainty that we will be able to obtain the additional needed funds on reasonable terms, or at all. The sale of additional equity or convertible debt securities could result in additional and possibly substantial dilution to our stockholders. If we issued preferred equity or debt securities, these securities could have rights superior to holders of our common stock, and such instruments entered into in connection with the issuance of securities could contain covenants that will restrict our operations. We might have to obtain funds through arrangements with collaborative partners or others that may require us to relinquish rights to our technologies, product candidates or products that we otherwise would not relinquish. In early March 2009 and again in August 2011, we reduced our workforce in an effort to conserve our capital resources. In 2012, several members of management departed. In March 2013 the then-current remaining members of management were removed by our newly elected board of directors and new officers were appointed. If

adequate funds are not available in the future, as required, we could lose our key employees and might have to further delay, scale back or eliminate one or more of our research and development programs, which would impair our future prospects. In addition, we may be unable to meet our research spending obligations under our existing licensing agreements and may be unable to continue our business operations.

Our product opportunities rely on licenses from research institutions and if we lose access to these technologies or applications, our business could be substantially impaired.

Under our agreements with The Regents of the University of California, we had exclusive rights to certain ampakine compounds for all applications for which the University had patent rights, other than endocrine modulation. The license securing these rights has since been terminated.

Under a patent license agreement with The Governors of the University of Alberta, we have exclusive rights to the use of certain ampakine compounds to prevent and treat respiratory depression induced by opiate analgesics, barbiturates and anesthetic and sedative agents.

On May 8, 2007, the Company entered into a license agreement, as subsequently amended, with the University of Alberta granting the Company exclusive rights to practice patents held by the University of Alberta claiming the use of ampakines for the treatment of various respiratory disorders. The Company agreed to pay the University of Alberta a licensing fee and a patent issuance fee, which were paid, and prospective payments consisting of a royalty on net sales, sublicense fee payments, maintenance payments and milestone payments. The prospective maintenance payments commence on the enrollment of the first patient into the first Phase 2B clinical trial and increase upon the successful completion of the Phase 2B clinical trial. As the Company does not at this time anticipate scheduling a Phase 2B clinical trial, no maintenance payments are currently due and payable to the University of Alberta. In addition, no other prospective payments are currently due and payable to the University of Alberta.

Through the merger with Pier, the Company gained access to an Exclusive License Agreement (as amended, the Pier License Agreement), that Pier had entered into with the University of Illinois on October 10, 2007. The Pier License Agreement covered certain patents and patent applications in the United States and other countries claiming the use of certain compounds referred to as cannabinoids for the treatment of sleep related breathing disorders (including sleep apnea), of which dronabinol is a specific example of one type of cannabinoid. Dronabinol is a synthetic derivative of the naturally occurring substance in the cannabis plant, otherwise known as Δ9-THC (Δ9-tetrahydrocannabinol). Dronabinol is currently approved by the FDA and is sold generically for use in refractory chemotherapy-induced nausea and vomiting, as well as for anorexia in patients with AIDS. Pier's business plan was to determine whether dronabinol would significantly improve subjective and objective clinical measures in patients with obstructive sleep apnea. In addition, Pier intended to evaluate the feasibility and comparative efficacy of a proprietary formulation of dronabinol. The Pier License Agreement was terminated effective March 21, 2013 due to the Company's failure to make a required payment and on June 27, 2014, the Company entered into a new license agreement with the University of Illinois that was similar, but not identical, to the Pier License Agreement that had been terminated. If we are unable to comply with the terms of the new license agreement, such as required payments thereunder, the new license agreement might be terminated.

We are at an early stage of development and we may not be able to successfully develop and commercialize our products and technologies.

The development of ampakine products and cannabinoid products is subject to the risks of failure commonly experienced in the development of products based upon innovative technologies and the expense and difficulty of obtaining approvals from regulatory agencies. Drug discovery and development is time consuming, expensive and unpredictable. On average, only one out of many thousands of chemical compounds discovered by researchers proves to be both medically effective and safe enough to become an approved medicine. All of our proposed products are in the preclinical or early clinical stage of development and will require significant additional funding for research, development and clinical testing before we are able to submit them to any of the regulatory agencies for clearances for commercial use.

The process from discovery to development to regulatory approval can take several years and drug candidates can fail at any stage of the process. Late stage clinical trials often fail to replicate results achieved in earlier studies.

Historically, in our industry more than half of all compounds in development failed during Phase 2 trials and 30% failed during Phase 3 trials. We cannot assure you that we will be able to complete successfully any of our research and development activities. Even if we do complete them, we may not be able to market successfully any of the products or be able to obtain the necessary regulatory approvals or assure that healthcare providers and payors will accept our products. We also face the risk that any or all of our products will not work as intended or that they will be unsafe, or that, even if they do work and are safe, that our products will be uneconomical to manufacture and market on a large scale. Due to the extended testing and regulatory review process required before we can obtain marketing clearance, we do not expect to be able to commercialize any therapeutic drug for several years, either directly or through our corporate partners or licensees.

We may not be able to enter into the strategic alliances necessary to fully develop and commercialize our products and technologies, and we will be dependent on our corporate partners if we do.

We are seeking pharmaceutical company partners to develop other major indications for the ampakine compounds and cannabinoids. These agreements would potentially provide us with additional funds in exchange for exclusive or non-exclusive license or other rights to the technologies and products that we are currently developing. Competition between biopharmaceutical companies for these types of arrangements is intense. We cannot give any assurance that our discussions with candidate companies will result in an agreement or agreements in a timely manner, or at all. Additionally, we cannot assure you that any resulting agreement will generate sufficient revenues to offset our operating expenses and longer-term funding requirements.

If our third-party manufacturers' facilities do not follow current good manufacturing practices, our product development and commercialization efforts may be harmed.

There are a limited number of manufacturers that operate under the FDA's and European Union's good manufacturing practices regulations and are capable of manufacturing products. Third-party manufacturers may encounter difficulties in achieving quality control and quality assurance and may experience shortages of qualified personnel. A failure of third-party manufacturers to follow current good manufacturing practices or other regulatory requirements and to document their adherence to such practices may lead to significant delays in the availability of products for commercial use or clinical study, the termination of, or hold on, a clinical study, or may delay or prevent filing or approval of marketing applications for our products. In addition, we could be subject to sanctions being imposed on us, including fines, injunctions and civil penalties. Changing manufacturers may require additional clinical trials and the revalidation of the manufacturing process and procedures in accordance with FDA mandated current good manufacturing practices and will require FDA approval. This revalidation may be costly and time consuming. If we are unable to arrange for third-party manufacturing of our products, or to do so on commercially reasonable terms, we may not be able to complete development or marketing of our products.

Our ability to use our net operating loss carry forwards will be subject to limitations upon a change in ownership, which could reduce our ability to use those loss carry forwards following any change in Company ownership.

Generally, a change of more than 50% in the ownership of a Company's stock, by value, over a three-year period constitutes an ownership change for U.S. federal income tax purposes. An ownership change may limit our ability to use our net operating loss carry forwards attributable to the period prior to such change. We have sold or otherwise issued shares of our common stock in various transactions sufficient to constitute an ownership change, including the issuance of the Series G 1.5% Convertible Preferred Stock (as defined below), and the issuance of convertible notes and warrants. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carry forwards, which amounted to approximately $87,287,000 as of December 31, 2014, to offset U.S. federal taxable income will be subject to limitations, which would restrict our ability to reduce future tax liability. Future shifts in our ownership, including transactions in which we may engage, may cause additional ownership changes, which could have the effect of imposing additional limitations on our ability to use our pre-change net operating loss carry forwards.

Risks related to our industry

If we fail to secure adequate intellectual property protection, it could significantly harm our financial results and ability to compete.

Our success will depend, in part, on our ability to obtain and maintain patent protection for our products and processes in the United States and elsewhere. We have filed and intend to continue to file patent applications as we need them. However, additional patents that may issue from any of these applications may not be sufficiently broad to protect our technology. Also, any patents issued to us or licensed by us may be designed around or challenged by others, and if such design or challenge is effective, it may diminish our rights.

If we are unable to obtain and maintain sufficient protection of our proprietary rights in our products or processes prior to or after obtaining regulatory clearances, our competitors may be able to obtain regulatory clearance and market similar or competing products by demonstrating at a minimum the equivalency of their products to our products. If they are successful at demonstrating at least the equivalency between the products, our competitors would not have to conduct the same lengthy clinical tests that we have or will have conducted.

We also rely on trade secrets and confidential information that we try to protect by entering into confidentiality agreements with other parties. Those confidentiality agreements may be breached, and our remedies may be insufficient to protect the confidential information. Further, our competitors may independently learn our trade secrets or develop similar or superior technologies. To the extent that our consultants, key employees or others apply technological information independently developed by them or by others to our projects, disputes may arise regarding the proprietary rights to such information or developments. We cannot assure you that such disputes will be resolved in our favor.

We may be subject to potential product liability claims. One or more successful claims brought against us could materially impact our business and financial condition.

The clinical testing, manufacturing and marketing of our products may expose us to product liability claims. We have never been subject to a product liability claim, and we require each patient in our clinical trials to sign an informed consent agreement that describes the risks related to the trials, but we cannot assure you that the coverage limits of our insurance policies will be adequate or that one or more successful claims brought against us would not have a material adverse effect on our business, financial condition and result of operations. Further, if one of our ampakine or cannabinoid compounds is approved by the FDA for marketing, we cannot assure you that adequate product liability insurance will be available, or if available, that it will be available at a reasonable cost. Any adverse outcome resulting from a product liability claim could have a material adverse effect on our business, financial condition and results of operations.

We face intense competition that could result in products that are superior to the products that we are developing.

Our business is characterized by intensive research efforts. Our competitors include many companies, research institutes and universities that are working in a number of pharmaceutical or biotechnology disciplines to develop therapeutic products similar to those we are currently investigating. Most of these competitors have substantially greater financial, technical, manufacturing, marketing, distribution and/or other resources than we do. In addition, many of our competitors have experience in performing human clinical trials of new or improved therapeutic products and obtaining approvals from the FDA and other regulatory agencies. We have no experience in conducting and managing later-stage clinical testing or in preparing applications necessary to obtain regulatory approvals. Accordingly, it is possible that our competitors may succeed in developing products that are safer or more effective than those that we are developing and/or may obtain FDA approvals for their products faster than we can. We expect that competition in this field will continue to intensify.

We may be unable to recruit and retain our senior management and other key technical personnel on whom we are dependent.

We are highly dependent upon senior management and key technical personnel and currently do not carry any insurance policies on such persons. Since our change in management in March 2013, we are highly dependent on Arnold S. Lippa, Ph.D., our President and Chief Executive Officer, Jeff E. Margolis, our Treasurer and Secretary, and, since his appointment in April 2013, our Chief Financial Officer Robert N. Weingarten. Competition for qualified employees among pharmaceutical and biotechnology companies is intense. The loss of any of our senior management, or our inability to attract, retain and motivate the additional or replacement highly-skilled employees and consultants that our business requires, could substantially hurt our business and prospects.

The regulatory approval process is expensive, time consuming, uncertain and may prevent us from obtaining required approvals for the commercialization of some of our products.

The FDA and other similar agencies in foreign countries have substantial requirements for therapeutic products. Such requirements often involve lengthy and detailed laboratory, clinical and post-clinical testing procedures and are expensive to complete. It often takes companies many years to satisfy these requirements, depending on the complexity and novelty of the product. The review process is also extensive, which may delay the approval process even more.

As of yet, we have not obtained any approvals to market our products. Further, we cannot assure you that the FDA or other regulatory agency will grant us approval for any of our products on a timely basis, if at all. Even if regulatory clearances are obtained, a marketed product is subject to continual review, and later discovery of previously unknown problems may result in restrictions on marketing or withdrawal of the product from the market.

Risks related to capital structure

Our stock price may be volatile and our common stock could decline in value.

The market price of securities of life sciences companies in general has been very unpredictable. The range of sales prices of our common stock for the fiscal years ended December 31, 2014 and 2013, as quoted on the Over the Counter Bulletin Board, was $0.0240 to $0.0900 and $0.0231 to $0.0990, respectively. The following factors, in addition to factors that affect that market generally, could significantly affect our business, and the market price of our common stock could decline:

- competitors announcing technological innovations or new commercial products;
- competitors' publicity regarding actual or potential products under development;
- regulatory developments in the United States and foreign countries;
- developments concerning proprietary rights, including patent litigation;
- public concern over the safety of therapeutic products; and
- changes in healthcare reimbursement policies and healthcare regulations.

Our common stock is thinly traded and you may be unable to sell some or all of your shares at the price you would like, or at all, and sales of large blocks of shares may depress the price of our common stock.

Our common stock has historically been sporadically or "thinly-traded," meaning that the number of persons interested in purchasing shares of our common stock at desired prices at any given time may be relatively small or nonexistent. As a consequence, there may be periods of several days or more when trading activity in shares of our common stock is minimal or non-existent, as compared to a seasoned issuer that has a large and steady volume of trading activity that will generally support continuous sales without an adverse effect on share price. This could lead to wide fluctuations in our share price. You may be unable to sell your common stock at or above your purchase price, which may result in substantial losses to you. Also, as a consequence of this lack of liquidity, the trading of relatively small quantities of shares by our stockholders may disproportionately influence the price of shares of our common stock in either direction. The price of shares of our common stock could, for example, decline precipitously in the event a large number of share of our common shares are sold on the market without commensurate demand, as compared to a seasoned issuer which could better absorb those sales without adverse impact on its share price.

There is a large number of shares of the Company's common stock that may be issued or sold, and if such shares are issued or sold, the market price of our common stock may decline.

As of December 31, 2014, we had 232,145,326 shares of our common stock outstanding.

If all warrants and options outstanding as of December 31, 2014 are exercised prior to their expiration, up to 51,402,764 additional shares of our common stock could become freely tradable. Such sales of substantial amounts of common stock in the public market could adversely affect the prevailing market price of our common stock and could also make it more difficult for us to raise funds through future offerings of common stock.

On March 18 and April 17, 2014, we issued shares of our Series G 1.5% Convertible Preferred Stock, which are convertible into shares of our common stock (see Note 6 to our consolidated financial statements for the years ended December 31, 2014 and 2013). On November 5, December 9 and December 31, 2014, and again on February 2, 2015 we issued convertible notes and warrants, both of which are convertible into shares of our common stock (see Note 3 to our consolidated financial statements for the years ended December 31, 2014 and 2013) and may in the future issue additional equity or equity-based securities. If some or all of our Series G 1.5% Convertible Preferred Stock, convertible notes or warrants converts to common stock, or if we issue additional equity or equity-based securities, the number of shares of our common stock outstanding could increase substantially (as of December 31, 2014, by approximately 264,000,000 shares if all of our Series G 1.5% Convertible Preferred Stock converted and by approximately 21,000,000 if all of our convertible notes and warrants converted), which could adversely affect the prevailing market price of our common stock and could also make it more difficult for us to raise funds through future offerings of common stock.

Our charter document may prevent or delay an attempt by our stockholders to replace or remove management.

Certain provisions of our restated certificate of incorporation, as amended, could make it more difficult for a third party to acquire control of our business, even if such change in control would be beneficial to our stockholders. Our restated certificate of incorporation, as amended, allowed the Board of Directors of the Company, referred to as the Board or Board of Directors, to issue as of December 31, 2014 up to 3,505,800 shares of preferred stock, with characteristics to be determined by the board, without stockholder approval. The ability of our Board of Directors to issue additional preferred stock may have the effect of delaying or preventing an attempt by our stockholders to replace or remove existing directors and management.

If our common stock is determined to be a "penny stock," a broker-dealer may find it more difficult to trade our common stock and an investor may find it more difficult to acquire or dispose of our common stock in the secondary market.

In addition, our common stock may be subject to the so-called "penny stock" rules. The United States Securities and Exchange Commission ("SEC") has adopted regulations that define a "penny stock" to be any equity security that has a market price per share of less than $5.00, subject to certain exceptions, such as any securities listed on a national securities exchange. For any transaction involving a "penny stock," unless exempt, the rules impose additional sales practice requirements on broker-dealers, subject to certain exceptions. If our common stock is determined to be a "penny stock," a broker-dealer may find it more difficult to trade our common stock and an investor may find it more difficult to acquire or dispose of our common stock on the secondary market.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

As of December 31, 2014, the Company did not own any real property or maintain any leases with respect to real property. The Company does contract for services provided at the facilities owned by third parties and has employees who work in these facilities.

On May 14, 2012, the Company executed a three-year lease for approximately 5,000 square feet of office space beginning June 1, 2012 at a monthly rate of $9,204. During the three months ended December 31, 2012, the Company substantially vacated its operating facility and abandoned its furniture, equipment and leasehold improvements. In May 2013, the Company received notice that it had been sued in the Superior Court of California in a complaint filed on March 28, 2013 by its former landlord, PPC Irvine Center Investment, LLC, seeking among other things, $57,535 in past due rent, termination of the lease agreement, and reasonable attorney's fees. On May 23, 2013, a settlement was reached with the landlord that provided for the Company to relinquish its security deposit in the amount of $29,545, transfer title to its remaining furniture, equipment and leasehold improvements, and pay an additional $26,000.

Item 3. Legal Proceedings

We were not a party to any material legal proceedings, nor has any material proceeding been terminated during the fiscal year ended December 31, 2014.

We are periodically subject to various pending and threatened legal actions and claims. See Note 9 to our consolidated financial statements for the years ended December 31, 2014 and 2013—Commitments and Contingencies—*Pending or Threatened Legal Actions and Claims* and Note 10 to our consolidated financial statements for the years ended December 31, 2014 and 2013—Subsequent Events—*Debt Settlements* for details regarding these matters.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

Our common stock is quoted on the Over the Counter Bulletin Board, referred to as OTCBB, under the symbol "CORX". The following table presents quarterly information on the high and low sales prices of the common stock furnished by the OTCBB for the fiscal years ended December 31, 2014 and 2013. The quotations on the OTCBB reflect inter-dealer prices, without retail mark-up, mark-down or commission and may not necessarily represent actual transactions.

	High	Low
Fiscal Year ended December 31, 2014		
Fourth Quarter	$0.0900	$0.0300
Third Quarter	0.0790	0.0330
Second Quarter	0.0430	0.0240
First Quarter	0.0500	0.0260
Fiscal Year ended December 31, 2013		
Fourth Quarter	$0.0450	$0.0231
Third Quarter	0.0990	0.0300
Second Quarter	0.0800	0.0320
First Quarter	0.0500	0.0280

As of December 31, 2014, there were 397 stockholders of record of our common stock, and approximately 6,500 beneficial owners. The high and low sales prices for our common stock on December 31, 2014, as quoted on the OTC market, were $0.0451 and $0.0520, respectively.

We have never paid cash dividends on our common stock and do not anticipate paying such dividends in the foreseeable future. The payment of dividends, if any, will be determined by the Board in light of conditions then existing, including our financial condition and requirements, future prospects, restrictions in financing agreements, business conditions and other factors deemed relevant by the Board.

During the fiscal year ended December 31, 2014, we did not repurchase any of our securities.

Item 6. Selected Financial Data

Not applicable to smaller reporting companies.

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

The following discussion and analysis should be read in conjunction with the audited financial statements and notes related thereto appearing elsewhere in this document.

Overview

Cortex Pharmaceuticals, Inc. ("Cortex") was formed in 1987 to engage in the discovery, development and commercialization of innovative pharmaceuticals for the treatment of neurological and psychiatric disorders. In 2011, prior management conducted a re-evaluation of Cortex's strategic focus and determined that clinical development in the area of respiratory disorders, particularly respiratory depression and sleep apnea, provided the most cost-effective opportunities for potential rapid development and commercialization of Cortex's compounds. Accordingly, Cortex narrowed its clinical focus at that time and abandoned other avenues of scientific inquiry. This re-evaluation provided the impetus for Cortex's acquisition of Pier Pharmaceuticals, Inc. ("Pier") in August 2012. Cortex and its wholly-owned subsidiary, Pier, are collectively referred to herein as the "Company."

On March 22, 2013, the Company received a written consent of stockholders holding a majority of the Company's common stock (the "Written Consent") (i) removing Charles J. Casamento, M. Ross Johnson, John F. Benedik and Mark A. Varney from their positions as directors of the Company, and (ii) appointing each of Dr. Arnold S. Lippa, Ph.D. and Jeff E. Margolis to fill two of the vacancies created, each to hold such office until the next annual meeting of the stockholders and until their successors have been duly elected and qualified. The Written Consent did not remove Dr. Moogak Hwang, Ph.D., a representative of Samyang Optics Co. Ltd., a lender to and significant stockholder of the Company, from the Board of Directors. Dr. Hwang continued to serve as a director until his resignation from the Board of Directors effective September 30, 2013.

Following the delivery of the Written Consent, the Board of Directors, acting by unanimous written consent dated March 22, 2013, removed all officers of the Company and appointed Dr. Arnold S. Lippa, as Chairman of the Board, President and Chief Executive Officer and Jeff E. Margolis, as Vice President, Treasurer and Secretary. On April 29, 2013, Robert N. Weingarten was appointed as a director, Vice President and Chief Financial Officer.

New management was appointed in March 2013 and has continued to implement this revised strategic focus, including seeking the capital to fund such efforts. As a result of the Company's scientific discoveries and the acquisition of strategic, exclusive license agreements (including a new license agreement with the University of Illinois), management believes that the Company is now a leader in the discovery and development of innovative pharmaceuticals for the treatment of respiratory disorders.

Since its formation in 1987, Cortex has been engaged in the research and clinical development of a class of compounds referred to as ampakines. By acting as positive allosteric modulators of AMPA glutamate receptors, ampakines increase the excitatory effects of the neurotransmitter glutamate. Preclinical research suggested that these ampakines might have therapeutic potential for the treatment of certain respiratory disorders, as well as cognitive disorders, depression, attention deficit disorder and schizophrenia.

Cortex entered into a series of license agreements in 1993 and 1998 with the University of California, Irvine ("UCI") that granted Cortex proprietary rights to certain chemical compounds that acted as ampakines and their therapeutic uses. These agreements granted Cortex, among other provisions, exclusive rights: (i) to practice certain patents and patent applications, as defined in the license agreement, that were then held by UCI; (ii) to identify, develop, make, have made, import, export, lease, sell, have sold or offer for sale any related licensed products; and (iii) to grant sub-licenses of the rights granted in the license agreements, subject to the provisions of the license agreements. Cortex was required, among other terms and conditions, to pay UCI a license fee, royalties, patent costs and certain additional payments.

During December 2012, the Company informed UCI that it would be unable to make the annual payment due to a lack of funds. The Company believes that this notice, along with its subsequent failure to make its minimum annual payment obligation, constituted a default and termination of the license agreements. On April 15, 2013, UCI notified

the Company that these license agreements were terminated due to the Company's failure to make its obligatory payments. Since the patents covered in these license agreements had begun to expire and the therapeutic uses described in these patents were no longer germane to the Company's new focus on respiratory disorders, the loss of these license agreements is not expected to have a material impact on the Company's current or future drug development programs.

The Company also owns patents and patent applications for certain families of chemical compounds, including ampakines, which claim the chemical structures and their use in the treatment of various disorders. These patents cover, among other compounds, the Company's lead ampakines CX1739 and CX1942, and extend through at least 2028.

On May 8, 2007, Cortex entered into a license agreement, as subsequently amended, with the University of Alberta granting Cortex exclusive rights to practice patents held by the University of Alberta claiming the use of ampakines for the treatment of various respiratory disorders. These patents, along with Cortex's own patents claiming chemical structures, comprise Cortex's principal intellectual property supporting Cortex's research and clinical development program in the use of ampakines for the treatment of respiratory disorders. Cortex has completed pre-clinical studies indicating that several of its ampakines, including CX717, CX1739 and CX1942, were efficacious in treating drug induced respiratory depression caused by opiates or certain anesthetics without offsetting the analgesic effects of the opiates or the anesthetic effects of the anesthetics. In two clinical Phase 2 studies, one of which was published in a peer-reviewed journal, CX717, a predecessor compound to CX1739 and CX1942, antagonized the respiratory depression produced by fentanyl, a potent narcotic, without affecting the analgesia produced by this drug. In addition, Cortex has conducted a Phase 2A clinical study in which patients with sleep apnea were administered CX1739, Cortex's lead clinical compound. Preliminary results suggested that CX1739 might have use for the treatment of central and mixed sleep apnea, but not obstructive sleep apnea ("OSA").

In order to expand the Company's respiratory disorders program, the Company acquired 100% of the issued and outstanding equity securities of Pier effective August 10, 2012 pursuant to an Agreement and Plan of Merger. Pier was formed in June 2007 (under the name SteadySleep Rx Co.) as a clinical stage pharmaceutical company to develop a pharmacologic treatment for the respiratory disorder known as obstructive sleep apnea and had been engaged in research and clinical development activities since formation.

In connection with the merger transaction with Pier, Cortex issued 58,417,893 newly issued shares of its common stock with an aggregate fair value of $3,271,402 ($0.056 per share), based upon the closing price of the Company's common stock on August 10, 2012. The shares of common stock were issued to stockholders, convertible note holders, warrant holders, option holders, and certain employees and vendors of Pier in satisfaction of their interests and claims. The common stock issued by Cortex represented approximately 41% of the 144,041,556 common shares outstanding immediately following the closing of the transaction.

Through the merger, Cortex gained access to an Exclusive License Agreement, as amended (the "License Agreement"), that Pier had entered into with the University of Illinois on October 10, 2007. The License Agreement covered certain patents and patent applications in the United States and other countries claiming the use of certain compounds referred to as cannabinoids, of which dronabinol is a specific example, for the treatment of sleep related breathing disorders (including sleep apnea). Dronabinol is a synthetic derivative of the naturally occurring substance in the cannabis plant, otherwise known as Δ9-THC (Δ9-tetrahydrocannabinol). Pier's business plan was to determine whether dronabinol would significantly improve subjective and objective clinical measures in patients with OSA. In addition, Pier intended to evaluate the feasibility and comparative efficacy of a proprietary formulation of dronabinol.

The License Agreement granted Pier, among other provisions, exclusive rights: (i) to practice certain patents and patent applications, as defined in the License Agreement, that were then held by the University of Illinois; (ii) to identify, develop, make, have made, import, export, lease, sell, have sold or offer for sale any related licensed products; and (iii) to grant sub-licenses of the rights granted in the License Agreement, subject to the provisions of the

License Agreement. Pier was required under the License Agreement, among other terms and conditions, to pay the University of Illinois a license fee, royalties, patent costs and certain milestone payments.

Prior to the merger, Pier conducted a 21 day, randomized, double-blind, placebo-controlled dose escalation Phase 2 clinical study in 22 patients with obstructive sleep apnea, in which dronabinol produced a statistically significant reduction in the Apnea-Hypopnea Index ("AHI"), the primary therapeutic end-point, and was observed to be safe and well tolerated. Dronabinol is currently under investigation, at the University of Illinois and other centers, in a potentially pivotal 120 patient, double-blind, placebo-controlled Phase 2B OSA clinical trial, fully funded by the National Institutes of Health.

Dronabinol is a Schedule III, controlled generic drug with a relatively low abuse potential that is approved by the U.S. Food and Drug Administration ("FDA") for the treatment of AIDS-related anorexia and chemotherapy induced emesis. The use of dronabinol for the treatment of OSA is a novel indication for an already approved drug and, as such, the Company believes that it would only require approval by the FDA of a supplemental new drug application.

The Company accounted for the Pier transaction pursuant to ASC Topic 805, Business Combinations. The Company identified and evaluated the fair value of the assets acquired. Based on the particular facts and circumstances surrounding the history and status of Pier, including its business and intellectual property at the time of the merger transaction, the Company determined that the identifiable intangible assets were comprised solely of contract-based intangible assets, and that there was no measurable goodwill.

The intangible asset acquired in the Pier transaction consisted of the License Agreement. Unless terminated earlier, the License Agreement would terminate upon expiration or termination of all patent rights. The License Agreement defined patent rights as all of the University of Illinois' rights in the patents and patent applications, and (b) all of the University of Illinois' rights in all divisions, continuations, continuation-in-part applications, reissues, renewals, re-examinations, foreign counterparts, substitutions or extensions thereof. Based upon the expiration date of the underlying patents, the License Agreement would be amortized on a straight-line basis over the remaining life of the underlying patents of 172 months from the date of acquisition.

The License Agreement was terminated effective March 21, 2013 due to the Company's failure to make a required payment. The Company recorded a charge to operations of $3,321,678 for the impairment of the License Agreement effective December 31, 2012.

New management subsequently opened negotiations with the University of Illinois and as a result, the Company ultimately entered into a new license agreement with the University of Illinois on June 27, 2014, the material terms of which were similar to the License Agreement that had been terminated on March 21, 2013.

Loan from SY Corporation Co., Ltd.

On June 25, 2012, the Company borrowed 465,000,000 Won (the currency of South Korea, equivalent to approximately $400,000 US dollars) from and executed a secured note payable to SY Corporation Co., Ltd., formerly known as Samyang Optics Co. Ltd. ("Samyang"), an approximately 20% common stockholder of the Company at that time. The note accrues simple interest at the rate of 12% per annum and has a maturity date of June 25, 2013, although Samyang was permitted to demand early repayment of the promissory note on or after December 25, 2012. Samyang did not demand early repayment. The Company has not made any payments on the promissory note. At June 30, 2013 and subsequently, the promissory note was outstanding and in technical default, although Samyang has not issued a notice of default or a demand for repayment. The Company believes that Samyang is in default of its obligations under its January 2012 license agreement, as amended, with the Company, but the Company has not yet issued a notice of default. The Company anticipates entering into discussions with Samyang with a view toward a comprehensive resolution of the aforementioned matters.

Series G 1.5% Convertible Preferred Stock Placement

On March 14, 2014, the Company filed a Certificate of Designation, Preferences, Rights and Limitations, (the "Certificate of Designation") of its Series G 1.5% Convertible Preferred Stock ("Series G 1.5% Convertible Preferred Stock") with the Secretary of State of the State of Delaware to amend the Company's certificate of incorporation. The number of shares designated as Series G 1.5% Convertible Preferred Stock is 1,700 (which shall not be subject to

increase without the written consent of a majority of the holders of the Series G 1.5% Convertible Preferred Stock or as otherwise set forth in the Certificate of Designation). The Stated Value of each share of Series G 1.5% Convertible Preferred Stock is $1,000.

The Company pays a stated dividend on the Series G 1.5% Convertible Preferred Stock at a rate per share (as a percentage of the Stated Value per share) of 1.5% per annum, payable quarterly within 15 calendar days of the end of each fiscal quarter of the Company, in duly authorized, validly issued, fully paid and non-assessable shares of Series G 1.5% Convertible Preferred Stock, which may include fractional shares of Series G 1.5% Convertible Preferred Stock.

The Series G 1.5% Convertible Preferred Stock is convertible at the option of the holder, into common stock at the applicable conversion price, at a rate determined by dividing the Stated Value of the shares of Series G 1.5% Convertible Preferred Stock to be converted by the conversion price, subject to adjustments for stock dividends, splits, combinations and similar events as described in the form of Certificate of Designation. The stated value of the Series G 1.5% Convertible Preferred Stock is $1,000 per share, and the fixed conversion price is $0.0033. Accordingly, at the option of the holder, each share of Series G 1.5% Convertible Preferred Stock is convertible into 303,030.3 shares of common stock. In addition, the Company has the right to require the holders of the Series G 1.5% Convertible Preferred Stock to convert such shares into common stock under certain enumerated circumstances set forth in the Certificate of Designation.

Upon either (i) a Qualified Public Offering (as defined in the Certificate of Designation) or (ii) the affirmative vote of the holders of a majority of the Stated Value of the Series G 1.5% Convertible Preferred Stock issued and outstanding, all outstanding shares of Series G 1.5% Convertible Preferred Stock, plus all accrued or declared, but unpaid, dividends thereon, shall mandatorily be converted into such number of shares of common stock determined by dividing the Stated Value of such Series G 1.5% Convertible Preferred Stock (together with the amount of any accrued or declared, but unpaid, dividends thereon) by the Conversion Price (as defined in the Certificate of Designation). If not earlier converted, the Series G 1.5% Convertible Preferred Stock shall be redeemed by conversion on the two year anniversary of the date the last share of Series G 1.5% Convertible Preferred Stock is issued in the Private Placement, April 17, 2016, at the Conversion Price.

Except as described in the Certificate of Designation, holders of the Series G 1.5% Convertible Preferred Stock will vote together with holders of the Company common stock on all matters, on an as-converted to common stock basis, and not as a separate class or series (subject to limited exceptions).

In the event of any liquidation or winding up of the Company prior to and in preference to any Junior Securities (including common stock), the holders of the Series G 1.5% Convertible Preferred Stock will be entitled to receive in preference to the holders of the Company common stock a per share amount equal to the Stated Value, plus any accrued and unpaid dividends thereon.

On March 18, 2014, the Company entered into Securities Purchase Agreements with various accredited investors (the “Initial Purchasers”), pursuant to which the Company sold an aggregate of 753.22 shares of its Series G 1.5% Convertible Preferred Stock for a purchase price of $1,000 per share, or an aggregate purchase price of $753,220. This financing represents the initial closing on a private placement of up to $1,500,000 (the “Private Placement”). The Initial Purchasers in this tranche of the Private Placement consisted of (i) Arnold S. Lippa, the Company’s Chairman, Chief Executive Officer and a member of the Company’s Board of Directors, who had not previously owned common stock in the Company and who invested $250,000 for 250 shares of Series G 1.5% Convertible Preferred Stock, and (ii) new, non-affiliated, accredited investors. Neither the Series G 1.5% Convertible Preferred Stock nor the underlying shares of common stock have any registration rights.

The placement agents and selected dealers in connection with the initial tranche of the Private Placement received cash fees totaling $3,955 as compensation and warrants totaling approximately 5.6% of the shares of common stock into which the Series G 1.5% Convertible Preferred Stock may convert, exercisable for five years at a fixed price of $0.00396, which is 120% of the conversion price at which the Series G 1.5% Convertible Preferred Stock may convert into the Company’s common stock. Aurora Capital LLC was one of the placement agents.

On April 17, 2014, the Company entered into Securities Purchase Agreements with various accredited investors (together with the Initial Purchasers, the “Purchasers”), pursuant to which the Company sold an aggregate of 175.28 shares of its Series G 1.5% Convertible Preferred Stock, for a purchase price of $1,000 per share, or an aggregate

purchase price of $175,280. This was the second and final closing on the Private Placement. The Purchasers in the second and final tranche of the Private Placement consisted of new, non-affiliated, accredited investors and non-management investors who had also invested in the first closing. Neither the Series G 1.5% Convertible Preferred Stock nor the underlying shares of common stock have any registration rights.

The placement agents and selected dealers in connection with the second tranche of the Private Placement received cash fees of $3,465 as compensation and warrants totaling approximately 12.0% of the shares of common stock into which the Series G 1.5% Convertible Preferred Stock may convert, exercisable for five years at a fixed price of $0.00396, which is 120% of the conversion price at which the Series G 1.5% Convertible Preferred Stock may convert into the Company’s common stock. Aurora Capital LLC was one of the placement agents.

The aggregate of 928.5 shares of Series G 1.5% Convertible Preferred Stock sold in the Private Placement (exclusive of any accrued dividends) are convertible into a total of 281,363,634 shares of common stock. The warrants that the placement agents and selected dealers received in connection with the Private Placement represented the right to acquire 19,251,271 shares of common stock exercisable for five years at a fixed price of $0.00396, which is 120% of the conversion price at which the Series G 1.5% Convertible Preferred Stock may convert into the Company’s common stock.

The shares of Series G 1.5% Convertible Preferred Stock were offered and sold without registration under the Securities Act of 1933, as amended (the "Securities Act"), in reliance on the exemptions provided by Section 4(a)(2) of the Securities Act as provided in Rule 506(b) of Regulation D promulgated thereunder. The shares of Series G 1.5% Convertible Preferred Stock and the Company's common stock issuable upon conversion of the shares of Series G 1.5% Convertible Preferred Stock have not been registered under the Securities Act or any other applicable securities laws, and unless so registered, may not be offered or sold in the United States except pursuant to an exemption from the registration requirements of the Securities Act.

The Company recorded a dividend on the Series G 1.5% Convertible Preferred Stock of $10,926 during the year ended December 31, 2014, which was paid through the issuance of an additional 10.9 shares of Series G 1.5% Convertible Preferred Stock.

Capitalized terms in this section that are not otherwise defined have the meanings ascribed to them in the Stock Purchase Agreements, the form of which was previously filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 24, 2014.

Convertible Note and Warrant Financing

On November 5, 2014, the Company entered into a Convertible Note and Warrant Purchase Agreement (the "Purchase Agreement") with various accredited, non-affiliated investors (each, a "Purchaser"), pursuant to which the Company sold an aggregate principal amount of $238,500 of its (i) 10% Convertible Notes due September 15, 2015 (each a "Note", and together, the "Notes") and (ii) Warrants to purchase shares of common stock (the "Warrants") as described below. This was the initial closing of a private placement of up to $1,000,000. Unless otherwise provided for in the Notes, the outstanding principal balance of each Note and all accrued and unpaid interest is due and payable in full on September 15, 2015. At any time, each Purchaser may elect, at its option and in its sole discretion, to convert the outstanding principal amount into a fixed number of shares of the Company's common stock equal to the quotient obtained by dividing the outstanding principal amount by $0.035 (an aggregate of 6,814,286 shares), plus any accrued and unpaid interest, which is treated in the same manner as the outstanding principal amount. In the case of a Qualified Financing (as defined in the Purchase Agreement), the outstanding principal amount and accrued and unpaid interest under the Notes automatically convert into common stock at a common stock equivalent price of $0.035. In the case of an Acquisition (as defined in the Purchase Agreement), the Company may elect to either: (i) convert the outstanding principal amount and all accrued and unpaid interest under the Notes into shares of common stock or (ii) accelerate the maturity date of the Notes to the date of closing of the Acquisition. Each Warrant to purchase shares of common stock is exercisable into a fixed number of shares of common stock of the Company calculated as each Purchaser's investment amount divided by $0.035 (an aggregate of 6,814,286 shares for the initial closing). The Warrants do not have any cashless exercise provisions and are exercisable through September 15, 2015 at a fixed price of $0.035 per share. The shares of common stock issuable upon conversion of the Notes and exercise of the Warrants are not subject to any registration rights.

On December 9, 2014, December 31, 2014, and February 2, 2015, the Company sold an additional $46,000, $85,000 and $210,000, respectively, of principal amount of the Notes and Warrants to various accredited investors. The Company terminated this financing effective February 18, 2015.

Placement agent fees, brokerage commissions, finder's fees and similar payments were made in the form of cash and warrants to qualified referral sources in connection with the sale of the Notes and Warrants. In connection with the initial closing, fees of $16,695 were paid in cash, based on 7% of the aggregate principal amount of the Notes issued to such referral sources, and the fees paid in warrants (the "Placement Agent Warrants") consisted of 477,000 warrants, reflecting warrants for that number of shares equal to 7% of the number of shares of common stock into which the corresponding Notes are convertible. In connection with the second closing, fees of $700 were paid in cash and 20,000 Placement Agent Warrants were issued. In connection with the third closing, fees of $3,500 were paid in cash and 100,000 Placement Agent Warrants were issued. In connection with the fourth closing, fees of $14,700 were paid in cash and 420,000 Placement Agent Warrants were issued. The Placement Agent Warrants have cashless exercise provisions and are exercisable through September 15, 2015 at a fixed price of $0.035 per share. Aurora Capital LLC is acting as the placement agent for this financing.

The Notes and Warrants were offered and sold without registration under the Securities Act in reliance on the exemptions provided by Section 4(a)(2) of the Securities Act as provided in Rule 506 of Regulation D promulgated thereunder. The Notes and Warrants and the shares of common stock issuable upon conversion of the Notes and exercise of the Warrants have not been registered under the Securities Act or any other applicable securities laws, and unless so registered, may not be offered or sold in the United States except pursuant to an exemption from the registration requirements of the Securities Act.

Debt Settlements

During the three months ended March 31, 2014, the Company executed settlement agreements with four former executives that resulted in the settlement of potential claims totaling approximately $1,336,000 for a total of approximately $118,000 in cash, plus the issuance of options to purchase 4,300,000 shares of common stock exercisable at $0.04 per share for periods ranging from five to ten years. In addition to other provisions, the settlement agreements included mutual releases.

During the three months ended June 30, 2014, the Company also executed settlement agreements with certain former service providers that resulted in the settlement of potential claims totaling approximately $591,000 for a cost of approximately $155,000 in cash, plus the issuance of options to purchase 1,250,000 shares of common stock exercisable at $0.04 per share for a period of five years. In addition to other provisions, the settlement agreements included mutual releases.

The aforementioned agreements resulted in the settlement of potential claims totaling approximately $1,927,000 for a cost of approximately $273,000 in cash, plus the issuance of options to purchase 5,550,000 shares of common stock exercisable at $0.04 per share for periods ranging from five to ten years.

Effective January 29, 2015, the Company executed a settlement agreement with its former Vice President and Chief Financial Officer, as amended on February 4, 2015, that resulted in the settlement of potential claims for a total cash payment of $26,000 to be paid on or before June 30, 2015 (of which $6,000 was paid on execution), plus the issuance of a stock option to purchase 500,000 shares of common stock exercisable at $0.0512 per share for a period of five years, and valued pursuant to the Black-Scholes option-pricing model at $25,450. In addition to other provisions, the settlement agreement included mutual releases.

The Company continues to explore ways to reduce its indebtedness, and might in the future enter additional settlements of potential claims, including, without limitation, those by other former executives or third party creditors.

Awards to Officers and Directors as Compensation

On April 14, 2014, the Board of Directors of the Company awarded a total of 57,000,000 shares of common stock of the Company, including awards of 15,000,000 shares to each of the Company's three executive officers, who were also all of the directors of the Company at that time, and 4,000,000 shares and 8,000,000 shares to two other individuals. The individual who received the 8,000,000 shares was an associated person of Aurora Capital LLC, a related party. These awards were made to those individuals on that date as compensation for services rendered through March 31, 2014. Prior to these awards, none of the officers or directors of the Company had earned or received any cash compensation from the Company since joining the Company in March and April 2013, and there were no prior compensation arrangements or agreements with such individuals. As the initial closing of the Series G 1.5% Convertible Preferred Stock was completed on March 18, 2014, and such closing represented approximately 81% of the total amount of such financing, the Company's Board of Directors determined that it was appropriate at that time to compensate such officers for the period since they joined the Company in March and April 2013 through March 31, 2014. Such compensation was concluded on April 14, 2014 with the issuance of the aforementioned stock awards. Accordingly, as a result of these factors, the fair value of these stock awards of $2,280,000 was charged to operations effective as of March 18, 2014. The stock awards were valued at $0.04 per share, which was the closing price of the Company's common stock on March 18, 2014. These stock awards were made under the Company's 2014 Equity, Equity-Linked and Equity Derivative Incentive Plan.

On July 17, 2014, the Board of Directors of the Company awarded stock options to purchase a total of 15,000,000 shares of common stock of the Company, consisting of options for 5,000,000 shares to each of the Company's three executive officers, who were also all of the directors of the Company at that time. The stock options were awarded as compensation for those individuals through December 31, 2014. The stock options vest in three equal installments on July 17, 2014 (at issuance), September 30, 2014, and December 31, 2014, and expire on July 17, 2019. The exercise price of the stock options was established on the grant date at $0.05 per share, as compared to the closing market price of the Company's common stock on such date of $0.044 per share, reflecting an exercise price premium of $0.006 per share or 13.6%.

In connection with the appointment of James Sapirstein and Kathryn MacFarlane as directors of the Company on September 3, 2014, discussed below, the Board of Directors awarded an aggregate of 4,000,000 shares of common stock of the Company to the new directors, consisting of 2,000,000 shares to each new director, vesting 50% upon appointment to the Board of Directors, 25% on September 30, 2014 and 25% on December 31, 2014.

These stock awards to directors in 2014 were made under the Company's 2014 Equity, Equity-Linked and Equity Derivative Incentive Plan.

University of Illinois 2014 Exclusive License Agreement

On June 27, 2014, the Company entered into an Exclusive License Agreement (the "2014 License Agreement") with the University of Illinois, the material terms of which were similar to the License Agreement between the parties that had been previously terminated on March 21, 2013. The 2014 License Agreement became effective on September 18, 2014, upon the completion of certain conditions set forth in the 2014 License Agreement, including (i) the payment by the Company of a $25,000 licensing fee, (ii) the payment by the Company of outstanding patent costs aggregating $15,840, and (iii) the assignment to the University of Illinois of rights the Company held in certain patent applications, all of which conditions were fulfilled. In exchange for certain milestone and royalty payments, the 2014 License Agreement granted the Company (i) exclusive rights to several issued and pending patents in numerous jurisdictions and (ii) the non-exclusive right to certain technical information that is generated by the University of Illinois in connection with certain clinical trials as specified in the 2014 License Agreement, all of which relate to the use of cannabinoids for the treatment of sleep related breathing disorders. The Company is developing dronabinol (Δ9-tetrahydrocannabinol), a cannabinoid, for the treatment of OSA, the most common form of sleep apnea.

Settlement with the Institute for the Study of Aging

On September 2, 2014, the Company entered into a Release Agreement (the "Release Agreement") with the Institute for the Study of Aging (the "Institute") to settle an outstanding promissory note, dated May 30, 2000, issued by the Company in favor of the Institute for an initial principal amount of $247,300 (the "Note"), which was made pursuant to an Agreement to Accept Conditions of Loan Support, also dated May 30, 2000 (the "Loan Support Agreement"). At August 31, 2014, the amount owed under the Note, including accrued interest was approximately $337,000. Pursuant to the terms of the Release Agreement, the Institute received 1,000,000 restricted shares of the Company's common stock as settlement of all obligations of the Company under the Note and the Loan Support Agreement. Such common shares are "restricted securities" as defined under Rule 144 promulgated under the Securities Act of 1933, as amended, and are not subject to any registration rights. The Release Agreement also includes a mutual release between the Company and the Institute, releasing each party from all claims up until the date of the Release Agreement.

Appointment of New Directors

On September 3, 2014, James Sapirstein and Kathryn MacFarlane were appointed as new directors of the Company. The Board of Directors determined that these two new directors are independent directors. In connection with those appointments and in conformity with its corporate policy of indemnifying all directors and officers, the Board of Directors also agreed at that time to enter into indemnification agreements for all directors and officers of the Company, namely, each existing director of the Company, Dr. Arnold S. Lippa, Jeff E. Margolis, and Robert N. Weingarten, each of whom is also an officer of the Company, and with the two new directors. Pursuant to the indemnity agreements, the Company will indemnify each director or officer when such individual is a party or threatened to become a party, by virtue of being a director or officer of the Company, from the costs and expenses, fines and certain other amounts in connection with certain proceedings, including proceedings in the right of the Company, so long as such director or officer acted in good faith and reasonably believed that such actions were not in the best interests of the Company.

Appointment of Chairman of the Company's Scientific Advisory Board

On September 18, 2014, John Greer, Ph.D. was appointed to the position of Chairman of the Company's Scientific Advisory Board, which is currently being formed. Dr. Greer is the Director of the Neuroscience and Mental Health Institute at the University of Alberta. He holds two grants regarding research into neuromuscular control of breathing and is the inventor on the use patents licensed by the Company with respect to ampakines. Dr. Greer is expected to assist the Company in forming the rest of its Scientific Advisory Board.

In connection with the appointment of Dr. Greer as Chairman of the Company's Scientific Advisory Board on September 18, 2014, the Board of Directors awarded 2,000,000 shares of common stock of the Company to Dr. Greer (through his wholly-owned consulting company, Progress Scientific, Inc.), vesting 25% upon appointment, 25% on September 30, 2014, 25% on December 31, 2014, and 25% on March 31, 2015. This award was made under the Company's 2014 Equity, Equity-Linked and Equity Derivative Incentive Plan.

National Institute on Drug Abuse Grant

On September 18, 2014, the Company entered into a contract with the National Institute on Drug Abuse, a division of the National Institutes of Health. The funding under the contract is a Phase 1 award granted under the Small Business Innovation Research Funding Award Program. The purpose of the project is to determine the most useful injectable route of administration for CX1942, the Company's proprietary, soluble ampakine molecule, a potential rescue medication for drug-induced respiratory depression and lethality. The grant is entitled "Novel Treatment of Drug-Induced Respiratory Depression" and is valued at $148,583, which is to be paid in increments over the expected six-month duration of the study which commenced in October 2014. The study will measure the potency, latency to onset and duration of action of CX1942 administered to rats. The Company anticipates that the data obtained from the study will be used to finalize preclinical studies in preparation for initiating Phase 1 clinical studies. The preclinical studies are being performed in collaboration with Dr. David Fuller of the University of Florida and Dr. John Greer of the University of Alberta, Chairman of the Company's Scientific Advisory Board.

Appointment of Senior Vice President of Research and Development

Richard Purcell was appointed as the Company's Senior Vice President of Research and Development effective October 15, 2014. Mr. Purcell's commitment to the Company is for 30 hours per week in order to allow him to comply with his previous professional commitments. Mr. Purcell provides his services to the Company through his consulting firm, DNA Healthlink, Inc., with which the Company has contracted for his services.

Going Concern

The Company's consolidated financial statements have been presented on the basis that it is a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. The Company has incurred net losses of $2,707,535 and $1,201,457 for the fiscal years ended December 31, 2014 and 2013, respectively, negative operating cash flows of $885,869 and $182,435 for the fiscal years ended December 31, 2014 and 2013, respectively, and expects to continue to incur net losses and negative operating cash flows for several more years. As a result, management and the Company's auditors believe that there is substantial doubt about the Company's ability to continue as a going concern.

The Company is currently, and has for some time, been in significant financial distress. It has limited cash resources and current assets and has no ongoing source of revenue. Beginning in late 2012, the Company's business activities were reduced to minimal levels, and the prior Board of Directors of the Company, which was removed by the written consent of stockholders holding a majority of the outstanding shares on March 22, 2013, had retained bankruptcy counsel to assist the Company in preparations to file for liquidation under Chapter 7 of the United States Bankruptcy Code. New management, which was appointed during March and April 2013, has evaluated the status of numerous aspects of the Company's existing business and obligations, including, without limitation, debt obligations, financial requirements, intellectual property, licensing agreements, legal and patent matters and regulatory compliance, and has raised new capital to fund its business activities.

From June 2013 through March 2014, the Company's Chairman and Chief Executive Officer advanced short-term loans to the Company aggregating $150,000 in order to meet its minimum operating needs. In March and April 2014, the Company completed a private placement by selling 928.5 shares of its Series G 1.5% Convertible Preferred Stock for gross proceeds of $928,500 and repaid the aggregate advances. The Company's Chairman and Chief Executive Officer invested $250,000 in the Series G 1.5% Convertible Preferred Stock private placement. During November and December 2014, the Company sold short-term convertible notes (with warrants) in an aggregate principal amount of $369,500 to various accredited investors and an additional $210,000 of such short-term convertible notes (with warrants) in February 2015. The Company terminated this financing effective February 18, 2015.

The Company will need to continue to raise additional capital to be able to pay its liabilities and fund its business activities going forward. As a result of the Company's current financial situation, the Company has limited access to external sources of debt and equity financing. Accordingly, there can be no assurances that the Company will be able to secure additional financing in the amounts necessary to fully fund its operating and debt service requirements. If the Company is unable to access sufficient cash resources, the Company may be forced to discontinue its operations entirely and liquidate.

Recent Accounting Pronouncements

In April 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update No. 2014-08 (ASU 2014-08), *Presentation of Financial Statements (Topic 205) and Property, Plant and Equipment (Topic 360)*. ASU 2014-08 amends the requirements for reporting discontinued operations and requires additional disclosures about discontinued operations. Under ASU 2014-08, only disposals representing a strategic shift in operations or that have a major effect on the Company's operations and financial results should be presented as discontinued operations. ASU 2014-08 is effective for annual periods beginning after December 15, 2014. As the Company is engaged in research and development activities, the Company does not expect the adoption of this guidance to have any impact on the Company's financial statement presentation or disclosures.

In May 2014, the FASB issued Accounting Standards Update No. 2014-09 (ASU 2014-09), *Revenue from Contracts with Customers*. ASU 2014-09 will eliminate transaction- and industry-specific revenue recognition guidance under current GAAP and replace it with a principle based approach for determining revenue recognition. ASU 2014-09 will require that companies recognize revenue based on the value of transferred goods or services as they occur in the contract. ASU 2014-09 also will require additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. ASU 2014-09 is effective for reporting periods beginning after December 15, 2016, and early adoption is not permitted. Entities can transition to the standard either retrospectively or as a cumulative-effect adjustment as of the date of adoption. As the Company does not expect to have any operating revenues for the foreseeable future, the Company does not expect the adoption of this guidance to have any impact on the Company's financial statement presentation or disclosures.

In June 2014, the FASB issued Accounting Standards Update No. 2014-10 (ASU 2014-10)*, Development Stage Entities (Topic 915): Elimination of Certain Financial Reporting Requirements, Including an Amendment to Variable Interest Entities Guidance in Topic 810, Consolidation*. ASU 2014-10 eliminated the requirement to present inception-to-date information about income statement line items, cash flows, and equity transactions, and clarifies how entities should disclose the risks and uncertainties related to their activities. ASU 2014-10 also eliminated an exception provided to development stage entities in Consolidations (ASC Topic 810) for determining whether an entity is a variable interest entity on the basis of the amount of investment equity that is at risk. The presentation and disclosure requirements in Topic 915 will no longer be required for interim and annual reporting periods beginning after December 15, 2014, and the revised consolidation standards will take effect in annual periods beginning after December 15, 2015. Early adoption is permitted. The adoption of ASU 2014-10 is not expected to have any impact on

the Company's financial statement presentation or disclosures.

In August 2014, the FASB issued Accounting Standards Update No. 2014-15 (ASU 2014-15), *Presentation of Financial Statements – Going Concern (Subtopic 205-10)*. ASU 2014-15 provides guidance as to management's responsibility to evaluate whether there is substantial doubt about an entity's ability to continue as a going concern and to provide related footnote disclosures. In connection with preparing financial statements for each annual and interim reporting period, an entity's management should evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the entity's ability to continue as a going concern within one year after the date that the financial statements are issued (or within one year after the date that the financial statements are available to be issued when applicable). Management's evaluation should be based on relevant conditions and events that are known and reasonably knowable at the date that the financial statements are issued (or at the date that the financial statements are available to be issued when applicable). Substantial doubt about an entity's ability to continue as a going concern exists when relevant conditions and events, considered in the aggregate, indicate that it is probable that the entity will be unable to meet its obligations as they become due within one year after the date that the financial statements are issued (or available to be issued). ASU 2014-15 is effective for the annual period ending after December 15, 2016, and for annual periods and interim periods thereafter. Early application is permitted. The adoption of ASU 2014-15 is not expected to have any impact on the Company's financial statement presentation or disclosures.

In January 2015, the FASB issued Accounting Standards Update No. 2015-01 (ASU 2015-01), *Income Statement – Extraordinary and Unusual Items (Subtopic 225-20).* ASU 2015-01 eliminates from GAAP the concept of extraordinary items. Subtopic 225-20, Income Statement—Extraordinary and Unusual Items, required that an entity separately classify, present, and disclose extraordinary events and transactions. Presently, an event or transaction is presumed to be an ordinary and usual activity of the reporting entity unless evidence clearly supports its classification as an extraordinary item. Paragraph 225-20-45-2 contains the following criteria that must both be met for extraordinary classification: (1) Unusual nature. The underlying event or transaction should possess a high degree of abnormality and be of a type clearly unrelated to, or only incidentally related to, the ordinary and typical activities of the entity, taking into account the environment in which the entity operates. (2) Infrequency of occurrence. The underlying event or transaction should be of a type that would not reasonably be expected to recur in the foreseeable future, taking into account the environment in which the entity operates. If an event or transaction meets the criteria for extraordinary classification, an entity is required to segregate the extraordinary item from the results of ordinary operations and show the item separately in the income statement, net of tax, after income from continuing operations. The entity also is required to disclose applicable income taxes and either present or disclose earnings-per-share data applicable to the extraordinary item. ASU 2015-01 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2015. A reporting entity may apply the guidance prospectively. A reporting entity also may apply the guidance retrospectively to all prior periods presented in the financial statements. Early adoption is permitted provided that the guidance is applied from the beginning of the fiscal year of adoption. The adoption of ASU 2015-01 is not expected to have any impact on the Company’s financial statement presentation or disclosures.

In February 2015, the FASB issued Accounting Standards Update No. 2015-02 (ASU 2015-02), *Consolidation (Topic 810).* ASU 2015-02 changes the guidance with respect to the analysis that a reporting entity must perform to determine whether it should consolidate certain types of legal entities. All legal entities are subject to reevaluation under the revised consolidation mode. ASU 2015-02 affects the following areas: (1) Limited partnerships and similar legal entities. (2) Evaluating fees paid to a decision maker or a service provider as a variable interest. (3) The effect of fee arrangements on the primary beneficiary determination. (4) The effect of related parties on the primary beneficiary determination. (5) Certain investment funds. ASU 2015-02 is effective for public business entities for fiscal years, and for interim periods within those fiscal years, beginning after December 15, 2015. Early adoption is permitted, including adoption in an interim period. If an entity early adopts the guidance in an interim period, any adjustments should be reflected as of the beginning of the fiscal year that includes that interim period. A reporting entity may apply the amendments in this guidance using a modified retrospective approach by recording a cumulative-effect adjustment to equity as of the beginning of the fiscal year of adoption. A reporting entity also may apply the amendments retrospectively. The adoption of ASU 2015-02 is not expected to have any impact on the Company’s financial statement presentation or disclosures.

Management does not believe that any other recently issued, but not yet effective, authoritative guidance, if currently adopted, would have a material impact on the Company’s financial statement presentation or disclosures.

Concentration of Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash and cash equivalents. The Company limits its exposure to credit risk by investing its cash with high credit quality financial institutions.

The Company’s research and development efforts and potential products rely on licenses from research institutions and if the Company loses access to these technologies or applications, its business could be substantially impaired.

Under a patent license agreement with The Governors of the University of Alberta, the Company has exclusive rights to the use of certain ampakine compounds to prevent and treat respiratory depression induced by opiate analgesics, barbiturates and anesthetic and sedative agents.

On May 8, 2007, the Company entered into a license agreement, as subsequently amended, with the University of Alberta granting the Company exclusive rights to practice patents held by the University of Alberta claiming the use of ampakines for the treatment of various respiratory disorders. The Company agreed to pay the University of Alberta a licensing fee and a patent issuance fee, which were paid, and prospective payments consisting of a royalty on net sales, sublicense fee payments, maintenance payments and milestone payments. The prospective maintenance payments commence on the enrollment of the first patient into the first Phase 2B clinical trial and increase upon the successful completion of the Phase 2B clinical trial. As the Company does not at this time anticipate scheduling a Phase 2B clinical trial, no maintenance payments are currently due and payable to the University of Alberta. In addition, no other prospective payments are currently due and payable to the University of Alberta.

Through the merger with Pier, the Company gained access to the License Agreement that Pier had entered into with the University of Illinois on October 10, 2007. The Pier License Agreement covered certain patents and patent applications in the United States and other countries claiming the use of certain compounds referred to as cannabinoids for the treatment of sleep related breathing disorders (including sleep apnea), of which dronabinol is a specific example of one type of cannabinoid. Dronabinol is a synthetic derivative of the naturally occurring substance in the cannabis plant, otherwise known as Δ9-THC (Δ9-tetrahydrocannabinol). Dronabinol is currently approved by the FDA and is sold generically for use in refractory chemotherapy-induced nausea and vomiting, as well as for anorexia in patients with AIDS. Pier's business plan was to determine whether dronabinol would significantly improve subjective and objective clinical measures in patients with obstructive sleep apnea. In addition, Pier intended to evaluate the feasibility and comparative efficacy of a proprietary formulation of dronabinol. The Pier License Agreement was terminated effective March 21, 2013 due to the Company's failure to make a required payment and on June 27, 2014, the Company entered into a new license agreement with the University of Illinois, the material terms of which were similar to the Pier License Agreement that had been terminated. If the Company is unable to comply with the terms of the new license agreement, such as required payments thereunder, the Company risks the new license agreement being terminated.

Critical Accounting Policies and Estimates

The Company prepared its consolidated financial statements in accordance with accounting principles generally accepted in the United States of America. The preparation of these consolidated financial statements requires the use of estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amount of revenues and expenses during the reporting period. Management periodically evaluates the estimates and judgments made. Management bases its estimates and judgments on historical experience and on various factors that are believed to be reasonable under the circumstances. Actual results may differ from these estimates as a result of different assumptions or conditions.

The following critical accounting policies affect the more significant judgments and estimates used in the preparation of the Company's consolidated financial statements.

Deferred and Capitalized Financing Costs

Costs incurred in connection with ongoing financing activities, including legal and other professional fees, cash finder's and placement agent fees, and escrow agent fees, are deferred until the related financing is either completed or abandoned.

Costs related to completed debt financings are capitalized on the balance sheet and amortized over the term of the related debt agreements. Amortization of these costs is calculated on the straight-line basis, which approximates the effective interest method, and is charged to interest expense in the consolidated statements of operations. Costs related to completed equity financings are charged directly to additional paid-in capital. Costs related to abandoned financings are charged to operations.

Series G 1.5% Convertible Preferred Stock

The Company accounted for the beneficial conversion features associated with the Series G 1.5% Convertible Preferred Stock in accordance with Accounting Standards Codification ("ASC") 470-20, Accounting for Debt with Conversion and Other Options. The Company calculated a deemed dividend on the Series G 1.5% Convertible Preferred Stock of $8,376,719 in March 2014 and $1,673,127 in April 2014, which equals the amount by which the estimated fair value of the common stock issuable upon conversion of the issued Series G 1.5% Convertible Preferred Stock exceeded the proceeds from such issuances. The deemed dividend on the Series G 1.5% Convertible Preferred Stock was amortized on the straight-line basis from the respective issuance dates through the earliest conversion date of June 16, 2014, in accordance with ASC 470-20. The difference between the amortization of the deemed dividend calculated based on the straight-line method and the effective yield method was not material. The amortization of the deemed dividend for the year ended December 31, 2014 was $10,049,846.

10% Convertible Notes Payable

The Company has accounted for the beneficial conversion features with respect to the sale of the convertible notes and the issuance of the warrants in accordance with ASC 470-20, Accounting for Debt with Conversion and Other Options.

The Company considered the face value of the convertible notes to be representative of their fair value. The Company determined the fair value of the warrants based on the Black-Scholes option-pricing model. The relative fair value method generated respective fair values for each of the convertible notes and the warrants of approximately 52% for the convertible notes and approximately 48% for the warrants. Once these values were determined, the fair value of the warrants of $176,549 and the fair value of the beneficial conversion feature of $192,951 (which were calculated based on the effective conversion price) were recorded as a reduction to the face value of the promissory note obligation. As a result, this aggregate debt discount reduced the carrying value of the convertible notes to zero at each issuance date. The excess amount generated from this calculation was not recorded, as the carrying value of a promissory note cannot be reduced below zero. The aggregate debt discount is being amortized as interest expense over the life of the promissory notes. The difference between the amortization of the debt discount calculated based on the straight-line method and the effective yield method was not material.

The cash fees paid to finders and for legal costs were deferred and capitalized as deferred offering costs and are being amortized to interest expense over the life of the promissory notes. The finder's warrants were considered as an additional cost of the offering and were included in deferred offering costs at fair value. The difference between the amortization of the deferred offering costs calculated based on the straight-line method and the effective yield method was not material.

Research Grants

The Company recognizes revenues from research grants as earned based on the percentage-of-completion method of accounting and issues invoices for contract amounts billed based on the terms of the grant agreement. Revenues recorded under research grants in excess of amounts earned are classified as unearned grant revenue liability in the Company's consolidated balance sheet. Grant receivable reflects contractual amounts due and payable under the grant agreement. Payment of grant receivables are based on progress reports provided by the Company. As of December 31, 2014, the Company was current in filing the required progress reports, as a result of which no allowance for uncollectible amounts was considered necessary.

Research grants are generally funded and paid through government or institutional programs. Amounts received under research grants are nonrefundable, regardless of the success of the underlying research project, to the extent that such amounts are expended in accordance with the approved grant project. During the year ended December 31, 2014, the Company had research grant revenues of $61,667. At December 31, 2014, the Company had a grant receivable of $48,000 and unearned grant revenue of $34,333. The Company had no research grant revenues during the year ended December 31, 2013.

Stock-Based Compensation

The Company periodically issues common stock and stock options to officers, directors, Scientific Advisory Board members and consultants for services rendered. Such issuances vest and expire according to terms established at the issuance date.

The Company accounts for stock-based payments to officers and directors by measuring the cost of services received in exchange for equity awards based on the grant date fair value of the awards, with the cost recognized as compensation expense on the straight-line basis in the Company's financial statements over the vesting period of the awards. The Company accounts for stock-based payments to Scientific Advisory Board members and consultants by determining the value of the stock compensation based upon the measurement date at either (a) the date at which a performance commitment is reached or (b) at the date at which the necessary performance to earn the equity instruments is complete.

Stock grants, which are generally time vested, are charged to operations at the grant date fair value ratably over the vesting period.

Options granted to members of the Company's Scientific Advisory Board and to outside consultants are revalued each reporting period until vested to determine the amount to be recorded as an expense in the respective period. As the options vest, they are valued on each vesting date and an adjustment is recorded for the difference between the value already recorded and the then current value on the date of vesting.

The fair value of stock options is determined utilizing the Black-Scholes option-pricing model, and is affected by several variables, the most significant of which are the life of the equity award, the exercise price of the security as compared to the fair market value of the common stock on the grant date, and the estimated volatility of the common stock over the term of the equity award. Estimated volatility is based on the historical volatility of the Company's common stock. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant. The fair value of common stock is determined by reference to the quoted market price of the Company's common stock.

The Company recognizes the fair value of stock-based compensation in general and administrative costs and in research and development costs, as appropriate, in the Company's consolidated statements of operations.

The Company issues new shares to satisfy stock option exercises.

Research and Development Costs

Research and development costs consist primarily of fees paid to consultants and outside service providers and organizations (including research institutes at universities), patent fees and costs, and other expenses relating to the acquisition, design, development and testing of the Company's treatments and product candidates.

Research and development costs incurred by the Company under research grants are expensed as incurred over the life of the underlying contracts, unless the terms of the contract indicate that a different expensing schedule is more appropriate.

The Company reviews the status of its research and development contracts on a quarterly basis.

License Agreements

Obligations incurred with respect to mandatory payments provided for in license agreements are recognized ratably over the appropriate period, as specified in the underlying license agreement, and are recorded as liabilities in the Company's consolidated balance sheet, with a corresponding charge to research and development costs in the Company's consolidated statement of operations. Obligations incurred with respect to milestone payments provided for in license agreements are recognized when it is probable that such milestone will be reached, and are recorded as liabilities in the Company's consolidated balance sheet, with a corresponding charge to research and development costs in the Company's consolidated statement of operations. Payments of such liabilities are made in the ordinary course of business.

Patent Costs

Due to the significant uncertainty associated with the successful development of one or more commercially viable products based on the Company's research efforts and any related patent applications, all patent costs, including patent-related legal and filing fees, are expensed as incurred.

Results of Operations

Years Ended December 31, 2014 and 2013

Revenues. During the year ended December 31, 2014, the Company had research grant revenues of $61,667 related to a contract with the National Institute on Drug Abuse entered into on September 18, 2014. The Company had no research grant revenues during the year ended December 31, 2013.

General and Administrative. For the year ended December 31, 2014, general and administrative expenses were $3,823,434, an increase of $2,890,461, as compared to $932,973 for the year ended December 31, 2013. The increase in general and administrative expenses for the year ended December 31, 2014, as compared to the year ended December 31, 2013, is primarily a result of stock-based compensation of $3,131,500 in 2014. The Company also incurred increased general and administrative costs in the year ended December 31, 2014, as compared to the year ended December 31, 2013, as a result of professional fees and other costs incurred in connection with management's continuing efforts to reestablish and update the Company's accounting systems and records and prepare various delinquent financial reports and public filings.

For the year ended December 31, 2013, general and administrative expenses included accrued severance costs of $585,000 relating to the termination of certain corporate officers in March 2013 and accrued legal fees of $85,000 to reimburse Aurora Capital LLC for its legal fees incurred in conjunction with the removal of the Company's former Board of Directors on March 22, 2013.

For the year ended December 31, 2014, stock-based compensation costs included in general and administrative expenses aggregated $3,131,500, of which $2,811,500 was primarily to officers and directors as compensation for services rendered. None of these individuals receiving stock-based compensation had previously received any compensation from the Company since joining the Company in March and April 2013. There were no stock-based compensation costs included in general and administrative expenses during the year ended December 31, 2013.

Research and Development. For the year ended December 31, 2014, research and development expenses were $591,768, an increase of $384,857, as compared to $206,911 for the year ended December 31, 2013. The increase in research and development expenses for the year ended December 31, 2014, as compared to the year ended December 31, 2013, is primarily a result of stock-based compensation of $99,000 to Dr. John Greer, Ph.D. in connection with his appointment to the position of Chairman of the Company's Scientific Advisory Board, licensing costs incurred with respect to the University of Illinois 2014 Exclusive License Agreement executed on June 27, 2014 of $90,840, offset by the discontinuance of licensing costs relating to the licensing agreement with the University of California, Irvine that was terminated on April 15, 2013 of $61,000, an increase of $164,662 with respect to patent legal fees, consulting

fees of $25,905 paid to the Company's Senior Vice President of Research and Development appointed on October 15, 2014, and salaries and other costs incurred in connection with work performed relating to the grant from the National Institute on Drug Abuse entered into on September 18, 2014.

For the year ended December 31, 2014, stock-based compensation costs included in research and development expenses aggregated $99,000. There were no stock-based compensation costs included in research and development expenses during the year ended December 31, 2013.

Gain on Settlements with Former Management. During the year ended December 31, 2014, the Company recorded a gain of $1,038,270 as a result of settlement agreements with four former executives. The Company settled potential claims totaling $1,336,264 for cash payments of $118,084 and the issuance of stock options to purchase 4,300,000 shares of common stock exercisable at $0.04 per share for periods ranging from five to ten years. The stock options were valued pursuant to the Black-Scholes option-pricing model at $179,910.

Gain on Settlements with Former Service Providers. During the year ended December 31, 2014, the Company recorded a gain of $393,590 as a result of settlement agreements with two former service providers. The Company settled potential claims totaling $496,514 for cash payments of $60,675 plus the issuance of stock options to purchase 1,250,000 shares of common stock exercisable at $0.04 per share for a period of five years. The stock options were valued pursuant to the Black-Scholes option-pricing model at $42,250.

Gain on Settlement of Project Advance. During the year ended December 31, 2014, the Company recorded a gain of $287,809 as the result of a settlement agreement reached with the Institute for the Study of Aging on September 2, 2014. The Company settled a claim of $336,809 through the issuance of 1,000,000 shares of the Company's common stock valued at $49,000.

Interest Expense. During the year ended December 31, 2014, interest expense was $117,306 (including $48,692 to related parties), an increase of $60,967, as compared to $56,339 (including $48,688 to related parties) for the year ended December 31, 2013. The increase in interest expense resulted primarily from costs associated with the Convertible Note and Warrant Purchase Agreement entered into on November 5, 2014. Such costs charged to interest expense consisted of the amortization of capitalized financing costs of $15,648, the amortization of debt discounts of $46,150, and accrued interest of $4,094. During the year ended December 31, 2014, interest expense decreased, as compared to the year ended December 31, 2013, due to the discontinuance of interest relating to the licensing agreement with the University of California, Irvine that was formally terminated on April 15, 2013 and the discontinuance of interest relating to the project advance settled on September 2, 2014.

Gain on Settlement of Office Lease. During the three months ended December 31, 2012, the Company substantially vacated its operating facility and abandoned its furniture, equipment and leasehold improvements. In May 2013, the Company received notice that it had been sued in the Superior Court of California in a complaint filed on March 28, 2013 by its former landlord, PPC Irvine Center Investment, LLC, seeking among other things, $57,535 in past due rent, termination of the lease agreement, and reasonable attorney's fees. On May 23, 2013, a settlement was reached with the landlord that provided for the Company to relinquish its security deposit in the amount of $29,545, transfer title to its remaining furniture, equipment and leasehold improvements, and pay an additional $26,000. The transfer of the Company's furniture, equipment and leasehold improvements resulted in a loss of $39,126, which was recorded at December 31, 2012. During the year ended December 31, 2013, the Company recorded a gain of $1,990 with respect to the final disposition of this matter.

Foreign Currency Transaction Gain (Loss). Foreign currency transaction gain was $43,637 for the year ended December 31, 2014, as compared to a foreign currency transaction loss of $7,224 for the year ended December 31, 2013 The foreign currency transaction gain (loss) relates to the $399,774 loan from Samyang made in June 2012, which is denominated in the South Korean Won.

Net Loss. For the year ended December 31, 2014, the Company incurred a net loss of $2,707,535, as compared to a net loss of $1,201,457 for the year ended December 31, 2013.

Amortization of Deemed Dividend on Series G 1.5% Convertible Preferred Stock. For the year ended December 31, 2014, amortization of the deemed dividend on the shares of Series G 1.5% Convertible Preferred Stock issued in the March 18, 2014 and the April 17, 2014 closings was $10,049,846.

Dividend on Series G 1.5% Convertible Preferred Stock. For the year ended December 31, 2014, dividends accrued on the shares of Series G 1.5% Convertible Preferred Stock issued in the March 18, 2014 and the April 17, 2014 closings were $10,926.

Net Loss Attributable to Common Stockholders. For the year ended December 31, 2014, the Company incurred a net loss attributable to common stockholders of $12,768,307, as compared to a net loss attributable to common stockholders of $1,201,457 for the year ended December 31, 2013.

Liquidity and Capital Resources – December 31, 2014

The Company's consolidated financial statements have been presented on the basis that it is a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. The Company has incurred net losses of $2,707,535 and $1,201,457 for the fiscal years ended December 31, 2014 and 2013, respectively, negative operating cash flows of $885,869 and $182,435 for the fiscal years ended December 31, 2014 and 2013, respectively, and expects to continue to incur net losses and negative operating cash flows for several more years. As a result, management and the Company's auditors believe that there is substantial doubt about the Company's ability to continue as a going concern.

At December 31, 2014, the Company had a working capital deficit of $2,280,035, as compared to a working capital deficit of $4,188,424 at December 31, 2013, reflecting an increase in working capital of $1,908,389 for the year ended December 31, 2014. At December 31, 2014, the Company had cash aggregating $162,752, as compared to $14,352 at December 31, 2013, reflecting an increase in cash of $148,400 for the year ended December 31, 2014. The increase in cash during the year ended December 31, 2014 was primarily the result of the proceeds from the issuance of the Series G 1.5% Convertible Preferred Stock and the Convertible Note and Warrant Financing. The increase in working capital during the year ended December 31, 2014 was impacted by the increase in cash described above and the gains recognized in connection with the settlement agreements reached with four former executives, two former service providers and an obligation relating to a project advance.

The Company is currently, and has for some time, been in significant financial distress. It has limited cash resources and current assets and has no ongoing source of revenue. Beginning in late 2012, the Company's business activities were reduced to minimal levels, and the prior Board of Directors of the Company, which was removed by the written consent of stockholders holding a majority of the outstanding shares on March 22, 2013, had retained bankruptcy counsel to assist the Company in preparations to file for liquidation under Chapter 7 of the United States Bankruptcy Code. New management, which was appointed during March and April 2013, has evaluated the status of numerous aspects of the Company's existing business and obligations, including, without limitation, debt obligations, financial requirements, intellectual property, licensing agreements, legal and patent matters and regulatory compliance, and has raised new capital to fund its business activities.

From June 2013 through March 2014, the Company's Chairman and Chief Executive Officer advanced short-term loans to the Company aggregating $150,000 in order to meet its minimum operating needs. In March and April 2014, the Company completed a private placement by selling 928.5 shares of its Series G 1.5% Convertible Preferred Stock for gross proceeds of $928,500 and repaid the aggregate advances. The Company's Chairman and Chief Executive Officer invested $250,000 in the Series G 1.5% Convertible Preferred Stock private placement. During November and December 2014, the Company sold short-term convertible notes (with warrants) in an aggregate principal amount of $369,500 to various accredited investors and an additional $210,000 of such short-term convertible notes (with warrants) in February 2015. The Company terminated this financing effective February 18, 2015.

The Company will need to continue to raise additional capital to be able to pay its liabilities and fund its business activities going forward. As a result of the Company's current financial situation, the Company has limited access to external sources of debt and equity financing. Accordingly, there can be no assurances that the Company will be able to secure additional financing in the amounts necessary to fully fund its operating and debt service requirements. If the Company is unable to access sufficient cash resources, the Company may be forced to discontinue its operations entirely and liquidate.

Operating Activities. For the year ended December 31, 2014, operating activities utilized cash of $885,869, as compared to utilizing cash of $182,435 for the year ended December 31, 2013, to support the Company's ongoing operations, including legal and accounting fees and costs related to the preparation of delinquent financial statements and SEC filings, research and development activities, licensing fees, patent fees and related legal costs, and settlement

agreements with former management and service providers. Included in the $885,869 of cash utilized during the year ended December 31, 2014 was $178,759 of cash used to fund, in part, settlement agreements with four former executives and two former professional service providers.

Investing Activities. For the year ended December 31, 2014, investing activities utilized cash of $18,400 for the acquisition of equipment. There were no investing activities during the year ended December 31, 2013.

Financing Activities. For the year ended December 31, 2014, financing activities generated cash of $1,052,669, consisting of $928,500 in proceeds from the sale of the Series G 1.5% Convertible Preferred Stock, $369,500 in proceeds from the Convertible Note and Warrant Financing, and $75,000 in proceeds from notes payable issued to the Company’s Chairman, offset by the payment of financing costs of $92,921 relating to the sale of the Series G 1.5% Convertible Preferred Stock, the payment of financing costs of $77,410 relating to the Convertible Note and Warrant Financing, and the repayment of notes payable to the Chairman totaling $150,000. For the year ended December 31, 2013, financing activities generated cash of $44,608, consisting of $75,000 in proceeds from notes payable issued to the Company’s Chairman and $4,728 from related party short-swing trading profits, offset by the payment of financing costs of $35,120 relating to the sale of the Series G 1.5% Convertible Preferred Stock that was completed in 2014.

Principal Commitments

University of Alberta License Agreement

On May 8, 2007, the Company entered into a license agreement, as amended, with the University of Alberta granting the Company exclusive rights to practice patents held by the University of Alberta claiming the use of ampakines for the treatment of various respiratory disorders. The Company agreed to pay the University of Alberta a licensing fee and a patent issuance fee, which were paid, and prospective payments consisting of a royalty on net sales, sublicense fee payments, maintenance payments and milestone payments. The prospective maintenance payments commence on the enrollment of the first patient into the first Phase 2B clinical trial and increase upon the successful completion of the Phase 2B clinical trial. As the Company does not at this time anticipate scheduling a Phase 2B clinical trial, no maintenance payments are currently due and payable to the University of Alberta. In addition, no other prospective payments are currently due and payable to the University of Alberta.

University of Illinois 2014 Exclusive License Agreement

On June 27, 2014, the Company entered into an Exclusive License Agreement (the "2014 License Agreement") with the University of Illinois, the material terms of which were similar to the License Agreement between the parties that had been previously terminated on March 21, 2013. The 2014 License Agreement became effective on September 18, 2014, upon the completion of certain conditions set forth in the 2014 License Agreement, including (i) the payment by the Company of a $25,000 licensing fee, (ii) the payment by the Company of certain outstanding patent costs (not to exceed $16,000), and (iii) the assignment to the University of Illinois of certain rights the Company holds in certain patent applications, all of which conditions were fulfilled. In exchange for certain milestone and royalty payments, the 2014 License Agreement granted the Company (i) exclusive rights to several issued and pending patents in numerous jurisdictions and (ii) the non-exclusive right to certain technical information that is generated by the University of Illinois in connection with certain clinical trials as specified in the 2014 License Agreement, all of which relate to the use of cannabinoids for the treatment of sleep related breathing disorders. The Company is developing dronabinol (Δ9-tetrahydrocannabinol), a cannabinoid, for the treatment of OSA, the most common form of sleep apnea.

National Institute on Drug Abuse Grant

On September 18, 2014, the Company entered into a contract with the National Institute on Drug Abuse, a division of the National Institutes of Health. The funding under the contract is a Phase 1 award granted under the Small Business Innovation Research Funding Award Program. The purpose of the project is to determine the most useful injectable route of administration for CX1942, the Company's proprietary, soluble ampakine molecule, a potential rescue medication for drug-induced respiratory depression and lethality. The grant is entitled "Novel Treatment of

Drug-Induced Respiratory Depression" and is valued at $148,583, which is to be paid in increments over the expected six-month duration of the study which commenced in October 2014. The study will measure the potency, latency to onset and duration of action of CX1942 administered to rats. The Company anticipates that the data obtained from the study will be used to determine the designs of those preclinical studies necessary for initiating Phase 1 clinical studies. The preclinical studies are being performed in collaboration with Dr. David Fuller of the University of Florida and Dr. John Greer of the University of Alberta, Chairman of the Company's Scientific Advisory Board.

Senior Vice President of Research and Development

Richard Purcell was appointed as the Company's Senior Vice President of Research and Development effective October 15, 2014. Mr. Purcell's commitment to the Company is for 30 hours per week in order to allow him to comply with his previous professional commitments. Mr. Purcell provides his services to the Company on a month-to-month basis through his consulting firm, DNA Healthlink, Inc., with which the Company has contracted for his services, for a monthly cash fee of $12,500. The Company has also agreed to issue to Mr. Purcell additional compensation in the form of 2,000,000 shares of the Company's common stock, with 25% of such stock grant vesting and issuable every three months after the date of his appointment (i.e., on January 15, 2015, April 15, 2015, July 15, 2015 and October 15, 2015), subject to Mr. Purcell's continued relationship with the Company on each of the vesting dates. The stock grant is being made under the Company's 2014 Equity, Equity-Linked and Equity Derivative Incentive Plan.

Off-Balance Sheet Arrangements

At December 31, 2014, the Company did not have any transactions, obligations or relationships that could be considered off-balance sheet arrangements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not applicable for smaller reporting companies.

Item 8. Financial Statements and Supplementary Data

Our financial statements and other information required by this item are set forth herein in a separate section beginning with the Index to Consolidated Financial Statements on page F-1.

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

Not applicable.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

The Company maintains disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act") that are designed to ensure that information required to be disclosed in the reports that the Company files with the Securities and Exchange Commission (the "SEC") under the Exchange Act 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 the Company's management, including its Chief Executive Officer and Chief Financial Officer, to allow for timely decisions regarding required

disclosures.

The Company carried out an evaluation, under the supervision and with the participation of its management, consisting of its principal executive officer and principal financial officer, of the effectiveness of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act). Based upon that evaluation, the Company's principal executive officer and principal financial officer concluded that, as of the end of the period covered in this Annual Report on Form 10-K, the Company's disclosure controls and procedures were not effective to ensure that information required to be disclosed in reports filed under the Exchange Act is recorded, processed, summarized and reported within the required time periods and is accumulated and communicated to the Company's management, consisting of the Company's principal executive officer and principal financial officer, to allow timely decisions regarding required disclosure. The Company failed to complete and file various periodic reports in 2012, 2013 and 2014 in a timely manner because the Company's accounting and financial staff had resigned by October 26, 2012 and its financial and accounting systems had been essentially shut-down at December 31, 2012.

New management, which joined the Company in March and April 2013, has been focusing on developing replacement controls and procedures that are adequate to ensure that information required to be disclosed in reports filed under the Exchange Act is recorded, processed, summarized and reported within the required time periods and is accumulated and communicated to the Company's management, consisting of the Company's principal executive officer and principal financial officer, to allow timely decisions regarding required disclosure. New management has instituted a program to reestablish the Company's accounting and financial staff and install new accounting and internal control systems, and has retained accounting personnel, established accounting and internal control systems, addressed the preparation of delinquent financial statements, and had been diligently working to bring delinquent SEC filings current as promptly as reasonably possible under existing circumstances. However, as of the date of the filing of this Annual Report on Form 10-K, the Company had not yet completed the process to establish adequate internal controls over financial reporting.

The Company's management, consisting of its principal executive officer and principal financial officer, does not expect that its disclosure controls and procedures or its internal controls will prevent all error or fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Furthermore, the design of a control system must reflect the fact that there are resource constraints and the benefits of controls must be considered relative to their costs. Due to the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. In addition, as conditions change over time, so too may the effectiveness of internal controls. However, management believes that the financial statements included in this Annual Report on Form 10-K fairly present, in all material respects, the Company's financial condition, results of operations and cash flows for the periods presented.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control over financial reporting is designed to ensure that material information regarding our operations is made available to management and the board of directors to provide them reasonable assurance that the published financial statements are fairly presented. There are limitations inherent in any internal control, such as the possibility of human error and the circumvention or overriding of controls. As a result, even effective internal controls can provide only reasonable assurance with respect to financial statement preparation. As conditions change over time so too may the effectiveness of internal controls.

Our management, consisting of our Chief Executive Officer and our Chief Financial Officer, has evaluated our internal control over financial reporting as of December 31, 2014 based on the framework in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations ("COSO") of the Treadway Commission, as subsequently updated on May 14, 2013, and which became effective after December 15, 2014. Based on this assessment, our management has concluded that material weaknesses in the Company's internal control over financial reporting existed as of December 31, 2014 as a result of issues relating to 2012 and early 2013, including a lack of accounting and financial personnel and non-functioning accounting and internal control systems. As a result of these material weaknesses, our internal control over financial reporting was not effective at December 31, 2014.

Prior management, which had essentially ceased business operations and was preparing to shut down the Company and cause it to file for liquidation under Chapter 7 of the United States Bankruptcy Code, was replaced on March 22, 2013 in conjunction with the change in control of the Board of Directors on such date. Since that date, new management has instituted a program to reestablish the Company's accounting and financial staff functions, as well as to install new accounting and internal control systems.

Within the constraints of the Company's limited financial resources, new management has retained accounting personnel, established accounting and internal control systems, addressed the preparation of delinquent SEC financial

filings, and filed all delinquent SEC filings. As of the date of the filing of this Annual Report on Form 10-K, the Company has not yet completed this process of reestablishing adequate internal controls over financial reporting.

This Annual Report on Form 10-K does not include an attestation report of the Company's independent registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by the Company's independent registered public accounting firm pursuant to rules of the SEC that permit the Company to provide only management's report in this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

The Company's management, consisting of its principal executive officer and principal financial officer, has determined that no change in the Company's internal control over financial reporting (as that term is defined in Rules 13(a)-15(f) and 15(d)-15(f) of the Securities Exchange Act of 1934) occurred during or subsequent to the fourth quarter of the year ended December 31, 2014 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Directors

The names of each of the directors and certain biographical information about them are set forth below:

Name	Age	Director Since	Principal Occupation
Arnold S Lippa, Ph.D.	68	2013	President, Chief Executive Officer and Chairman of the Board of the Company
Jeff E. Margolis	59	2013	President of Aurora Capital, LLC
Robert N. Weingarten	62	2013	Business and financial consultant and advisor
James Sapirstein, RPh. M.B.A.	53	2014	CEO ContraVir Pharmaceuticals, Inc.
Kathryn MacFarlane, PharmD	49	2014	Owner and Managing Partner of SmartPharma LLC

Arnold S. Lippa, Ph.D.: Dr. Lippa is a Senior Managing Director and founder of T Morgen Capital LLC through which he administers his family's assets. T Morgen Capital LLC is a significant equity owner and managing member of Aurora Capital LLC ("Aurora"), a boutique investment bank and securities firm of which Mr. Margolis is the president and founder, which has served as a placement agent with respect to the Company's recent financings. Dr. Lippa and Mr. Margolis jointly manage, since 2004, Atypical BioCapital Management LLC and Atypical BioVentures Fund LLC, a life sciences fund management company and venture fund, respectively. Since 2006, Dr. Lippa has also been the Executive Chairman of the board of Xintria Pharmaceutical Corporation, a Delaware corporation, as well as a member of its board of directors. Dr. Lippa was co-founder of DOV Pharmaceutical, Inc., where he served as Chairman of the Board and Chief Executive Officer from its inception in 1995 through 2005. Dr. Lippa stepped down as a director of DOV Pharmaceuticals, Inc. in 2006.

We believe that Dr. Lippa's qualifications to serve on our Board include his position as the Company's President and Chief Executive Officer, and his experience working in management roles in other pharmaceutical companies as

described above. Dr. Lippa provides the Board with both technical and scientific expertise in drug discovery and drug development, research management, governmental regulations and strategic planning expertise that is important to the advancement of our research platforms as well as to the overall success of the Company. Dr. Lippa was appointed to our board of directors in March 2013.

Jeff E. Margolis: Mr. Margolis is the president and founder of Aurora, and has been since its inception in 1994. Aurora Capital Corp., a corporation wholly owned by Mr. Margolis, is a significant equity owner and managing member of Aurora. Dr. Lippa and Mr. Margolis jointly manage, since 2004, Atypical BioCapital Management LLC and Atypical BioVentures Fund LLC, a life sciences fund management company and venture fund, respectively. Since 2006, Mr. Margolis has also been the Chief Financial Officer of Xintria Pharmaceutical Corporation, a Delaware corporation, as well as a member of its board of directors.

We believe that Mr. Margolis's qualifications to serve on our Board include his significant experience in operational and management roles within pharmaceutical companies as described above. He also has extensive prior experience working in business development and provides the Company with extremely useful expertise in financing and capital markets, knowledge gained though his position as President of Aurora. Mr. Margolis also provides broad financial expertise. Mr. Margolis was appointed to our board of directors in March 2013.

Robert N. Weingarten: Mr. Weingarten is an experienced business consultant and advisor with an ongoing consulting practice. Since 1979 he has provided financial consulting and advisory services to numerous public companies in various stages of development, operation or reorganization. Mr. Weingarten received a B.A. Degree (Accounting) from the University of Washington in 1974, and an M.B.A. Degree (Finance) from the University of Southern California in 1975. Mr. Weingarten is a Certified Public Accountant (inactive) in the State of California. Mr. Weingarten was appointed as a director of Staffing 360, Inc. on February 25, 2014 and resigned this position on April 20, 2014. Mr. Weingarten was the Non-Executive Chairman of New Dawn Mining Corp. ("New Dawn") from August 31, 2005 through September 30, 2010, and was named the Executive Chairman of New Dawn in October 2010. On July 8, 2010, Mr. Weingarten was appointed to the board of directors of Central African Gold Limited (formerly known as Central African Gold Plc and listed on the Alternative Investment Market of the London Stock Exchange at that time). Central African Gold Limited is an indirect, wholly-owned subsidiary of New Dawn. Both New Dawn and Central African Gold Limited have ceased to be publicly traded reporting companies in their respective jurisdictions.

We believe that Mr. Weingarten's qualifications to serve on our Board include his breadth of experience with public companies, especially those in the development phase and those undergoing restructuring or reorganization. He has also served in managements capacities at other public companies and as a result brings a wealth of experience on financial matters. Mr. Weingarten was appointed to our board of directors in April 2013.

James Sapirstein, RPh. M.B.A.: Mr. Sapirstein has been the Chief Executive Officer and director of ContraVir Pharmaceuticals, Inc., a public reporting company, since March 20, 2014. Prior to joining Contravir, Mr. Sapirstein served as the Chief Executive Officer of Alliqua Biomedical, Inc., a public reporting company. He is considered a start-up and turnaround specialist, with 30 years of pharmaceutical and biotechnology industry experience. He was a founder and Chief Executive Officer and President of Tobira Therapeutics, Inc. from October 2006 to April, 2011, a company that was recently approved for listing on NASDAQ. At Tobira Therapeutics, Inc. Mr. Sapirstein led an experienced biotechnology development team. He has launched several HIV/AIDS agents worldwide during his career in the biotechnology and pharmaceutical industry. Mr. Sapirstein was with Bristol-Myers Squibb from 1996-2000. While at Bristol-Myers Squibb he served as the Head of the International HIV business as well as working in its Infectious Disease marketing teams. In 2002, he accepted the position of Executive Vice President for Serono Laboratories, where he led a team of over 100 professionals in the HIV and pediatric growth hormone business. He had held positions at Gilead Sciences (where he was responsible for the product Viread®), Bristol-Myers Squibb, Hoffmann-LaRoche Ltd. and Eli Lilly and Company. He serves as a member of the Advisory Board at MusclePharm Corp., a public reporting company and a member of the Board of Directors of Clinical Supplies Management, Inc., a private company. He currently serves as an Advisory Board Director at the Fairleigh Dickinson School of Pharmacy. Mr. Sapirstein previously served as a Director of Tobira Therapeutics, Inc. as well as a Director of Alliqua, Inc. He has also previously served as a Director of BioNJ and BIO's Emerging Company Board. Mr. Sapirstein received his Pharmacy degree from the Ernest Mario School of Pharmacy at the Rutgers University, and his Masters of Business Administration degree from Farleigh Dickinson University.

We believe that Mr. Sapirstein's qualifications to serve on our Board include his experience working in management roles in other biopharmaceutical companies as described above, as well as his service on both public and private boards. Mr. Sapirstein provides the Board with additional technical and scientific expertise in drug discovery and drug development, as well as expertise in all phases of start-ups and turnarounds of biopharmaceutical companies, all of

which is important to the advancement of our research platforms as well as to the overall success of the Company. Mr. Sapirstein was appointed to our board of directors in September 2014.

Kathryn MacFarlane, PharmD: Ms. MacFarlane has over 25 years of experience in the pharmaceutical industry, with expertise in marketing, new product planning, and commercialization. Ms. MacFarlane is currently an owner and Managing Partner of SmartPharma LLC, a pharmaceutical consulting firm specializing in commercial consulting for emerging pharmaceutical companies. She also serves as the Chief Commercial Officer at Agile Therapeutics, Inc., a public reporting company, where she played an integral role in two financing rounds and the recent IPO. Her expertise includes market assessment and commercial planning for products in development as well as evaluating products for licensing or acquisition. Her experience spans multiple therapeutic areas including Women's Health, CNS, Cardiology, Vaccines, and Dermatology. Before joining Agile Therapeutics, Ms. MacFarlane served as President and Chief Executive Officer at Xintria Pharmaceutical Corporation, a private company from 2006 through 2007, a company for which Arnold S. Lippa and Jeff E. Margolis served as officers and directors, and prior to that as Vice President of Women's Health and New Product Planning at Warner Chilcott from 2001 through 2006, now part of Activis plc. Ms. MacFarlane had responsibility for the launches of Lipitor®, Celexa®, and Loestrin® 24. In 1999, she was named a Distinguished Alumna and in 2012, was named the Eaton Entrepreneur of the Year by the Purdue University School of Pharmacy. She has completed a Postdoctoral Fellowship in Industrial Pharmacy Practice with Rutgers University and Hoffmann-LaRoche. Ms. MacFarlane currently serves on the Purdue University School of Pharmacy Dean's Advisory Council and is a Founding Member and Advisor to IPhO. She also serves on the Board of Directors for INMED Partnerships for Children, an NGO dedicated to providing food security and health services to women and children. Ms. MacFarlane received her Bachelor of Science in Pharmacy and Doctor of Pharmacy degrees from Purdue University.

We believe Ms. MacFarlane's qualifications to serve on our Board include both her biopharmaceutical consulting background and her familiarity with the biopharmaceutical regulatory and commercialization environment, as well as the breadth of her technical and therapeutic knowledge, as discussed above. Ms. Macfarlane has also served in numerous senior executive positions at various biopharmaceutical companies. Ms. MacFarlane was appointed to our board of directors in September 2014.

Executive Officers

Each executive officer of the Company serves at the discretion of the Board of Directors. The names of the Company's executive officers are set forth below. At December 31, 2014, each of our executive officers was also a member of our board of directors, and their biographical information appears above in the immediately prior section.

Name	**Position with Company**
Arnold S. Lippa, Ph.D.	President, Chief Executive Officer and Chairman of the Board
Jeff E. Margolis	Vice President, Secretary and Treasurer
Robert N. Weingarten	Vice President and Chief Financial Officer
Richard Purcell	Senior Vice President of Research and Development

Richard Purcell: In addition to his role at the Company, Richard Purcell (Age: 54) is the Acting President & Chief Operating Officer and a director of Cynvec, LLC, a private company. He is also the President and CEO of intelliSantè, Inc., a private company. He is a biopharmaceutical development specialist, with extensive experience in providing consulting services to financial, venture capital, and start-up companies to concentrate on new business strategy and clinical development of novel compounds. Previously, Mr. Purcell was president of ClinPro, Inc., a mid-sized clinical research organization (CRO), where he led this full-service, technology driven CRO specializing in Phase I, II, and III clinical trial management. His work included the design and implementation of a number of early stage clinical development programs. Prior to joining ClinPro, Mr. Purcell worked for SCP Communications, a medical communications company, where he served as Corporate Vice President and General Manager of the Clinical Programs Division. Mr. Purcell previously headed the Life Sciences Consulting Group for Kline and Company. Mr. Purcell started his career as a molecular biologist, where he developed and patented a second generation TPA with increased half-life. He has also conducted primary research and published manuscripts on the topics of AIDS and immunomodulators. Mr. Purcell graduated with a degree in Biochemical Sciences from Princeton University, and attended Rutgers Graduate School of Management focusing in marketing and finance.

Other key personnel

John Greer: On September 18, 2014, John Greer, Ph.D. was appointed to the position of Chairman of the Company's Scientific Advisory Board, which is currently being formed. Dr. Greer is the Director of the Neuroscience and Mental

Health Institute at the University of Alberta. He holds two grants regarding research into neuromuscular control of breathing and is the inventor on the use patents licensed by the Company with respect to ampakines. Dr. Greer is expected to assist the Company in forming the rest of its Scientific Advisory Board.

BOARD COMMITTEES