As filed with the Securities and Exchange Commission on July 1, 2014.

Registration No. 333-196635

# SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

# AMENDMENT NO. 1
# TO
# FORM S-1
# REGISTRATION STATEMENT

*Under*
*The Securities Act of 1933*

# CAPNIA, INC.

(Exact name of Registrant as specified in its charter)

| Delaware | 3845 | 77-0523891 |
|---|---|---|
| (State or other jurisdiction of incorporation or organization) | (Primary Standard Industrial Classification Code Number) | (I.R.S. Employer Identification Number) |

3 Twin Dolphin Drive, Suite 160
Redwood City, CA 94065
(650) 213-8444

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

Anish Bhatnagar
Chief Executive Officer
Capnia, Inc.
3 Twin Dolphin Drive, Suite 160
Redwood City, CA 94065
(650) 213-8444

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended, check the following box. ☒

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

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

Large accelerated filer ☐ Accelerated filer ☐
Non-accelerated filer ☒ (do not check if a smaller reporting company) Smaller reporting company ☐

CALCULATION OF REGISTRATION FEE

| Title of Each Class of Securities to be Registered | Proposed Maximum Aggregate Offering Price(1) | Amount of Registration Fee(8) |
|---|---|---|
| Units, each consisting of one share of common stock, $0.001 par value per share, and a warrant to purchase one share of common stock(2)(3) | $ | $ |
| Common stock included in the units(3)(4)(5) | | |
| Warrants included in the units(3)(4) | | |
| Shares of common stock underlying the warrants included in the units(3)(5)(6) | | |
| Underwriters' unit purchase warrant(7) | | |
| Units underlying Underwriters' unit purchase warrant ("Underwriters' Units")(2)(4) | | |
| Common stock included in the Underwriters' Units(4)(5) | | |
| Warrants included in the Underwriters' Units(4) | | |
| Shares of common stock underlying the warrants included in the Underwriters' Units(5)(6) | | |
| Total | $ 23,000,000 | $ 2,962.40 |

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.

(2) The units will consist of one share of common stock and one warrant to purchase one share of common stock.

(3) Includes shares and warrants that the underwriter has the option to purchase to cover over-allotments, if any.

(4) No fee required pursuant to Rule 457(g) under the Securities Act of 1933, as amended.

(5) Pursuant to Rule 416 under the Securities Act of 1933, as amended, the securities being registered hereunder include such indeterminate number of additional shares of common stock as may be issued after the date hereof as a result of stock splits, stock dividends or similar transactions.

(6) We have calculated the proposed maximum aggregate offering price of the common stock underlying the warrants and the underwriter's warrants by assuming that such warrants are exercisable to purchase common stock at a price per share equal to 110% of the price per share of the common stock underlying each unit sold in this offering.

(7) Represents 5% of the units to be sold in this offering, including those that may be sold pursuant to the exercise of the over-allotment option.
(8) The Registrant previously paid $2,962.40 in connection with the initial filing of this Registration Statement.

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

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**The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.**

**Subject to completion, dated July 1, 2014**

CAPNIA

# Units, Each Consisting Of One Share of Common Stock and a Warrant to Purchase One Share of Common Stock

This is the initial public offering of securities of Capnia, Inc. We are offering units, each unit consisting of one share of our common stock and a warrant to purchase one share of common stock. Prior to this offering, there has been no public market for our securities. Each warrant entitles the holder to purchase one share of our common stock at a price equal to 110% of the offering price of the common stock underlying the units, subject to adjustment as described herein. Each warrant will become exercisable immediately following issuance and will expire on , 2019. We expect the initial public offering price to be between $ and $ per unit. We have applied for listing of our units, common stock and warrants on the NASDAQ Capital Market under the trading symbols "CAPNU," "CAPN" and "CAPNW," respectively. No assurance can be given that our application will be approved. If the application is not approved, we will not complete this offering.

The units will begin trading on or promptly after the date of this prospectus. The units will automatically separate and each of the common stock and warrants will trade separately on the first trading day following the expiration of the underwriters' 45-day over-allotment option, unless Maxim Group LLC, the representative of the underwriters, determines that an earlier date is acceptable based on its assessment of the relative strengths of the securities markets and small capitalization companies in general, and the trading pattern of, and demand for, our securities in particular.

We are an emerging growth company under the Jumpstart our Business Startups Act of 2012, or JOBS Act, and, as such, may elect to comply with certain reduced public company reporting requirements for future filings.

**Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page 12.**

| | Per Unit | Total |
|---|---|---|
| Initial public offering price | $ | $ |
| Underwriting discounts and commissions(1) | $ | $ |
| Proceeds, before expenses | $ | $ |

(1) See the heading entitled "Underwriting" on page 144 of this prospectus for additional disclosure regarding compensation to the underwriter payable by us.

Certain of our existing stockholders, or their affiliates, including entities associated with Vivo Ventures, have indicated to us their interest in purchasing up to $5,000,000 of units in this offering at the offering price.

We have granted the underwriters an option, exercisable one or more times in whole or in part, to purchase up to additional units from us at the public offering price, less the underwriting discount, within 45 days from the date of this prospectus to cover over-allotments, if any. If the underwriter exercises the option in full, the total underwriting discounts and commissions payable will be $ , and the total proceeds to us, before expenses, will be $ . Prior to separation of the units, any exercise of the over-allotment will be settled in units, and subsequent to the separation of the units will be settled in shares of common stock and warrants, as applicable.

The underwriters expect to deliver the units against payment in New York, New York on , 2014.

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.**

*Sole Book-Running Manager*

**Maxim Group LLC**

*Co-Manager*

**Cantor Fitzgerald & Co.**

The date of this prospectus is , 2014.

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# CoSense™

## End Tidal Carbon Monoxide Monitor

Commercial Launch Planned In Second Half of 2014

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**Neither we nor the underwriters have authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the units offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is accurate only as of its date regardless of the time of delivery of this prospectus or of any sale of securities.**

Neither we nor the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the U.S. Persons who come into possession of this prospectus and any free writing prospectus related to this offering in jurisdictions outside the U.S. are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus and any such free writing prospectus applicable to that jurisdiction.

**Until , 2014 (the 25th day after the date of this prospectus), all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriter and with respect to their unsold allotments or subscriptions.**

## PROSPECTUS SUMMARY

*This summary highlights information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before deciding to invest in our securities, you should read this entire prospectus carefully, including the sections of this prospectus entitled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes contained elsewhere in this prospectus. Unless the context otherwise requires, references in this prospectus to the "company," "Capnia," "we," "us" and "our" refer to Capnia, Inc.*

### Overview

We develop medical diagnostics and therapeutics based on our proprietary technology for precision metering of gas flow. Our first product, CoSense™, aids in the diagnosis of hemolysis in neonates, a dangerous condition in which red blood cells degrade rapidly, which can lead to long-term developmental disability. CoSense received initial 510(k) clearance for sale in the U.S. in the fourth quarter of 2012, with a more specific Indication for Use related to hemolysis issued in the first quarter of 2014, and received CE Mark approval for sale in the European Union, or E.U., in the third quarter of 2013. CoSense is not yet commercially available and has thus not generated commercial sales to date; however, we are currently focused on launching CoSense commercially with the proceeds of this offering. We intend to begin selling CoSense in the second half of 2014. CoSense combines a portable detection device with a single-use disposable nasal cannula to measure carbon monoxide, or CO, in the portion of the exhaled breath that originates from the deepest portion of the lung, which is referred to as the "end-tidal" component of the breath.

With respect to therapeutics, we have previously obtained CE Mark approval in the E.U. for Serenz™, an as-needed treatment of symptoms related to allergic rhinitis, or AR. Serenz has shown statistically significant improvements in AR symptoms in randomized, controlled Phase 2 clinical trials. In the U.S., where Serenz has not yet been approved, the FDA may require Phase 3 trials to be conducted prior to approval. Serenz is still in development and has not generated sales to date.

### CoSense

Approximately 143 million babies are born annually worldwide, with approximately 9.2 million of these born in the U.S. and E.U. Over 60% of neonates present with jaundice at some point in the first five days of life. We believe CoSense has the potential to become a part of routine pre-discharge screening for all newborns, by aiding in the differential diagnosis of hemolysis in infants that present with, or are at risk of developing, jaundice. Red blood cell breakdown is a normal phenomenon, but in certain situations the breakdown is accelerated or is excessive and is referred to as hemolysis. The most common cause of hospital readmission during the neonatal phase is jaundice, and we expect that CoSense will help reduce such readmissions. Many causes of jaundice do not represent a significant health threat. However, when severe jaundice occurs in the presence of hemolysis, rapid diagnosis and treatment may be necessary for infants to avoid life-long neurological impairment or other disability. Also, unnecessary treatment increases hospital expenses, is stressful for both infant and parents and may increase morbidity. There is an unmet need, therefore, for more accurate diagnostics for hemolysis, particularly if they are non-invasive, rapid, and easy to use.

CoSense detects hemolysis by measuring CO in the "end-tidal" component of the breath, and the measurement we perform with CoSense is referred to as end-tidal carbon monoxide, or ETCO. The American Academy of Pediatrics, or AAP, guidelines, published in the journal Pediatrics in 2004, recommend ETCO measurement be performed to assess the presence of hemolysis in neonates requiring phototherapy, neonates unresponsive to phototherapy or readmitted for phototherapy and neonates with bilirubin levels approaching

transfusion levels. These guidelines also note that ETCO is the only test that provides a *direct* measurement of bilirubin production because CO is a direct chemical byproduct of hemolysis. Therefore, ETCO provides a direct indication of the rate of bilirubin production from hemolysis. Measurement of serum bilirubin, whether performed via a transcutaneous bilirubinometer or via a conventional needle-stick assay, is only indicative of the bilirubin level at a point in time. It does not capture the rate of bilirubin production or the presence/absence of hemolysis, leaving the physician uncertain as to the patient's level of risk.

Today, no device is currently commercially available for accurately measuring the ETCO levels associated with the rate of hemolysis in clinical practice in neonates. As a result, we believe that CoSense will be the only device on the market that enables physicians to practice in accordance with the AAP guidelines when evaluating jaundiced neonates for potential treatment.

Sales and marketing activities associated with the launch of CoSense comprise a significant portion of our use of proceeds from this offering. We plan to hire our own sales force to market CoSense to hospitals and other medical institutions in the U.S. CoSense has the following advantages that we believe will drive its adoption by hospitals, other medical institutions and physicians:

- rapid administration at the point-of-care, yielding results in approximately five minutes;
- non-invasive and minimally disruptive to the neonate;
- no requirement for specific breath maneuver;
- simple user interface that allows the healthcare professional to use it correctly with minimal training;
- no on-site calibration necessary; and
- accuracy over a range of CO concentrations clinically relevant (less than 10 parts per million, or ppm) to detection of hemolysis.

In addition, we believe the CoSense device will be priced at a level that falls below the typical capital equipment purchasing threshold for a hospital or other medical institution in the U.S.

**Our Sensalyze™ Technology Platform**

CoSense is the first 510(k) cleared or CE mark approved device based on our Sensalyze Technology Platform. We also intend to use our research and development expertise to develop additional diagnostic devices that are based on this platform, with a particular emphasis on products that could be sold effectively by the same sales force that we intend to deploy to commercialize CoSense. Our Sensalyze Technology Platform combines hardware, sensors, and software to provide the following novel capabilities:

- identification of full breaths that follow a normal pattern, also known as "physiologic" breaths, even if the patient is breathing very rapidly—a capability that is particularly relevant in infants;
- capture of individual exhaled breaths, and segmentation of the breath into different components such as "end-tidal," "upper airway" and "lower airway," which may allow the localization of the source of a given analyte to a specific anatomic area; and
- ability to move a specific micro-liter component of breath to a sensor module.

When combined, these capabilities provide a novel platform for non-invasive detection of various analytes. Our current development pipeline includes proposed diagnostic devices for asthma in children, assessment of blood carbon dioxide, or $CO_2$, concentration in neonates, and malabsorption in infants with colic. We may also license elements of our Sensalyze Technology Platform to other companies that have complementary development or commercial capabilities.

**Serenz**

Serenz, our therapeutic product candidate, is a treatment for symptoms related to AR, which, when triggered by seasonal allergens, is commonly known as hay fever or seasonal allergies. Several Phase 2 clinical trials have been conducted in which Serenz showed statistically significant improvements in total nasal symptom scores, or TNSS, in symptomatic patients when compared to controls. Serenz has not shown statistically significant improvements in trials in which it was used in a scheduled dosing paradigm (see "Business — Serenz — Clinical Trials of Serenz Using Other Dosing Methods" on pages 96-97 of this prospectus), and as a result we have pursued development of Serenz using an as-needed dosing regimen. AR is typically an episodic disorder with intermittent symptoms. However, there is no treatment currently available that provides truly rapid relief of symptoms, other than topical decongestants, which can have significant side effects. The more optimal therapeutic for an episodic disorder is one that will treat symptoms when they occur, and can therefore be taken only as needed. We believe that Serenz has an ideal profile for an as-needed therapeutic for AR and may provide advantages over regularly dosed, slow to act currently marketed products.

Our Serenz technology is based upon the observation that nasal, non-inhaled $CO_2$ delivered at a low flow rate into the nasal cavity can alleviate the symptoms of AR, via a mechanism of action that is not yet known. Serenz is a convenient, hand-held device that delivers a low-flow of $CO_2$ to the nasal mucosa.

In clinical trials to date, Serenz has shown a large effect size, a rapid onset of effect — within 30 minutes after administration — and a mild side effect profile. We believe that such a therapeutic index positions Serenz well to be a potential first-line treatment for any AR sufferer. Serenz can be taken as a stand-alone treatment or as an adjunct to other medications, and can be used on an as-needed basis.

We currently plan to commercialize Serenz in the E.U. via distributorship arrangements. In the U.S., we believe that Serenz may be classified as either a medical device or a drug-device combination. If Serenz is classified as a drug-device combination, Phase 3 trials would likely be required to obtain approval. We currently believe that these trials, if required, would be 400 to 600 patients in size and would take approximately a year to complete once started, which would significantly increase both the investment in and timeframe for regulatory approval. We therefore intend to determine the appropriate regulatory approval pathway for Serenz in dialogue with the U.S. Food and Drug Administration, or FDA. In any event, we plan to seek a partner or distributorship arrangements for commercialization. In 2013, we out-licensed Serenz to Block Drug Company, a wholly-owned subsidiary of GlaxoSmithKline, or GSK, realizing revenue in the form of a non-refundable up-front payment of $3.0 million. In June 2014, the agreement with GSK terminated and GSK returned the licensed rights to Serenz back to us. We believe GSK's decision to terminate the agreement was due to GSK's belief that the product would be classified as a drug-device combination by the FDA, and the additional expense associated with such a classification. Potential partners may perceive this history as negatively impacting the Serenz program, which could impair our ability to partner it in the future. We do not expect that the net proceeds from this offering, and our existing cash and cash equivalents, will be sufficient to enable us to fund both the commercialization of our CoSense product and Phase 3 clinical trials for Serenz, if such trials are necessary for approval in the U.S.

**Risks Associated With Our Business**

Our business is subject to numerous risks and uncertainties related to: the development and commercialization of CoSense, our reliance on third parties for manufacturing, our financial condition and need for additional capital, the operation of our business, our intellectual property, government regulation and this

offering and ownership of our securities. These risks include those highlighted in the section entitled "Risk Factors" immediately following this prospectus summary, including the following:

- We have a limited operating history and have incurred significant losses since our inception, and we anticipate that we will continue to incur substantial losses for the foreseeable future. As of March 31, 2014, on an unaudited basis, we had an accumulated deficit of $57.9 million. We have only one product approved for sale, and have generated no commercial sales to date, which, together with our limited operating history, makes it difficult to evaluate our business and assess our future viability.

- CoSense, or any of our planned products, may fail to achieve the degree of market acceptance by physicians, patients, caregivers, healthcare payors, and others in the medical community, necessary for commercial success.

- We have not commercialized any product in the past, and the challenges involved in establishing a new sales operation may expose us to a higher than usual level of risk with respect to commercializing CoSense.

- While we have obtained approval to market CoSense in the U.S. and the E.U., our other products, including our AR treatment product, Serenz, have not yet received approval for sale in the U.S. We may be required to conduct additional clinical trials prior to obtaining approval for Serenz or for other future products. We may not obtain such approvals for sale on a predictable timeframe, or at all.

- Neither CoSense, nor its associated consumables, have ever been manufactured on a commercial scale, and there are risks associated with scaling up manufacturing to commercial scale. The commercial manufacturers may not be successful in achieving the levels of production volume, quality, or manufacturing costs necessary to support commercial success of CoSense.

- We previously out-licensed Serenz to a partner, who terminated the agreement and returned the rights to Serenz back to us in June 2014.

- As of December 31, 2013, our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern.

- We may need additional funds to support our operations, and such funding may not be available to us on acceptable terms, or at all, which would force us to delay, reduce or suspend our research and development programs and other operations or commercialization efforts. Raising additional capital may subject us to unfavorable terms, cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights to our planned products and technologies.

- Our business depends on our continuing to satisfy the FDA and any other applicable U.S. and international regulatory requirements with respect to medical diagnostics or therapeutics, including requirements which may change or be created in the future.

- We have obtained certain key intellectual property relating to CoSense from BioMedical Drug Development, Inc., or BDDI, and any breach of our asset purchase agreement with BDDI would prevent or otherwise materially adversely affect our ability to proceed with any development or potential commercialization of CoSense.

- We need to obtain or maintain patents or other appropriate protection for the intellectual property utilized in our current and planned product offerings, and we must avoid infringement of third-party intellectual property.

**Corporate information**

We were incorporated in Delaware in August of 1999. Our principal executive offices are located at 3 Twin Dolphin Drive, Suite 160, Redwood City, CA 94065, and our telephone number is (650) 213-8444. Our website address is *www.capnia.com*. The information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus, or in deciding whether to purchase our securities.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012. As such, we are eligible for exemptions from various reporting requirements applicable to other public companies that are not emerging growth companies, including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002 and reduced disclosure obligations regarding executive compensation. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year following the fifth anniversary of the completion of this offering, (2) the last day of the fiscal year in which we have total annual gross revenue of at least $1.0 billion, (3) the date on which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700.0 million as of the prior June 30th, and (4) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

**"Capnia," "CoSense," "Serenz," "Sensalyze," our logo and our other trade names, trademarks and service marks appearing in this prospectus are our property. Other trade names, trademarks and service marks appearing in this prospectus are the property of their respective holders.**

| THE OFFERING | |
|---|---|
| **Securities offered by Capnia** | units, each unit consisting of one share of common stock and a warrant to purchase one share of common stock. |
| **Common stock outstanding prior to this offering** | shares |
| **Common stock to be outstanding after this offering** | shares |
| **Terms of warrants issued as a part of the units** | Exercise price — $ , which is equal to 110% of the offering price of the common stock underlying the units.<br><br>Exercisability — each warrant is exercisable for one share of common stock, subject to adjustment as described herein.<br><br>Exercise period — each warrant will become exercisable immediately following issuance and will expire on , 2019. |
| **Underwriters' over-allotment option** | We have granted the underwriters the right to purchase up to additional units from us at the public offering price less the underwriting discount within 45 days from the date of this prospectus to cover over-allotments. Prior to separation of the units, any exercise of the over-allotment will be settled in units, and subsequent to the separation of the units will be settled in shares of common stock and warrants, as applicable. |
| **Separation of common stock and warrants issued as part of the units** | The units will begin trading on or promptly after the date of this prospectus. The units will automatically separate and each of the common stock and warrants will trade separately on the first trading day following the expiration of the underwriters' 45-day over-allotment option, unless Maxim Group LLC, the representative of the underwriters, determines that an earlier date is acceptable based on its assessment of the relative strengths of the securities markets and small capitalization companies in general, and the trading pattern of, and demand for, our securities in particular. |
| **Use of proceeds** | We estimate that our net proceeds from this offering will be approximately $17.1 million, or approximately $20.7 million if the underwriters exercise their over-allotment option in full.<br><br>We intend to use approximately $10.2 million of the net proceeds from this offering to fund our planned commercial launch of CoSense, and related costs, and |

| | |
|---|---|
| | the balance to fund working capital, capital expenditures, research and development of additional products, and other general corporate purposes. This may include the acquisition or licensing of other products, businesses or technologies, although we have no plans regarding any specific acquisition candidates at this time. See "Use of Proceeds" for additional information. |
| **Lock-up** | Prior to the completion of this offering, we and each of our officers, directors, and 1.0% or greater stockholders will agree, subject to certain exceptions, not to sell, offer, agree to sell, contract to sell, hypothecate, pledge, grant any option to purchase, make any short sale of, or otherwise dispose of or hedge, directly or indirectly, any units, shares of common stock or warrants, or any securities convertible into or exercisable or exchangeable for units, shares of common stock or warrants, whether any such transaction described above is to be settled by delivery of units, shares of common stock or warrants, in cash or otherwise, for a period of 180 days after the date of the final prospectus relating to this offering. See "Underwriting" for additional information. |
| **Underwriter compensation warrants** | We will issue to Maxim Group LLC, the representative of the underwriters, upon closing of this offering, compensation warrants entitling the representative to purchase 5.0% of the aggregate number of units issued in this offering, including units issued pursuant to the exercise of the over-allotment option. The units will be settled in shares of common stock and warrants. The underwriter warrants will have a term of five years and may be exercised commencing 180 days after the date of effectiveness of the Registration Statement on Form S-1 of which this prospectus forms a part. The underwriter warrants may be exercised on a cashless basis. |
| **Risk factors** | See "Risk Factors" beginning on page 12 and the other information included in this prospectus for a discussion of factors you should carefully consider before deciding to invest in our securities. |
| **Proposed NASDAQ Capital Market symbol** | We have applied for the listing of our units, common stock and warrants on The NASDAQ Capital Market under the trading symbols "CAPNU," "CAPN" and "CAPNW," respectively. |

The number of shares of our common stock to be outstanding after this offering is based on shares of our common stock outstanding as of , 2014, and excludes the following:

- shares of our common stock issuable upon the exercise of stock options outstanding as of , 2014 at a weighted-average exercise price of $ per share;
- shares of common stock, subject to increase on an annual basis, reserved for future issuance under our 2014 Equity Incentive Plan, which will become effective in connection with the completion of this offering;
- shares of our common stock, subject to increase on an annual basis, reserved for future issuance under our 2014 Employee Stock Purchase Plan;
- 111,111 shares of our common stock issuable upon the exercise of warrants to purchase convertible preferred stock outstanding as of , 2014, which warrants will automatically convert into warrants to purchase common stock immediately prior to the completion of this offering, with an exercise price of per share;
- shares of our common stock issuable upon the exercise of warrants issued in connection with our 2010/2012 convertible promissory notes outstanding as of , 2014, which warrants will automatically convert into warrants to purchase common stock immediately prior to the completion of this offering, with an exercise price of per share, which is 75% of the price of the common stock underlying the units sold in this offering;
- shares of our common stock issuable upon the exercise of warrants that are part of the units sold in this offering; and
- shares of our common stock issuable upon exercise of stock options to be granted to certain of our directors and officers upon the completion of this offering.

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

- a one-for- reverse split of our common stock effected on , 2014;
- the automatic conversion of all outstanding shares of our convertible preferred stock in connection with this offering into an aggregate of shares of our common stock immediately prior to the closing of this offering;
- the automatic conversion of the outstanding 2010/2012 convertible promissory notes in connection with this offering into an aggregate of shares of our common stock immediately prior to the closing of this offering;
- the automatic conversion of the outstanding 2014 convertible promissory notes in connection with this offering into an aggregate of units immediately prior to the closing of this offering;
- the filing of our amended and restated certificate of incorporation and the adoption of our amended and restated bylaws immediately prior to the closing of this offering; and
- no exercise of the underwriters' over-allotment option.

## SUMMARY FINANCIAL AND OTHER DATA

The following tables summarize our financial data and should be read together with the sections in this prospectus entitled "Selected Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus.

We have derived the statement of operations data for the years ended December 31, 2012 and 2013 and for the period from inception to December 31, 2013 and the balance sheet data as of December 31, 2012 and 2013 from our audited financial statements included elsewhere in this prospectus. The summary consolidated financial data for the three months ended March 31, 2013 and 2014, and for the period from August 25, 1999 (date of inception) to March 31, 2014 and as of March 31, 2014 are derived from our unaudited consolidated financial statements appearing elsewhere in this prospectus. The unaudited consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary to present fairly our financial position as of March 31, 2014 and the results of operations for the three months ended March 31, 2013 and 2014, and for the period from August 25, 1999 (date of inception) to March 31, 2014. Our historical results are not necessarily indicative of the results that should be expected in the future.

| | Year Ended December 31, | | Three Months Ended March 31, | | Period from August 25, 1999 (Inception) to December 31, | Period from August 25, 1999 (Inception) to March 31, |
|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2013 | 2014 | 2013 | 2014 |
| | | | (in thousands, except share and per share data) (unaudited) | | | (unaudited) |
| **Statement of Operations Data:** | | | | | | |
| Revenue | $ — | $ 3,000 | $ 3,000 | $ — | $ 3,000 | $ 3,000 |
| Operating expenses: | | | | | | |
| Research and development | 2,470 | 2,380 | 703 | 372 | 36,652 | 37,024 |
| General and administrative | 1,127 | 1,467 | 416 | 312 | 15,960 | 16,272 |
| Total operating expenses | 3,597 | 3,847 | 1,119 | 684 | 52,612 | 53,296 |
| Operating income (loss) | (3,597) | (847) | 1,881 | (684) | (49,612) | (50,296) |
| Therapeutic discovery grant proceeds | — | — | — | — | 733 | 733 |
| Interest income | 3 | 2 | — | — | 814 | 815 |
| Interest expense | (2,866) | (2,860) | (944) | (388) | (9,721) | (10,108) |
| Other income (expense), net | (22) | (2) | 77 | 238 | 685 | 923 |
| Net income (loss) and comprehensive income (loss) | $(6,482) | $(3,707) | 1,014 | (834) | $ (57,101) | $ (57,935) |
| Net income (loss) per common share, basic[1] | $ (1.04) | $ (0.58) | $ 0.16 | $ (0.13) | | |
| Net income (loss) per common share, diluted[1] | $ (1.04) | $ (0.58) | $ 0.05 | $ (0.13) | | |

| | Year Ended December 31, | | Three Months Ended March 31, | | Period from August 25, 1999 (Inception) to December 31, | Period from August 25, 1999 (Inception) to March 31, |
|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2013 | 2014 | 2013 | 2014 |
| | (in thousands, except share and per share data) | | | | | |
| | | | | | (unaudited) | |
| Shares used to compute net income (loss) per common share, basic | 6,244,230 | 6,428,278 | 6,426,939 | 6,428,716 | | |
| Shares used to compute net income (loss) per common share, diluted[1] | 6,244,230 | 6,428,278 | 27,067,245 | 6,428,716 | | |
| Pro forma net income (loss) per common share, basic and diluted[1] (unaudited) | | | | | | |
| Shares used to compute pro forma net income (loss) per common share, basic and diluted[1] (unaudited) | | | | | | |

(1) See Note 13 to our financial statements included elsewhere in this prospectus for an explanation of the method used to calculate the historical and pro forma net income (loss) per share, basic and diluted, and the number of shares used in the computation of the per share amounts.

| | As of March 31, 2014 | As of March 31, 2014 | |
|---|---|---|---|
| | | Pro Forma[1] | Pro Forma As Adjusted[2][3] |
| | | (in thousands) (unaudited) | |
| **Balance Sheet Data:** | | | |
| Cash and cash equivalents | $ 764 | | |
| Working capital (deficit) | (13,704) | | |
| Total assets | 1,031 | | |
| Convertible promissory notes | 14,379 | | |
| Convertible preferred stock | 23,808 | | |
| Deficit accumulated during the development stage | (57,935) | | |
| Total stockholders' equity (deficit) | (38,687) | | |

(1) The pro forma column reflects (i) the filing of our amended and restated certificate of incorporation and the automatic conversion of outstanding shares of our convertible preferred stock as of March 31, 2014 into an aggregate of shares of common stock immediately prior to the closing of this offering; (ii) the automatic conversion of the 2010/2012 convertible promissory notes into shares of common stock as if it had occurred as of March 31, 2014; (iii) the issuance of convertible promissory notes in 2014 and automatic conversion of those notes into units as if they had occurred as of March 31, 2014 and the receipt of approximately $1.8 million of gross proceeds from such sale and (iv) shares of our common stock issuable upon the exercise of warrants issued in connection with our 2010/2012 convertible promissory notes outstanding as of March 31, 2014.

(2) The pro forma as adjusted column reflects the pro forma adjustments described in footnote (1) above and the sale by us of units in this offering at an assumed initial public offering price of $ per unit, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) A $1.00 increase (decrease) in the assumed initial public offering price of $ per unit would increase (decrease) each of cash and cash equivalents, working capital and total assets by $ million and decrease (increase) total stockholders' equity (deficit) by $ million, assuming the number of units we are offering, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of units we are offering. An increase (decrease) of 1,000,000 units in the number of units we are offering would increase (decrease) each of cash and cash equivalents, working capital and total assets by approximately $ million and decrease (increase) total stockholders' equity (deficit) by approximately $ million, assuming the assumed initial public offering price per unit, as set forth on the cover page of this prospectus, remains the same. The pro forma as adjusted information is illustrative only, and we will adjust this information based on the actual initial public offering price, number of units offered and other terms of this offering determined at pricing.

## RISK FACTORS

*Investing in our securities involves a high degree of risk. You should consider carefully the following risks, together with all the other information in this prospectus, including our financial statements and notes thereto, before you invest in our securities. If any of the following risks actually materializes, our operating results, financial condition and liquidity could be materially adversely affected. As a result, the trading price of our securities could decline and you could lose part or all of your investment.*

**Risks related to our financial condition and capital requirements**

***We have a limited operating history and have incurred significant losses since our inception, and we anticipate that we will continue to incur substantial losses for the foreseeable future. We have only one product approved for sale, and have generated no commercial sales to date, which, together with our limited operating history, makes it difficult to evaluate our business and assess our future viability.***

We are a developer of therapeutics and diagnostics with a limited operating history. Other than CoSense, which has received 510(k) clearance from the FDA and CE Mark clearance in the E.U., we have no other products currently approved. Evaluating our performance, viability or future success will be more difficult than if we had a longer operating history or approved products for sale on the market. We continue to incur significant research and development and general and administrative expenses related to our operations. Investment in medical device product development is highly speculative, because it entails substantial upfront capital expenditures and significant risk that any potential planned product will fail to demonstrate adequate accuracy or clinical utility. We have incurred significant operating losses in each year since our inception, and expect that we will not be profitable for some time after the completion of this offering. As of March 31, 2014 (unaudited), we had an accumulated deficit of $57.9 million.

We expect that our future financial results will depend primarily on our success in launching, selling and supporting CoSense and other products using our Sensalyze Technology Platform. This will require us to be successful in a range of activities, including manufacturing, marketing and selling CoSense. We are only in the preliminary stages of some of these activities. We may not succeed in these activities and may never generate revenue that is sufficient to be profitable in the future. Even if we are profitable, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to achieve sustained profitability would depress the value of our company and could impair our ability to raise capital, expand our business, diversify our planned products, market our current and planned products, or continue our operations.

***We currently have no source of product revenue and may never become profitable.***

To date, we have not generated any revenues from commercial product sales, and have not generated sufficient revenues from licensing activities to achieve profitability. Our ability to generate revenue from product sales and achieve profitability will depend upon our ability, alone or with any future collaborators, to successfully commercialize products, including CoSense, Serenz, or any planned products that we may develop, in-license or acquire in the future. Our ability to generate revenue from product sales from planned products also depends on a number of additional factors, including our ability to:

- develop a commercial organization capable of sales, marketing and distribution of any products for which we obtain marketing approval in markets where we intend to commercialize independently;
- achieve market acceptance of our products, if any;
- set a commercially viable price for our products;
- establish and maintain supply and manufacturing relationships with reliable third parties, and ensure adequate and legally compliant manufacturing to maintain that supply;

- obtain coverage and adequate reimbursement from third-party payors, including government and private payors;
- find suitable distribution partners for CoSense or Serenz to help us market, sell and distribute our approved products in other markets;
- demonstrate the safety and efficacy of Serenz to the satisfaction of FDA and obtain regulatory approval for Serenz and planned products, if any, for which there is a commercial market;
- complete and submit applications to, and obtain regulatory approval from, foreign regulatory authorities;
- complete development activities, including any potential Phase 3 clinical trials of Serenz, successfully and on a timely basis;
- establish, maintain and protect our intellectual property rights and avoid third-party patent interference or patent infringement claims; and
- attract, hire and retain qualified personnel.

In addition, because of the numerous risks and uncertainties associated with product development, including that CoSense, Serenz or any planned products may not advance through development or achieve the endpoints of applicable clinical trials, we are unable to predict the timing or amount of increased expenses, or when or if we will be able to achieve or maintain profitability. In addition, our expenses could increase beyond expectations if we decide, or are required by the FDA or foreign regulatory authorities, to perform studies or clinical trials in addition to those that we currently anticipate. Even if we are able to complete the development and regulatory process for Serenz or any planned products, we anticipate incurring significant costs associated with commercializing these products.

Even if we are able to generate revenues from the sale of CoSense, Serenz or any planned products that may be approved, we may not become profitable and may need to obtain additional funding to continue operations. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce or shut down our operations.

***Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or below our guidance.***

Our quarterly and annual operating results may fluctuate significantly in the future, which makes it difficult for us to predict our future operating results. From time to time, we may enter into collaboration agreements with other companies that include development funding and significant upfront and milestone payments or royalties, which may become an important source of our revenue. Accordingly, our revenue may depend on development funding and the achievement of development and clinical milestones under any potential future collaboration and license agreements and sales of our products, if approved. These upfront and milestone payments may vary significantly from period to period and any such variance could cause a significant fluctuation in our operating results from one period to the next. In addition, we measure compensation cost for stock-based awards made to employees at the grant date of the award, based on the fair value of the award as determined by our board of directors, and recognize the cost as an expense over the employee's requisite service period. As the variables that we use as a basis for valuing these awards change over time, including, after the closing of this offering, our underlying stock price and stock price volatility, the magnitude of the expense that we must recognize may vary significantly. Furthermore, our operating results may fluctuate due to a variety of other factors, many of which are outside of our control and may be difficult to predict, including the following:

- the cost and risk of initiating sales and marketing activities, including substantial hiring of sales and marketing personnel;

- the timing and cost of, and level of investment in, research and development activities relating to our planned products, which will change from time to time;
- our ability to enroll patients in clinical trials and the timing of enrollment;
- the cost of manufacturing CoSense and any planned products, which may vary depending on FDA guidelines and requirements, the quantity of production and the terms of our agreements with manufacturers;
- expenditures that we will or may incur to acquire or develop additional planned products and technologies;
- the design, timing and outcomes of clinical studies for Serenz and any planned products or competing planned products;
- changes in the competitive landscape of our industry, including consolidation among our competitors or potential partners;
- any delays in regulatory review or approval of Serenz or any of our planned products;
- the level of demand for CoSense, and for Serenz and any planned products, should they receive approval, which may fluctuate significantly and be difficult to predict;
- the risk/benefit profile, cost and reimbursement policies with respect to our future products, if approved, and existing and potential future drugs that compete with our planned products;
- competition from existing and potential future offerings that compete with CoSense, Serenz or any of our planned products;
- our ability to commercialize CoSense or any planned product inside and outside of the U.S., either independently or working with third parties;
- our ability to establish and maintain collaborations, licensing or other arrangements;
- our ability to adequately support future growth;
- potential unforeseen business disruptions that increase our costs or expenses;
- future accounting pronouncements or changes in our accounting policies; and
- the changing and volatile global economic environment.

The cumulative effects of these factors could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance. This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated revenue or earnings guidance we may provide.

***We may need additional funds to support our operations, and such funding may not be available to us on acceptable terms, or at all, which would force us to delay, reduce or suspend our research and development programs and other operations or commercialization efforts. Raising additional capital may subject us to unfavorable terms, cause dilution to our existing stockholders, restrict our operations, or require us to relinquish rights to our planned products and technologies.***

The commercialization of CoSense, as well as the completion of the development and the potential commercialization of planned products, will require substantial funds. As of March 31, 2014, on an unaudited basis, we had approximately $0.8 million in cash and cash equivalents. We believe that our existing cash and cash equivalents, including the net proceeds we received from our April 2014 convertible note financing, will be sufficient to sustain operations for at least the next 12 months based on our existing business plan, without the inclusion of net proceeds from this offering. Our future financing requirements will depend on many factors, some of which are beyond our control, including the following:

- the cost of activities and added personnel associated with the commercialization of CoSense, including marketing, manufacturing, and distribution;
- the cost of preparing to manufacture CoSense instruments and consumables on a larger scale;
- the degree and rate of market acceptance of CoSense, and the revenue that we are able to collect from sales of CoSense as a result;
- our ability to set a commercially attractive price for CoSense devices and consumables, and our customers' perception of the value relative to the prices we set;
- our ability to clarify the regulatory path in the U.S. for Serenz, and the potential requirement for additional pivotal clinical studies;
- the timing of, and costs involved in, seeking and obtaining approvals from the FDA and other regulatory authorities for Serenz and other planned products;
- our ability to obtain a partner for Serenz on attractive economic terms, or engage in commercial sales of Serenz on our own or through distributors;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights and/or the loss of those rights;
- our ability to enter into distribution, collaboration, licensing, commercialization or other arrangements and the terms and timing of such arrangements;
- the emergence of competing technologies or other adverse market developments;
- the costs of attracting, hiring and retaining qualified personnel;
- unforeseen developments during our clinical trials;
- unforeseen changes in healthcare reimbursement for any of our approved products;
- our ability to maintain commercial scale manufacturing capacity and capability with a commercially acceptable cost structure;
- unanticipated financial resources needed to respond to technological changes and increased competition;

- enactment of new legislation or administrative regulations;
- the application to our business of new regulatory interpretations;
- claims that might be brought in excess of our insurance coverage;
- the failure to comply with regulatory guidelines; and
- the uncertainty in industry demand.

We do not have any material committed external source of funds or other support for our commercialization and development efforts. Until we can generate a sufficient amount of product revenue to finance our cash requirements, which we may never do, we expect to finance future cash needs through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing and distribution arrangements. Additional financing may not be available to us when we need it or it may not be available on favorable terms. If we raise additional capital through marketing and distribution arrangements or other collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish certain valuable rights to Serenz, CoSense, or potential planned products, technologies, future revenue streams or research programs, or grant licenses on terms that may not be favorable to us. If we raise additional capital through public or private equity offerings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of, or suspend one or more of our clinical studies or research and development programs or our commercialization efforts.

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

As described in Note 1 of our accompanying audited financial statements, our auditors have included a "going concern" provision in their opinion on our financial statements, expressing substantial doubt that we can continue as an ongoing business for the next twelve months. Our financial statements do not include any adjustments that may result from the outcome of this uncertainty. If we cannot secure the financing needed to continue as a viable business, our stockholders may lose some or all of their investment in us.

**Risks related to the development and commercialization of our products**

***Our success depends heavily on the successful commercialization of our CoSense device to aid in diagnosis of neonatal hemolysis. If we are unable to sell sufficient numbers of our CoSense instruments and disposables, our revenues may be insufficient to achieve profitability.***

CoSense is our sole product approved for sale. As a result, we will derive substantially all of our revenues from sales of CoSense devices and consumables for the foreseeable future. If we cannot generate sufficient revenues from sales, we may be unable to finance our continuing operations.

***We have not commercialized any product in the past, and may not be successful in commercializing CoSense.***

We have no history of successful product launches. Our efforts to launch CoSense into the neonatology marketplace are subject to a variety of risks, any of which may prevent or limit sales of the CoSense instruments and consumables. Furthermore, commercialization of products into the medical marketplace is subject to a variety of regulations regarding the manner in which potential customers may be engaged, the manner in which

products may be lawfully advertised, and the claims that can be made for the benefits of the product, among other things. Our lack of experience with product launches may expose us to a higher than usual level of risk of non-compliance with these regulations, with consequences that may include fines or the removal of CoSense from the marketplace by regulatory authorities.

***If we are unable to execute our sales and marketing strategy for CoSense, and are unable to gain acceptance in the market, we may be unable to generate sufficient revenue to sustain our business.***

Although we believe that CoSense, and our planned products, represent promising commercial opportunities, our products may never gain significant acceptance in the marketplace and therefore may never generate substantial revenue or profits for us. We will need to establish a market for CoSense and build that market through physician education, awareness programs, and other marketing efforts. Gaining acceptance in medical communities depends on a variety of factors, including clinical data published or reported in reputable contexts, and word-of-mouth between physicians. The process of publication in leading medical journals is subject to a peer review process and peer reviewers may not consider the results of our studies sufficiently novel or worthy of publication. Failure to have our studies published in peer-reviewed journals may limit the adoption of our current test and our planned tests.

Our ability to successfully market CoSense and our future diagnostic products will depend on numerous factors, including:

- the outcomes of clinical utility studies of such diagnostics in collaboration with key thought leaders to demonstrate our products' value in informing important medical decisions such as treatment selection;
- the success of the sales force which we intend to hire with some of the proceeds of this offering;
- whether healthcare providers believe such tests provide clinical utility;
- whether the medical community accepts that such tests are sufficiently sensitive and specific to be meaningful in patient care and treatment decisions; and
- whether hospital administrators, health insurers, government health programs and other payors will cover and pay for such tests and, if so, whether they will adequately reimburse us.

Failure to achieve widespread market acceptance of CoSense and our other planned products would materially harm our business, financial condition and results of operations.

***If physicians decide not to order CoSense in significant numbers, we may be unable to generate sufficient revenue to sustain our business.***

To generate demand for CoSense and our other planned products, we will need to educate neonatologists, pediatricians, and other health care professionals on the clinical utility, benefits and value of the tests we provide through published papers, presentations at scientific conferences, educational programs and one-on-one education sessions by members of our sales force. In addition, we will need support of hospital administrators that the clinical and economic utility of CoSense justifies payment for the device and consumables at adequate pricing levels. We need to hire additional commercial, scientific, technical and other personnel to support this process.

In addition, the AAP guidelines for the management of hemolysis in neonates are subject to physician interpretation. We interpret the AAP guidelines to recommend the use of ETCO for the detection of hemolysis in neonates; however, the guidelines do not contain a concrete workflow for the diagnosis or treatment of hemolysis, so physicians may interpret the guidelines in a different way. Furthermore, AAP guidelines are

updated approximately every ten years, and the current guidelines were published in 2004, so the guidelines may change in the near term.

If we cannot convince medical practitioners to order and pay for our current test and our planned tests, and if we cannot convince institutions to pay for our current test and our planned tests, we will likely be unable to create demand in sufficient volume for us to achieve sustained profitability.

***If CoSense, or our other planned products, do not continue to perform as expected, our operating results, reputation and business will suffer.***

Our success depends on the market's confidence that CoSense and our other planned products can provide reliable, high-quality diagnostic results. We believe that our customers are likely to be particularly sensitive to test defects and errors, and prior products made by other companies for the same diagnostic purpose have failed in the marketplace, in part as a result of poor diagnostic accuracy. As a result, the failure of CoSense or our planned products to perform as expected would significantly impair our reputation and the clinical usefulness of such tests. Reduced sales might result, and we may also be subject to legal claims arising from any defects or errors.

***If our sole final-assembly manufacturing facility becomes damaged or inoperable, or we are required to vacate the facility, our ability to sell CoSense and to and pursue our research and development efforts may be jeopardized.***

We currently manufacture CoSense instruments and consumables. These are comprised of components sourced from a variety of contract manufacturers, with final assembly and calibration completed at our facility in Redwood City, California. We have recently moved these facilities from our prior location, a move which may be disruptive and risks interruption of manufacturing activities. We do not have any backup final-assembly facilities. We depend on contract manufacturers for our CoSense components, and for some of these we rely on a sole supplier. The San Francisco Bay area has experienced serious fires and power outages in the past, and is considered to lie in an area with significantly above-average earthquake risk. Our facilities and equipment, or those of our sole-source suppliers, could be harmed or rendered inoperable by natural or man-made disasters, including fire, earthquake, flooding and power outages. Any of these may render it difficult or impossible for us to manufacture products for some period of time. If our facility is inoperable for even a short period of time, the inability to manufacture our current products, and the interruption in research and development of our planned products, may result in the loss of customers or harm to our reputation or relationships with scientific or clinical collaborators; we may be unable to regain those customers or repair our reputation in the future. Furthermore, our facilities and the equipment we use to perform our research and development work could be costly and time-consuming to repair or replace.

***If we cannot compete successfully with other diagnostic modalities, we may be unable to increase or sustain our revenues or achieve and sustain profitability.***

Our principal competition comes from mainstream diagnostic methods, used by physicians for many years, which focus on invasive blood tests such as the Coombs test, blood counts and serum bilirubin. In addition, transcutaneous monitors of bilirubin also create a competitive threat. It may be difficult to change the methods or behavior of neonatologists and pediatricians to incorporate CoSense in their practices in conjunction with or instead of blood tests.

In addition, several larger companies have extensive sales presence in the neonatology area and could potentially develop non-invasive diagnostic tests that compete with CoSense or our planned products. These include General Electric Healthcare, Philips, Draeger, Covidien, Masimo, Natus Medical, and CAS Medical. Some of our present and potential competitors have widespread brand recognition and substantially greater financial and technical resources and development, production and marketing capabilities than we do. Others may develop lower-priced tests that payors and physicians could view as functionally equivalent to our current or

planned tests, which could force us to lower the list price of our tests. This would impact our operating margins and our ability to achieve and maintain profitability. If we cannot compete successfully against current or future competitors, we may be unable to increase or create market acceptance and sales of our current or planned tests, which could prevent us from increasing or sustaining our revenues or achieving or sustaining profitability.

***We expect to continue to incur significant expenses to develop and market additional diagnostic tests, which could make it difficult for us to achieve and sustain profitability.***

In recent years, we have incurred significant costs in connection with the development of CoSense. For the year ended December 31, 2012, our research and development expenses were $2.5 million, and for the year ended December 31, 2013, our research and development expenses were $2.4 million. We expect our expenses to increase for the foreseeable future, as we conduct studies of CoSense and continue to develop our planned products, including tests for nitric oxide and other analytes. We will also incur significant expenses to establish a sales and marketing organization, and to drive adoption of and reimbursement for our products. As a result, we need to generate significant revenues in order to achieve sustained profitability.

***Serenz may not be approved for sale in the U.S., or in any territory outside of the E.U.***

Neither we nor any future collaboration partner can commercialize Serenz in the U.S. without first obtaining regulatory approval for the product from the FDA. In the E.U., we previously obtained a CE Mark, clearing the device for commercial sale. However, upon our license of the product to Block Drug Company, a wholly-owned subsidiary of GlaxoSmithKline, or GSK, we discontinued the contract manufacturing relationships that formed a key element of the CE Mark documentation. An application for revival of the CE Mark will need to be submitted to the Notified Body for approval prior to commercialization of Serenz in the E.U. Furthermore, neither we, nor any future collaboration partner, can commercialize Serenz in any country outside of the E.U. without obtaining regulatory approval from comparable foreign regulatory authorities. The approval route for Serenz in the U.S. may be through a device approval or a drug-device combination approval. If it is a device approval pathway, it may be either via the premarket approval, or PMA, process, a *de novo* 510(k) pathway, or traditional 510(k). Additional randomized, controlled clinical trials may be necessary to obtain approval. The approval process may take several years to complete, and approval may never be obtained. Before obtaining regulatory approvals for the commercial sale of Serenz for treatment of AR, we must demonstrate with substantial evidence, gathered in preclinical and well-controlled clinical studies, that the planned product is safe and effective for use for that target indication. We may not conduct such a trial or may not successfully enroll or complete any such trial. Serenz may not achieve the required primary endpoint in the clinical trial, and Serenz may not receive regulatory approval. We must also demonstrate that the manufacturing facilities, processes and controls are adequate. Additionally, the FDA may determine that Serenz should be regulated as a combination product or as a drug, and in that case, the approval process would be further lengthened.

Moreover, obtaining regulatory approval for marketing of Serenz in one country does not ensure we will be able to obtain regulatory approval in other countries, while a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in other countries.

Even if we or any future collaboration partner were to successfully obtain a regulatory approval for Serenz, any approval might contain significant limitations related to use restrictions for specified age groups, warnings, precautions or contraindications, or may be subject to burdensome post-approval study or risk management requirements. If we are unable to obtain regulatory approval for Serenz in one or more jurisdictions, or any approval contains significant limitations, we may not be able to obtain sufficient revenue to justify commercial launch. Also, any regulatory approval of Serenz, once obtained, may be withdrawn. Even if we obtain regulatory approval for Serenz in additional countries, the commercial success of the product will depend on a number of factors, including the following:

- establishment of commercially viable pricing, and obtaining approval for adequate reimbursement from third-party and government payors;

- our ability, or that of third-party manufacturers that we may retain, to manufacture quantities of Serenz using commercially viable processes at a scale sufficient to meet anticipated demand and reduce our cost of manufacturing, and that are compliant with current Good Manufacturing Practices, or cGMP, regulations;

- our success in educating physicians and patients about the benefits, administration and use of Serenz;

- the availability, perceived advantages, relative cost, relative safety and relative efficacy of alternative and competing treatments;

- acceptance of Serenz as safe and effective by patients, caregivers and the medical community; and

- a continued acceptable safety profile of Serenz following approval.

Many of these factors are beyond our control. If we are unable to successfully commercialize Serenz, or unable to obtain a partner to commercialize it, we may not be able to earn any revenues related to Serenz. This would result in an adverse effect on our business, financial condition, results of operations and growth prospects.

***The regulatory approval process is expensive, time consuming and uncertain, and may prevent us or our partners from obtaining approval for the commercialization of Serenz or our other development candidates. Approval of Serenz in the U.S. or other territories may require that we, or a partner, conduct additional randomized, controlled clinical trials.***

The regulatory pathway for approval of Serenz in the U.S. has not been determined. However, there is a significant risk that the FDA will require us to file for approval via the PMA pathway for devices, or may classify Serenz as a drug-device combination that must be approved via the new drug application, or NDA, pathway typically used for drug products. In either of these cases, the FDA may require that additional randomized, controlled clinical trials be conducted before an application for approval can be filed. These are typically expensive and time consuming, and require substantial commitment of financial and personnel resources from the sponsoring company. These trials also entail significant risk, and the data that results may not be sufficient to support approval by the FDA or other regulatory bodies.

Furthermore, regulatory approval of either a PMA or an NDA is not guaranteed, and the filing and approval process itself is expensive and may take several years. The FDA also has substantial discretion in the approval process. Despite the time and expense exerted, failure may occur at any stage, and we could encounter problems that cause us to abandon or repeat clinical studies. The FDA can delay, limit, or deny approval of a future product for many reasons, including but not limited to:

- a future product may not be deemed to be safe and effective;

- FDA officials may not find the data from clinical and preclinical studies sufficient;

- the FDA may not approve our or our third-party manufacturer's processes or facilities; or

- the FDA may change its approval policies or adopt new regulations.

If Serenz, or our future products, fail to demonstrate safety and efficacy in further clinical studies that may be required, or do not gain regulatory approval, our business and results of operations will be materially and adversely harmed.

***The mechanism of action of Serenz has not been fully determined or validated.***

The exact mechanism of action(s) of Serenz is unknown. Therapeutics are increasingly focused on target-driven development, and an understanding of a future product's mechanism of action is typically believed to make development less risky. The FDA may view this as increasing the potential risks, and diminishing the

potential benefits, of Serenz. In addition, potential partners may view this as a limitation of the program, and it may be more challenging for us to obtain a partnership on favorable terms as a result.

***Because the results of preclinical testing and earlier clinical trials, and the results to date in various clinical trials, are not necessarily predictive of future results, Serenz may not have favorable results in later clinical trials or receive regulatory approval.***

Success in preclinical testing and early clinical trials does not ensure that later clinical trials will generate adequate data to demonstrate the efficacy and safety of an investigational product. A number of companies in the pharmaceutical and biotechnology industries, including those with greater resources and experience, have suffered significant setbacks in clinical trials, even after seeing promising results in earlier clinical trials. Despite the results to date in the various clinical studies performed with Serenz, we do not know whether pivotal clinical trials, if the FDA requires they be conducted, will demonstrate adequate efficacy and safety to result in regulatory approval to market Serenz. Even if we, or a future partner, believe that the data is adequate to support an application for regulatory approval to market our planned products, the FDA or other applicable foreign regulatory authorities may not agree and may require additional clinical trials. If these subsequent clinical trials do not produce favorable results, regulatory approval for Serenz may not be achieved.

There can be no assurance that Serenz will not exhibit new or increased safety risks in subsequent clinical trials. In addition, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many other companies that have believed their planned products performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain regulatory approval for the marketing of their products.

***Delays in the enrollment of patients in any of our clinical studies could increase development costs and delay completion of the study.***

We or any future collaboration partner may not be able to initiate or continue clinical studies for Serenz if we are unable to locate and enroll a sufficient number of eligible patients to participate in these studies as required by the FDA or other regulatory authorities. Even if a sufficient number of patients can be enrolled in clinical trials, if the pace of enrollment is slower than we expect, the development costs for our planned products may increase and the completion of our studies may be delayed, or the studies could become too expensive to complete.

***If clinical studies of Serenz or any of our planned products fail to demonstrate safety and efficacy to the satisfaction of the FDA or similar regulatory authorities outside the U.S. or do not otherwise produce positive results, we may incur additional costs, experience delays in completing or ultimately fail in completing the development and commercialization of Serenz or our planned products.***

Before obtaining regulatory approval for the sale of any planned product we must conduct extensive clinical studies to demonstrate the safety and efficacy of our planned products in humans. Clinical studies are expensive, difficult to design and implement, can take many years to complete and are uncertain as to outcome. A failure of one or more of our clinical studies could occur at any stage of testing.

Numerous unforeseen events during, or as a result of, clinical studies could occur, which would delay or prevent our ability to receive regulatory approval or commercialize Serenz or any of our planned products, including the following:

- clinical studies may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical studies or abandon product development programs;

- the number of patients required for clinical studies may be larger than we anticipate, enrollment in these clinical studies may be insufficient or slower than we anticipate or patients may drop out of these clinical studies at a higher rate than we anticipate;

- the cost of clinical studies or the manufacturing of our planned products may be greater than we anticipate;
- third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- we might have to suspend or terminate clinical studies of our planned products for various reasons, including a finding that our planned products have unanticipated serious side effects or other unexpected characteristics or that the patients are being exposed to unacceptable health risks;
- regulators may not approve our proposed clinical development plans;
- regulators or independent institutional review boards, or IRBs, may not authorize us or our investigators to commence a clinical study or conduct a clinical study at a prospective study site;
- regulators or IRBs may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements; and
- the supply or quality of our planned products or other materials necessary to conduct clinical studies of our planned products may be insufficient or inadequate.

If we or any future collaboration partner are required to conduct additional clinical trials or other testing of Serenz or any planned products beyond those that we contemplate, those clinical studies or other testing cannot be successfully completed, if the results of these studies or tests are not positive or are only modestly positive or if there are safety concerns, we may:

- be delayed in obtaining marketing approval for our planned products;
- not obtain marketing approval at all;
- obtain approval for indications that are not as broad as intended;
- have the product removed from the market after obtaining marketing approval;
- be subject to additional post-marketing testing requirements; or
- be subject to restrictions on how the product is distributed or used.

Our product development costs will also increase if we experience delays in testing or approvals. We do not know whether any clinical studies will begin as planned, will need to be restructured or will be completed on schedule, or at all.

Significant clinical study delays also could shorten any periods during which we may have the exclusive right to commercialize our planned products or allow our competitors to bring products to market before we do, which would impair our ability to commercialize our planned products and harm our business and results of operations.

***Even if subsequent clinical trials demonstrate acceptable safety and efficacy of Serenz for treatment of AR, the FDA or similar regulatory authorities outside the U.S. may not approve Serenz for marketing or may approve it with restrictions on the label, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.***

It is possible that the FDA or similar regulatory authorities may not consider the results of the clinical trials to be sufficient for approval of Serenz for this indication. In general, the FDA suggests that sponsors complete two

adequate and well-controlled clinical studies to demonstrate effectiveness because a conclusion based on two persuasive studies will be more compelling than a conclusion based on a single study. The FDA may nonetheless require that we may conduct additional clinical studies, possibly using a different clinical study design.

Moreover, even if the FDA or other regulatory authorities approve Serenz, the approval may include additional restrictions on the label that could make Serenz less attractive to physicians and patients compared to other products that may be approved for broader indications, which could limit potential sales of Serenz.

If we fail to obtain FDA or other regulatory approval of Serenz, or if the approval is narrower than what we seek, it could impair our ability to realize value from Serenz, and therefore may have a material adverse effect on our business, financial condition, results of operations and growth prospects.

***Even if Serenz or any planned products receive regulatory approval, these products may fail to achieve the degree of market acceptance by physicians, patients, caregivers, healthcare payors and others in the medical community necessary for commercial success.***

If Serenz or any planned products receive regulatory approval, they may nonetheless fail to gain sufficient market acceptance by physicians, hospital administrators, patients, healthcare payors and others in the medical community. The degree of market acceptance of our planned products, if approved for commercial sale, will depend on a number of factors, including the following:

- the prevalence and severity of any side effects;
- their efficacy and potential advantages compared to alternative treatments;
- the price we charge for our planned products;
- the willingness of physicians to change their current treatment practices;
- convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support; and
- the availability of third-party coverage or reimbursement.

For example, a number of companies offer therapies for treatment of AR patients based on a daily regimen, and physicians, patients or their families may not be willing to change their current treatment practices in favor of Serenz even if it is able to offer additional efficacy or more attractive product attributes. If Serenz or any planned products, if approved, do not achieve an adequate level of acceptance, we may not generate significant product revenue and we may not become profitable on a sustained basis or at all.

***We currently have limited sales and distribution personnel, and limited marketing capabilities. If we are unable to develop a sales and marketing and distribution capability on our own or through collaborations or other marketing partners, we will not be successful in commercializing CoSense, Serenz, or other planned products.***

We are currently building a sales and marketing infrastructure and have no experience in the sale, marketing or distribution of diagnostic or therapeutic products. To achieve commercial success for any approved product, we must either develop a sales and marketing organization or outsource these functions to third parties. We intend to commercialize CoSense with our own specialty sales force in the U.S., Canada and potentially other geographies. If we obtain regulatory approval, we intend to commercialize Serenz through third-party partners or distributors.

There are risks involved with both establishing our own sales and marketing capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force is expensive and time-consuming, and could delay any product launch. If the commercial launch of a planned product for which we recruit a sales force and establish marketing capabilities is delayed, or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

We also may not be successful entering into arrangements with third parties to sell and market our planned products or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively and could damage our reputation. If we do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our planned products.

***We may attempt to form partnerships in the future with respect to Serenz or other future products, but we may not be able to do so, which may cause us to alter our development and commercialization plans, and may cause us to terminate the Serenz program.***

We may form strategic alliances, create joint ventures or collaborations, or enter into licensing agreements with third parties that we believe will more effectively provide resources to develop and commercialize our programs. For example, we currently intend to identify one or more new partners or distributors for the commercialization of Serenz. We may also attempt to find one or more strategic partners for the development or commercialization of one or more of our other future products.

We face significant competition in seeking appropriate strategic partners, and the negotiation process to secure favorable terms is time-consuming and complex. In addition, the termination of our license agreement for Serenz with our former partner, may negatively impact the perception of Serenz held by other potential partners for the program. We may not be successful in our efforts to establish such a strategic partnership for any future products and programs on terms that are acceptable to us, or at all.

Any delays in identifying suitable collaborators and entering into agreements to develop or commercialize our future products could negatively impact the development or commercialization of our future products, particularly in geographic regions like the E.U., where we do not currently have development and commercialization infrastructure. Absent a partner or collaborator, we would need to undertake development or commercialization activities at our own expense. If we elect to fund and undertake development and commercialization activities on our own, we may need to obtain additional expertise and additional capital, which may not be available to us on acceptable terms or at all. If we are unable to do so, we may not be able to develop our future products or bring them to market, and our business may be materially and adversely affected.

***Serenz or our planned products may cause serious adverse side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial desirability of an approved label or result in significant negative consequences following any marketing approval.***

The risk of failure of clinical development is high. It is impossible to predict when or if this or any planned products will prove safe enough to receive regulatory approval. Undesirable side effects caused by Serenz or any of our planned products could cause us or regulatory authorities to interrupt, delay or halt clinical trials They could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign regulatory authority.

Additionally, if Serenz or any of our planned products receives marketing approval, and we or others later identify undesirable side effects caused by such product, a number of potentially significant negative consequences could result, including:

- we may be forced to recall such product and suspend the marketing of such product;

- regulatory authorities may withdraw their approvals of such product;
- regulatory authorities may require additional warnings on the label that could diminish the usage or otherwise limit the commercial success of such products;
- the FDA or other regulatory bodies may issue safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings about such product;
- the FDA may require the establishment or modification of Risk Evaluation Mitigation Strategies or a comparable foreign regulatory authority may require the establishment or modification of a similar strategy that may, for instance, restrict distribution of our products and impose burdensome implementation requirements on us;
- we may be required to change the way the product is administered or conduct additional clinical trials;
- we could be sued and held liable for harm caused to subjects or patients;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular planned product, if approved.

***We face competition, which may result in others discovering, developing or commercializing products before we do, or more successfully than we do.***

Alternatives exist for CoSense and for Serenz, and we will likely face competition with respect to any planned products that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies, medical device companies, and biotechnology companies worldwide. There are several large pharmaceutical and biotechnology companies that currently market and sell AR therapies to our target patient group. These companies may reduce prices for their competing drugs in an effort to gain or retain market share, and undermine the value proposition that Serenz or CoSense might otherwise be able to offer to payors. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization. Many of these competitors are attempting to develop therapeutics for our target indications.

Smaller or early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified technical and management personnel, establishing clinical study sites and patient registration for clinical studies, as well as in acquiring technologies complementary to, or necessary for, our programs.

***Even if we are able to commercialize CoSense, Serenz, or any planned products, or to obtain a partner to commercialize Serenz, the products may become subject to unfavorable pricing regulations, third-party reimbursement practices or healthcare reform initiatives, thereby harming our business.***

The regulations that govern marketing approvals, pricing and reimbursement for new products vary widely from country to country. Some countries require approval of the sale price of a product before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some foreign markets, pricing remains subject to continuing governmental control even after initial approval is granted.

As a result, we might obtain regulatory approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product and negatively impact the revenue we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more planned products, even if our planned products obtain regulatory approval.

Our ability to commercialize CoSense or any planned products successfully also will depend in part on the extent to which reimbursement for these products and related treatments becomes available from government health administration authorities, private health insurers and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and these third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. We cannot be sure that reimbursement will be available for any product that we commercialize and, if reimbursement is available, what the level of reimbursement will be. Reimbursement may impact the demand for, or the price of, any product for which we obtain marketing approval. Obtaining reimbursement for our products may be particularly difficult because of the higher prices often associated with products administered under the supervision of a physician. If reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any planned product that we successfully develop.

While we expect payments for CoSense to be part of a Diagnosis-Related Group, or DRG, (also known as a bundled payment) we may have to obtain reimbursement for it from payors directly. There may be significant delays in obtaining reimbursement for CoSense, and coverage may be more limited than the purposes for which the product is approved by the FDA or regulatory authorities in other countries. Moreover, eligibility for reimbursement does not imply that any product will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim payments for new products, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Payment rates may vary according to the use of the product and the clinical setting in which it is used, may be based on payments allowed for lower cost products that are already reimbursed and may be incorporated into existing payments for other services. Net prices for products may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of products from countries where they may be sold at lower prices than in the U.S. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. Our inability to promptly obtain coverage and profitable payment rates from both government funded and private payors for new products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition. In some foreign countries, including major markets in the E.U. and Japan, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take nine to twelve months or longer after the receipt of regulatory marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product to other available therapies. Our business could be materially harmed if reimbursement of CoSense, if any, is unavailable or limited in scope or amount or if pricing is set at unsatisfactory levels.

Similar risks apply to the reimbursement of Serenz.

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

We face an inherent risk of product liability exposure related to the sale of CoSense and any planned products in human clinical studies. The marketing, sale and use of CoSense and our planned products could lead to the filing of product liability claims against us if someone alleges that our tests failed to perform as designed. We may also be subject to liability for a misunderstanding of, or inappropriate reliance upon, the information we

provide. If we cannot successfully defend ourselves against claims that CoSense or our planned products caused injuries, we may incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any planned products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of patients from clinical studies or cancellation of studies;
- significant costs to defend the related litigation and distraction to our management team;
- substantial monetary awards to patients;
- loss of revenue; and
- the inability to commercialize any products that we may develop.

We currently hold $5.0 million in product liability insurance coverage, which may not be adequate to cover all liabilities that we may incur. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

***The loss of key members of our executive management team could adversely affect our business.***

Our success in implementing our business strategy depends largely on the skills, experience and performance of key members of our executive management team and others in key management positions, including Dr. Anish Bhatnagar, our Chief Executive Officer, Anthony Wondka, our Vice President of Research and Development, Gina Phelps, our Vice President of Sales, and Antoun Nabhan, our Vice President of Corporate Development. The collective efforts of each of these persons, and others working with them as a team, are critical to us as we continue to develop our technologies, tests and research and development and sales programs. As a result of the difficulty in locating qualified new management, the loss or incapacity of existing members of our executive management team could adversely affect our operations. If we were to lose one or more of these key employees, we could experience difficulties in finding qualified successors, competing effectively, developing our technologies and implementing our business strategy. Our Chief Executive Officer, Vice President of Sales, Vice President of Corporate Development and Vice President of Research and Development have employment agreements, however, the existence of an employment agreement does not guarantee retention of members of our executive management team and we may not be able to retain those individuals for the duration of or beyond the end of their respective terms. We do not maintain “key person” life insurance on any of our employees.

In addition, we rely on collaborators, consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our collaborators, consultants and advisors are generally employed by employers other than us and may have commitments under agreements with other entities that may limit their availability to us.

The loss of a key employee, the failure of a key employee to perform in his or her current position or our inability to attract and retain skilled employees could result in our inability to continue to grow our business or to implement our business strategy.

***There is a scarcity of experienced professionals in our industry. If we are not able to retain and recruit personnel with the requisite technical skills, we may be unable to successfully execute our business strategy.***

The specialized nature of our industry results in an inherent scarcity of experienced personnel in the field. Our future success depends upon our ability to attract and retain highly skilled personnel, including scientific, technical, commercial, business, regulatory and administrative personnel, necessary to support our anticipated growth, develop our business and perform certain contractual obligations. Given the scarcity of professionals with the scientific knowledge that we require and the competition for qualified personnel among life science businesses, we may not succeed in attracting or retaining the personnel we require to continue and grow our operations.

***Our inability to attract, hire and retain a sufficient number of qualified sales professionals would hamper our ability to increase demand for CoSense, to expand geographically and to successfully commercialize any other products we may develop.***

To succeed in selling CoSense and any other products that we are able to develop, we must develop a sales force in the U.S. and internationally by recruiting sales representatives with extensive experience in neonatology and close relationships with neonatologists, pediatricians, nurses, and other hospital personnel. To achieve our marketing and sales goals, we will need to build our sales and commercial infrastructure, with which to date we have had little experience. Sales professionals with the necessary technical and business qualifications are in high demand, and there is a risk that we may be unable to attract, hire and retain the number of sales professionals with the right qualifications, scientific backgrounds and relationships with decision-makers at potential customers needed to achieve our sales goals. We expect to face competition from other companies in our industry, some of whom are much larger than us and who can pay greater compensation and benefits than we can, in seeking to attract and retain qualified sales and marketing employees. If we are unable to hire and retain qualified sales and marketing personnel, our business will suffer.

***We may encounter manufacturing problems or delays that could result in lost revenue. Additionally, we currently rely on third-party suppliers for critical materials needed to manufacture CoSense instruments and consumables, as well as our planned products. Any problems experienced by these suppliers could result in a delay or interruption of their supply to us, and as a result, we may face delays in the commercialization of CoSense or the development and commercialization of planned products.***

We perform final assembly of CoSense instruments and consumables at our facility in Redwood City, CA. We believe that we currently have adequate manufacturing capacity. If demand for our current products and our planned products increases significantly, we will need to either expand our manufacturing capabilities or outsource to other manufacturers. We currently have limited experience in commercial-scale manufacturing of our planned products, and we currently rely upon third-party contract manufacturing organizations to manufacture and supply components for our CoSense instrument and consumables. The manufacture of these products in compliance with the FDA's regulations requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of medical device products often encounter difficulties in production, including difficulties with production costs and yields, quality control, quality assurance testing, shortages of qualified personnel, as well as compliance with strictly enforced FDA requirements, other federal and state regulatory requirements, and foreign regulations.

We currently purchase components for the CoSense instruments and consumables under purchase orders and do not have long-term contracts with most of the suppliers of these materials. If suppliers were to delay or stop producing our components, or if the prices they charge us were to increase significantly, or if they elected not to sell to us, we would need to identify other suppliers. We could experience delays in manufacturing the instruments or consumables while finding another acceptable supplier, which could impact our results of operations. The changes could also result in increased costs associated with qualifying the new materials or reagents and in increased operating costs. Further, any prolonged disruption in a supplier's operations could have

a significant negative impact on our ability to manufacture and deliver products in a timely manner. Some of the components used in our CoSense are currently sole-source, and substitutes for these components might not be able to be obtained easily or may require substantial design or manufacturing modifications. Any significant problem experienced by one of our sole source suppliers may result in a delay or interruption in the supply of components to us because the number of third-party manufacturers with the necessary manufacturing and regulatory expertise and facilities is limited. Any delay or interruption would likely lead to a delay or interruption in our manufacturing operations. The inclusion of substitute components must meet our product specifications and could require us to qualify the new supplier with the appropriate government regulatory authorities. It could be expensive and take a significant amount of time to arrange for alternative suppliers, which could have a material adverse effect on our business. New manufacturers of any planned product would be required to qualify under applicable regulatory requirements and would need to have sufficient rights under applicable intellectual property laws to the method of manufacturing the planned product. Obtaining the necessary FDA approvals or other qualifications under applicable regulatory requirements and ensuring non-infringement of third-party intellectual property rights could result in a significant interruption of supply and could require the new manufacturer to bear significant additional costs that may be passed on to us.

***We may acquire other businesses or form joint ventures or make investments in other companies or technologies that could harm our operating results, dilute our stockholders' ownership, increase our debt or cause us to incur significant expense.***

As part of our business strategy, we may pursue acquisitions or licenses of assets or acquisitions of businesses. We also may pursue strategic alliances and joint ventures that leverage our core technology and industry experience to expand our product offerings or sales and distribution resources. Our company has limited experience with acquiring other companies, acquiring or licensing assets or forming strategic alliances and joint ventures. We may not be able to find suitable partners or acquisition candidates, and we may not be able to complete such transactions on favorable terms, if at all. If we make any acquisitions, we may not be able to integrate these acquisitions successfully into our existing business, and we could assume unknown or contingent liabilities. Any future acquisitions also could result in significant write-offs or the incurrence of debt and contingent liabilities, any of which could have a material adverse effect on our financial condition, results of operations and cash flows. Integration of an acquired company also may disrupt ongoing operations and require management resources that would otherwise focus on developing our existing business. We may experience losses related to investments in other companies, which could have a material negative effect on our results of operations. We may not identify or complete these transactions in a timely manner, on a cost-effective basis, or at all, and we may not realize the anticipated benefits of any acquisition, license, strategic alliance or joint venture. To finance such a transaction we may choose to issue shares of our common stock as consideration, which would dilute the ownership of our stockholders. If the price of our common stock is low or volatile, we may not be able to acquire other companies or fund a joint venture project using our stock as consideration. Alternatively, it may be necessary for us to raise additional funds for acquisitions through public or private financings. Additional funds may not be available on terms that are favorable to us, or at all.

***International expansion of our business will expose us to business, regulatory, political, operational, financial and economic risks associated with doing business outside of the U.S.***

Our business strategy contemplates international expansion, including partnering with medical device distributors, and introducing CoSense and other planned products outside the U.S. Doing business internationally involves a number of risks, including:

- multiple, conflicting and changing laws and regulations such as tax laws, export and import restrictions, employment laws, regulatory requirements and other governmental approvals, permits and licenses;

- potential failure by us or our distributors to obtain regulatory approvals for the sale or use of our current test and our planned future tests in various countries;

- difficulties in managing foreign operations;
- complexities associated with managing government payor systems, multiple payor-reimbursement regimes or self-pay systems;
- logistics and regulations associated with shipping products, including infrastructure conditions and transportation delays;
- limits on our ability to penetrate international markets if our distributors do not execute successfully;
- financial risks, such as longer payment cycles, difficulty enforcing contracts and collecting accounts receivable, and exposure to foreign currency exchange rate fluctuations;
- reduced protection for intellectual property rights, or lack of them in certain jurisdictions, forcing more reliance on our trade secrets, if available;
- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions; and
- failure to comply with the Foreign Corrupt Practices Act, including its books and records provisions and its anti-bribery provisions, by maintaining accurate information and control over sales activities and distributors' activities.

Any of these risks, if encountered, could significantly harm our future international expansion and operations and, consequently, have a material adverse effect on our financial condition, results of operations and cash flows.

***Intrusions into our computer systems could result in compromise of confidential information.***

The diagnostic accuracy of CoSense depends, in part, on the function of software run by the microprocessors embedded in the device. This software is proprietary to us. While we have made efforts to test the software extensively, it is potentially subject to malfunction. It may be vulnerable to physical break-ins, hackers, improper employee or contractor access, computer viruses, programming errors, or similar problems. Any of these might result in confidential medical, business or other information of other persons or of ourselves being revealed to unauthorized persons.

The CoSense device also stores test results, a feature which assists medical professionals in interfacing the device with electronic medical records systems. There are a number of state, federal and international laws protecting the privacy and security of health information and personal data. As part of the American Recovery and Reinvestment Act 2009, or ARRA, Congress amended the privacy and security provisions of the Health Insurance Portability and Accountability Act, or HIPAA. HIPAA imposes limitations on the use and disclosure of an individual's healthcare information by healthcare providers, healthcare clearinghouses, and health insurance plans, collectively referred to as covered entities. The HIPAA amendments also impose compliance obligations and corresponding penalties for non-compliance on individuals and entities that provide services to healthcare providers and other covered entities, collectively referred to as business associates. ARRA also made significant increases in the penalties for improper use or disclosure of an individual's health information under HIPAA and extended enforcement authority to state attorneys general. The amendments also create notification requirements for individuals whose health information has been inappropriately accessed or disclosed: notification requirements to federal regulators and in some cases, notification to local and national media. Notification is not required under HIPAA if the health information that is improperly used or disclosed is deemed secured in accordance with encryption or other standards developed by the U.S. Department of Health and Human Services, or HHS. Most states have laws requiring notification of affected individuals and state regulators in the event of a breach of personal information, which is a broader class of information than the health

information protected by HIPAA. Many state laws impose significant data security requirements, such as encryption or mandatory contractual terms to ensure ongoing protection of personal information. Activities outside of the U.S. implicate local and national data protection standards, impose additional compliance requirements and generate additional risks of enforcement for non-compliance. We may be required to expend significant capital and other resources to ensure ongoing compliance with applicable privacy and data security laws, to protect against security breaches and hackers or to alleviate problems caused by such breaches.

**Risks related to the operation of our business**

***Any future distribution or commercialization agreements we may enter into for CoSense, Serenz, or any other planned product, may place the development of these products outside our control, may require us to relinquish important rights, or may otherwise be on terms unfavorable to us.***

We may enter into additional distribution or commercialization agreements with third parties with respect to CoSense, to Serenz, or with respect to planned products, for commercialization in or outside the U.S. Our likely collaborators for any distribution, marketing, licensing or other collaboration arrangements include large and mid-size medical device and diagnostic companies, regional and national medical device and diagnostic companies, and distribution or group purchasing organizations. We will have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of our planned products. Our ability to generate revenue from these arrangements will depend in part on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements.

Collaborations involving our planned products are subject to numerous risks, which may include the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to any such collaborations;
- collaborators may not pursue development and commercialization of CoSense or our other planned products, or may elect not to continue or renew efforts based on clinical study results, changes in their strategic focus for a variety of reasons, potentially including the acquisition of competitive products, availability of funding, and mergers or acquisitions that divert resources or create competing priorities;
- collaborators may delay clinical studies, provide insufficient funding for a clinical study program, stop a clinical study, abandon a planned product, repeat or conduct new clinical studies or require a new engineering iterations of a planned product for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or planned products;
- a collaborator with marketing and distribution rights to one or more products may not commit sufficient resources to their marketing and distribution;
- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that causes the delay or termination of the research, development or commercialization of our planned products or that results in costly litigation or arbitration that diverts management attention and resources;

- collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable planned products; and

- collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we would not have the exclusive right to commercialize such intellectual property.

Any termination or disruption of collaborations could result in delays in the development of planned products, increases in our costs to develop the planned products or the termination of development of a planned product.

***Our future success depends on our ability to retain our chief executive officer and other key executives and to attract, retain and motivate qualified personnel.***

We are highly dependent on our chief executive officer and the other principal members of our executive team. Under the terms of their employment, our executives may terminate their employment with us at any time. The loss of the services of any of these people could impede the achievement of our research, development and commercialization objectives.

Recruiting and retaining qualified scientific, clinical, manufacturing and sales and marketing personnel will also be critical to our success. We may not be able to attract and retain these personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us.

***We expect to expand our development, regulatory and sales and marketing capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.***

As of June 30, 2014, we had seven employees and seven full-time or part-time consultants. Over the next several years, we expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of engineering, product development, regulatory affairs and sales and marketing. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The physical expansion of our operations may lead to significant costs and may divert our management and business development resources. Future growth would impose significant added responsibilities on members of management, including:

- managing our clinical trials effectively, which we anticipate being conducted at numerous clinical sites;

- identifying, recruiting, maintaining, motivating and integrating additional employees with the expertise and experience we will require;

- managing our internal development efforts effectively while complying with our contractual obligations to licensors, licensees, contractors and other third parties;

- managing additional relationships with various strategic partners, suppliers and other third parties;

- improving our managerial, development, operational and finance reporting systems and procedures; and
- expanding our facilities.

Our failure to accomplish any of these tasks could prevent us from successfully growing. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

***Because we intend to commercialize CoSense outside the U.S., we will be subject to additional risks.***

A variety of risks associated with international operations could materially adversely affect our business, including:

- different regulatory requirements for device approvals in foreign countries;
- reduced protection for intellectual property rights;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- economic weakness, including inflation or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- foreign taxes, including withholding of payroll taxes;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenue, and other obligations incident to doing business in another country;
- workforce uncertainty in countries where labor unrest is more common than in the U.S.;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from geopolitical actions, including war and terrorism, or natural disasters including earthquakes, typhoons, floods and fires.

***We rely on third parties to conduct certain components of our clinical studies, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such studies.***

We rely on third parties, such as contract research organizations, or CROs, clinical data management organizations, medical institutions and clinical investigators, to perform various functions for our clinical trials. Our reliance on these third parties for clinical development activities reduces our control over these activities but does not relieve us of our responsibilities. We remain responsible for ensuring that each of our clinical studies is conducted in accordance with the general investigational plan and protocols for the study. Moreover, the FDA requires us to comply with standards, commonly referred to as good clinical practices, for conducting, recording and reporting the results of clinical studies to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of patients in clinical studies are protected. Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical studies in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, regulatory approvals for our planned products and will not be able to, or may be delayed in our efforts to, successfully commercialize our planned products.

***If we use biological and hazardous materials in a manner that causes injury, we could be liable for damages.***

Our manufacturing processes currently require the controlled use of potentially harmful chemicals. We cannot eliminate the risk of accidental contamination or injury to employees or third parties from the use, storage, handling or disposal of these materials. In the event of contamination or injury, we could be held liable for any resulting damages, and any liability could exceed our resources or any applicable insurance coverage we may have. Additionally, we are subject to, on an ongoing basis, federal, state and local laws and regulations governing the use, storage, handling and disposal of these materials and specified waste products. These are particularly stringent in California, where our manufacturing facility and several suppliers are located. The cost of compliance with these laws and regulations may become significant and could have a material adverse effect on our financial condition, results of operations and cash flows. In the event of an accident or if we otherwise fail to comply with applicable regulations, we could lose our permits or approvals or be held liable for damages or penalized with fines.

**Risks related to intellectual property**

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

Patent litigation is prevalent in the medical device and diagnostic sectors. Our commercial success depends upon our ability and the ability of our distributors, contract manufacturers, and suppliers to manufacture, market, and sell our planned products, and to use our proprietary technologies without infringing, misappropriating or otherwise violating the proprietary rights or intellectual property of third parties. We may become party to, or be threatened with, future adversarial proceedings or litigation regarding intellectual property rights with respect to our products and technology. Third parties may assert infringement claims against us based on existing or future intellectual property rights. If we are found to infringe a third-party's intellectual property rights, we could be required to obtain a license from such third-party to continue developing and marketing our products and technology. We may also elect to enter into such a license in order to settle pending or threatened litigation. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us, and could require us to pay significant royalties and other fees. We could be forced, including by court order, to cease commercializing the infringing technology or product. In addition, we could be found liable for monetary damages. A finding of infringement could prevent us from commercializing our planned products or force us to cease some of our business operations, which could materially harm our business. Many of our employees were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these employees have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employer. These and other claims that we have misappropriated the confidential information or trade secrets of third parties can have a similar negative impact on our business to the infringement claims discussed above.

Even if we are successful in defending against intellectual property claims, litigation or other legal proceedings relating to such claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce our resources available for development activities. We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of

such litigation or proceedings more effectively than we can because of their substantially greater financial resources. Uncertainties resulting from the initiation and continuation of litigation or other intellectual property related proceedings could have a material adverse effect on our ability to compete in the marketplace.

***If we fail to comply with our obligations in our intellectual property agreements, we could lose intellectual property rights that are important to our business.***

We are a party to intellectual property arrangements and expect that our future license agreements will impose, various diligence, milestone payment, royalty, insurance and other obligations on us. If we fail to comply with these obligations, any licensor may have the right to terminate such agreements, in which event we may not be able to develop and market any product that is covered by such agreements. For example, we entered into an asset purchase agreement with BDDI on May 11, 2010, pursuant to which we have ongoing payment obligations relating to CoSense. A breach of this agreement would therefore materially adversely affect our ability to commercialize CoSense as currently planned. BDDI has the right to terminate the agreement upon 60 days' written notice in the event that we fail to make any royalty payment when due and do not remedy such failure after notice. Termination of this agreement, or reduction or elimination of our rights under it or any other agreement, may result in our having to negotiate new or reinstated arrangements on less favorable terms, or our not having sufficient intellectual property rights to operate our business. The occurrence of such events could materially harm our business and financial condition.

The risks described elsewhere pertaining to our intellectual property rights also apply to any intellectual property rights that we may license, and any failure by us or any future licensor to obtain, maintain, defend and enforce these rights could have a material adverse effect on our business.

***Our ability to successfully commercialize our technology and products may be materially adversely affected if we are unable to obtain and maintain effective intellectual property rights for our technologies and planned products, or if the scope of the intellectual property protection is not sufficiently broad.***

Our success depends in large part on our ability to obtain and maintain patent and other intellectual property protection in the U.S. and in other countries with respect to our proprietary technology and products.

The patent position of medical device and diagnostic companies generally is highly uncertain and involves complex legal and factual questions for which legal principles remain unresolved. In recent years patent rights have been the subject of significant litigation. As a result, the issuance, scope, validity, enforceability and commercial value of the patent rights we rely on are highly uncertain. Pending and future patent applications may not result in patents being issued which protect our technology or products or which effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the U.S. and other countries may diminish the value of the patents we rely on or narrow the scope of our patent protection. The laws of foreign countries may not protect our rights to the same extent as the laws of the U.S. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the U.S. and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we were the first to make the inventions claimed in our patents or pending patent applications, or that we or were the first to file for patent protection of such inventions.

Even if the patent applications we rely on issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our patents by developing similar or alternative technologies or products in a non-infringing manner. The issuance of a patent is not conclusive as to its scope, validity or enforceability, and the patents we rely on may be challenged in the courts or patent offices in the U.S. and abroad. Such challenges may result in patent claims being narrowed, invalidated or held unenforceable, which could limit our ability to stop or prevent us from stopping others from using or

commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. Given the amount of time required for the development, testing and regulatory review of new planned products, patents protecting such products might expire before or shortly after such products are commercialized. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours or otherwise provide us with a competitive advantage.

***We may become involved in legal proceedings to protect or enforce our intellectual property rights, which could be expensive, time-consuming, or unsuccessful.***

Competitors may infringe or otherwise violate the patents we rely on, or our other intellectual property rights. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. Any claims that we assert against perceived infringers could also provoke these parties to assert counterclaims against us alleging that we infringe their intellectual property rights. In addition, in an infringement proceeding, a court may decide that a patent we are asserting is invalid or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that the patents we are asserting do not cover the technology in question. An adverse result in any litigation proceeding could put one or more patents at risk of being invalidated or interpreted narrowly. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation.

Interference or derivation proceedings provoked by third parties or brought by the U.S. Patent and Trademark Office, or USPTO, or any foreign patent authority may be necessary to determine the priority of inventions or other matters of inventorship with respect to patents and patent applications. We may become involved in proceedings, including oppositions, interferences, derivation proceedings inter partes reviews, patent nullification proceedings, or re-examinations, challenging our patent rights or the patent rights of others, and the outcome of any such proceedings are highly uncertain. An adverse determination in any such proceeding could reduce the scope of, or invalidate, important patent rights, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. Our business also could be harmed if a prevailing party does not offer us a license on commercially reasonable terms, if any license is offered at all. Litigation or other proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. We may also become involved in disputes with others regarding the ownership of intellectual property rights. If we are unable to resolve these disputes, we could lose valuable intellectual property rights.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical or management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the market price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. Uncertainties resulting from the initiation and continuation of intellectual property litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

***If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected, harming our business and competitive position.***

In addition to our patented technology and products, we rely upon confidential proprietary information, including trade secrets, unpatented know-how, technology and other proprietary information, to develop and maintain our competitive position. Any disclosure to or misappropriation by third parties of our confidential proprietary information could enable competitors to quickly duplicate or surpass our technological achievements,

thus eroding our competitive position in the market. We seek to protect our confidential proprietary information, in part, by confidentiality agreements with our employees and our collaborators and consultants. We also have agreements with our employees and selected consultants that obligate them to assign their inventions to us. These agreements are designed to protect our proprietary information, however, we cannot be certain that our trade secrets and other confidential information will not be disclosed or that competitors will not otherwise gain access to our trade secrets, or that technology relevant to our business will not be independently developed by a person that is not a party to such an agreement. Furthermore, if the employees, consultants or collaborators that are parties to these agreements breach or violate the terms of these agreements, we may not have adequate remedies for any such breach or violation, and we could lose our trade secrets through such breaches or violations. Further, our trade secrets could be disclosed, misappropriated or otherwise become known or be independently discovered by our competitors. In addition, intellectual property laws in foreign countries may not protect trade secrets and confidential information to the same extent as the laws of the U.S. If we are unable to prevent disclosure of the intellectual property related to our technologies to third parties, we may not be able to establish or maintain a competitive advantage in our market, which would harm our ability to protect our rights and have a material adverse effect on our business.

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

Filing, prosecuting and defending patents on all of our planned products throughout the world would be prohibitively expensive to us. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection but where enforcement is not as strong as in the U.S. These products may compete with our products in jurisdictions where we do not have any issued patents and our patent claims or other intellectual property rights may not be effective or sufficient to prevent them from so competing. Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biopharmaceuticals, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

***Intellectual property rights do not necessarily address all potential threats to our competitive advantage.***

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

- Others may be able to make products that are similar to CoSense or other planned products, but that are not covered by claims in our patents;
- The original filers of the patents we purchased from BDDI might not have been the first to make the inventions covered by the claims contained in such patents;
- We might not have been the first to file patent applications covering an invention;
- Others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- Pending patent applications may not lead to issued patents;
- Issued patents may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors;

- Our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;

- We may not develop or in-license additional proprietary technologies that are patentable; and

- The patents of others may have an adverse effect on our business.

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

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

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents or applications will be due to be paid by us to the USPTO and various governmental patent agencies outside of the U.S. in several stages over the lifetime of the patents or applications. The USPTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. In many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to use our technologies and this circumstance would have a material adverse effect on our business.

***Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of our issued patents.***

In March 2013, under the recently enacted America Invents Act, or AIA, the U.S. moved to a first-to-file system and made certain other changes to its patent laws. The effects of these changes are currently unclear as the USPTO must still implement various regulations, the courts have yet to address these provisions and the applicability of the act and new regulations on specific patents discussed herein have not been determined and would need to be reviewed. Accordingly, it is not yet clear what, if any, impact the AIA will have on the operation of our business. However, the AIA and its implementation could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents, all of which could have a material adverse effect on our business and financial condition.

***If we do not obtain a patent term extension in the U.S. under the Hatch-Waxman Act and in foreign countries under similar legislation, thereby potentially extending the term of our marketing exclusivity for our planned products, our business may be materially harmed.***

Depending upon the timing, duration and specifics of FDA marketing approval of our products, if any, one or more of the U.S. patents covering any such approved product(s) or the use thereof may be eligible for up to five years of patent term restoration under the Hatch-Waxman Act. The Hatch-Waxman Act allows a maximum of one patent to be extended per FDA approved product. Patent term extension also may be available in certain foreign countries upon regulatory approval of our planned products. Nevertheless, we may not be granted patent term extension either in the U.S. or in any foreign country because of, for example, our failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy applicable requirements. Moreover, the term of extension, as well as the scope of patent protection during any such extension, afforded by the governmental authority could be less than we request.

If we are unable to obtain patent term extension or restoration, or the term of any such extension is less than requested, the period during which we will have the right to exclusively market our product will be

shortened and our competitors may obtain approval of competing products following our patent expiration, and our revenue could be reduced, possibly materially.

**Risks related to government regulation**

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

The research, testing, manufacturing, labeling, approval, selling, import, export, marketing and distribution of medical devices are subject to extensive regulation by the FDA and other regulatory authorities in the U.S. and other countries, which regulations differ from country to country. We are not permitted to market our planned products in the U.S. until we received the requisite approval or clearance from the FDA. We have not submitted an application or received marketing approval for Serenz or any planned products. Obtaining PMA or 510(k) clearance for a medical device from the FDA can be a lengthy, expensive and uncertain process. In addition, failure to comply with FDA and other applicable U.S. and foreign regulatory requirements may subject us to administrative or judicially imposed sanctions, including the following:

- warning letters;
- civil or criminal penalties and fines;
- injunctions;
- suspension or withdrawal of regulatory approval;
- suspension of any ongoing clinical studies;
- voluntary or mandatory product recalls and publicity requirements;
- refusal to accept or approve applications for marketing approval of new drugs or biologics or supplements to approved applications filed by us;
- restrictions on operations, including costly new manufacturing requirements; or
- seizure or detention of our products or import bans.

Prior to receiving approval to commercialize any of our planned products in the U.S. or abroad, we may be required to demonstrate with substantial evidence from well-controlled clinical studies, and to the satisfaction of the FDA and other regulatory authorities abroad, that such planned products are safe and effective for their intended uses. Results from preclinical studies and clinical studies can be interpreted in different ways. Even if we believe the preclinical or clinical data for our planned products are promising, such data may not be sufficient to support approval by the FDA and other regulatory authorities. Administering any of our planned products to humans may produce undesirable side effects, which could interrupt, delay or cause suspension of clinical studies of our planned products and result in the FDA or other regulatory authorities denying approval of our planned products for any or all targeted indications.

Regulatory approval from the FDA is not guaranteed, and the approval process is expensive and may take several years. The FDA also has substantial discretion in the approval process. Despite the time and expense exerted, failure can occur at any stage, and we could encounter problems that cause us to abandon or repeat clinical studies, or perform additional preclinical studies and clinical studies. The number of preclinical studies and clinical studies that will be required for FDA approval varies depending on the planned product, the disease

or condition that the planned product is designed to address and the regulations applicable to any particular planned product. The FDA can delay, limit or deny approval of a planned product for many reasons, including, but not limited to, the following:

- a planned product may not be deemed safe or effective;
- FDA officials may not find the data from preclinical studies and clinical studies sufficient;
- the FDA might not approve our or our third-party manufacturer's processes or facilities; or
- the FDA may change its approval policies or adopt new regulations.

If Serenz or any planned products fail to demonstrate safety and efficacy in clinical studies or do not gain regulatory approval, our business and results of operations will be materially and adversely harmed.

***Even if we receive regulatory approval for a planned product, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and subject us to penalties if we fail to comply with applicable regulatory requirements.***

Once regulatory approval has been obtained, the approved product and its manufacturer are subject to continual review by the FDA or non-U.S. regulatory authorities. Our regulatory approval for CoSense, as well as any regulatory approval that we receive for Serenz or for any planned products may be subject to limitations on the indicated uses for which the product may be marketed. Future approvals may contain requirements for potentially costly post-marketing follow-up studies to monitor the safety and efficacy of the approved product. In addition, we are subject to extensive and ongoing regulatory requirements by the FDA and other regulatory authorities with regard to the labeling, packaging, adverse event reporting, storage, advertising, promotion and recordkeeping for our products. In addition, we are required to comply with cGMP regulations regarding the manufacture of Serenz, which include requirements related to quality control and quality assurance as well as the corresponding maintenance of records and documentation. Further, regulatory authorities must approve these manufacturing facilities before they can be used to manufacture drug products, and these facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP regulations. If we or a third party discover previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory authority may impose restrictions on that product, the manufacturer or us, including requiring withdrawal of the product from the market or suspension of manufacturing.

***Failure to obtain regulatory approvals in foreign jurisdictions will prevent us from marketing our products internationally.***

We intend to seek a distribution and marketing partner for CoSense outside the U.S. and may market planned products in international markets. We have obtained a CE Mark for CoSense and it is therefore authorized for sale in the E.U.; however, in order to market our planned products in Asia, Latin America and other foreign jurisdictions, we must obtain separate regulatory approvals.

We have had limited interactions with foreign regulatory authorities. The approval procedures vary among countries and can involve additional clinical testing, and the time required to obtain approval may differ from that required to obtain FDA approval. Moreover, clinical studies or manufacturing processes conducted in one country may not be accepted by regulatory authorities in other countries. Approval by the FDA does not ensure approval by regulatory authorities in other countries, and approval by one or more foreign regulatory authorities does not ensure approval by regulatory authorities in other foreign countries or by the FDA. However, a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in others. The foreign regulatory approval process may include all of the risks associated with obtaining

FDA approval. We may not obtain foreign regulatory approvals on a timely basis, if at all. We may not be able to file for regulatory approvals and even if we file we may not receive necessary approvals to commercialize our products in any market.

***Healthcare reform measures could hinder or prevent our planned products' commercial success.***

In the U.S., there have been, and we expect there will continue to be, a number of legislative and regulatory changes to the healthcare system in ways that could affect our future revenue and profitability and the future revenue and profitability of our potential customers. Federal and state lawmakers regularly propose and, at times, enact legislation that would result in significant changes to the healthcare system, some of which are intended to contain or reduce the costs of medical products and services. For example, one of the most significant healthcare reform measures in decades, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or PPACA, was enacted in 2010. The PPACA contains a number of provisions, including those governing enrollment in federal healthcare programs, reimbursement changes and fraud and abuse measures, all of which will impact existing government healthcare programs and will result in the development of new programs. The PPACA, among other things:

- imposes a tax of 2.3% on the retail sales price of medical devices sold after December 31, 2012.
- could result in the imposition of injunctions;
- requires collection of rebates for drugs paid by Medicaid managed care organizations; and
- requires manufacturers to participate in a coverage gap discount program, under which they must agree to offer 50% point-of-sale discounts off negotiated prices of applicable branded drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D.

While the U.S. Supreme Court upheld the constitutionality of most elements of the PPACA in June 2012, other legal challenges are still pending final adjudication in several jurisdictions. In addition, Congress has also proposed a number of legislative initiatives, including possible repeal of the PPACA. At this time, it remains unclear whether there will be any changes made to the PPACA, whether to certain provisions or its entirety. At this time, we believe the 2.3% tax on sales of medical devices will be applicable to sales of CoSense devices, and may be applicable to CoSense consumables and Serenz devices. We cannot assure you that the PPACA, as currently enacted or as amended in the future, will not adversely affect our business and financial results and we cannot predict how future federal or state legislative or administrative changes relating to healthcare reform will affect our business.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. For example, the Budget Control Act of 2011, among other things, created the Joint Select Committee on Deficit Reduction to recommend proposals for spending reductions to Congress. The Joint Select Committee did not achieve a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, which triggered the legislation's automatic reduction to several government programs, including aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, starting in 2013. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, or the ATRA, which delayed for another two months the budget cuts mandated by the sequestration provisions of the Budget Control Act of 2011. The ATRA, among other things, also reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. In March 2013, the President signed an executive order implementing sequestration, and in April 2013, the 2% Medicare reductions went into effect. We cannot predict whether any additional legislative changes will affect our business.

There likely will continue to be legislative and regulatory proposals at the federal and state levels directed at containing or lowering the cost of health care. We cannot predict the initiatives that may be adopted in

the future or their full impact. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of health care may adversely affect:

- our ability to set a price that we believe is fair for our products;
- our ability to generate revenue and achieve or maintain profitability; and
- the availability of capital.

Further, changes in regulatory requirements and guidance may occur and we may need to amend clinical study protocols to reflect these changes. Amendments may require us to resubmit our clinical study protocols IRBs for reexamination, which may impact the costs, timing or successful completion of a clinical study. In light of widely publicized events concerning the safety risk of certain drug products, regulatory authorities, members of Congress, the Governmental Accounting Office, medical professionals and the general public have raised concerns about potential drug safety issues. These events have resulted in the recall and withdrawal of drug products, revisions to drug labeling that further limit use of the drug products and establishment of risk management programs that may, for instance, restrict distribution of drug products or require safety surveillance or patient education. The increased attention to drug safety issues may result in a more cautious approach by the FDA to clinical studies and the drug approval process. Data from clinical studies may receive greater scrutiny with respect to safety, which may make the FDA or other regulatory authorities more likely to terminate or suspend clinical studies before completion, or require longer or additional clinical studies that may result in substantial additional expense and a delay or failure in obtaining approval or approval for a more limited indication than originally sought.

Given the serious public health risks of high profile adverse safety events with certain drug products, the FDA may require, as a condition of approval, costly risk evaluation and mitigation strategies, which may include safety surveillance, restricted distribution and use, patient education, enhanced labeling, special packaging or labeling, expedited reporting of certain adverse events, preapproval of promotional materials and restrictions on direct-to-consumer advertising.

***If we fail to comply with healthcare regulations, we could face substantial penalties and our business, operations and financial condition could be adversely affected.***

Even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, certain federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will be applicable to our business. We could be subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states in which we conduct our business. The regulations that may affect our ability to operate include, without limitation:

- the federal healthcare program Anti-Kickback Statute, which prohibits, among other things, any person from knowingly and willfully offering, soliciting, receiving or providing remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs, such as the Medicare and Medicaid programs;
- indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs, such as the Medicare and Medicaid programs;
- the federal False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, false claims, or knowingly using false statements, to obtain payment from the federal government, and which may apply to entities like us which provide coding and billing advice to customers;

- federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

- the federal transparency requirements under the Health Care Reform Law requires manufacturers of drugs, devices, biologics and medical supplies to report to the Department of Health and Human Services information related to physician payments and other transfers of value and physician ownership and investment interests;

- the federal Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, which governs the conduct of certain electronic healthcare transactions and protects the security and privacy of protected health information; and

- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers.

The PPACA, among other things, amends the intent requirement of the Federal Anti-Kickback Statute and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. In addition, the PPACA provides that the government may assert that a claim including items or services resulting from a violation of the Federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could adversely affect our ability to operate our business and our financial results. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

**Risks related to this offering and ownership of our securities**

***Our stock price may be volatile, and purchasers of our securities could incur substantial losses.***

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

- our ability to successfully commercialize, and realize revenues from sales of, CoSense;

- the success of competitive products or technologies;

- results of clinical studies of Serenz or planned products or those of our competitors;

- regulatory or legal developments in the U.S. and other countries, especially changes in laws or regulations applicable to our products;

- introductions and announcements of new products by us, our commercialization partners, or our competitors, and the timing of these introductions or announcements;

- actions taken by regulatory agencies with respect to our products, clinical studies, manufacturing process or sales and marketing terms;
- variations in our financial results or those of companies that are perceived to be similar to us;
- the success of our efforts to acquire or in-license additional products or planned products;
- developments concerning our collaborations, including but not limited to those with our sources of manufacturing supply and our commercialization partners;
- developments concerning our ability to bring our manufacturing processes to scale in a cost-effective manner;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- developments or disputes concerning patents or other proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our products;
- our ability or inability to raise additional capital and the terms on which we raise it;
- the recruitment or departure of key personnel;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- actual or anticipated changes in earnings estimates or changes in stock market analyst recommendations regarding our common stock, other comparable companies or our industry generally;
- trading volume of our common stock;
- sales of our common stock by us or our stockholders;
- general economic, industry and market conditions; and
- the other risks described in this “Risk factors” section.

These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance. In the past, following periods of volatility in the market, securities class-action litigation has often been instituted against companies. Such litigation, if instituted against us, could result in substantial costs and diversion of management’s attention and resources, which could materially and adversely affect our business, financial condition, results of operations and growth prospects.

***Future sales of our common stock, or the perception that future sales may occur, may cause the market price of our common stock to decline, even if our business is doing well.***

Sales of substantial amounts of our common stock in the public market after this offering, or the perception that these sales may occur, could materially and adversely affect the price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. The shares of common stock sold in this offering will be freely tradable, without restriction, in the public market, except for any shares sold to our affiliates.

In connection with this offering, we, our officers and directors and holders of 1% or more of our currently outstanding shares of common stock have agreed prior to the commencement of this offering, subject to limited exceptions, not to sell or transfer any shares of common stock for 180 days after the date of this prospectus without the consent of Maxim Group LLC, or Maxim. However, Maxim may release these shares from any restrictions at any time. We cannot predict what effect, if any, market sales of shares held by any stockholder or the availability of shares for future sale will have on the market price of our common stock.

Approximately shares of common stock may be sold in the public market by existing stockholders after the date of this prospectus and an additional shares of common stock may be sold in the public market by existing stockholders on or about 181 days after the date of this prospectus, subject to volume and other limitations imposed under the federal securities laws. Sales of substantial amounts of our common stock in the public market after the completion of this offering, or the perception that such sales could occur, could adversely affect the market price of our common stock and could materially impair our ability to raise capital through offerings of our common stock. See the section entitled "Shares Eligible for Future Sale" for a more detailed description of the restrictions on selling shares of our common stock after this offering.

We are issuing warrants to purchase shares of common stock in this offering. We will also issue a warrant to the underwriter in this offering to purchase an additional units, including units pursuant to the exercise of the overallotment option. In addition, as of June 30, 2014, we had outstanding options to purchase 2,891,125 shares of our common stock and outstanding warrants to purchase an aggregate of 111,111 shares of our common stock. We plan to register for offer and sale the shares of common stock that are reserved for issuance pursuant to outstanding options. Shares covered by such registration statements upon the exercise of stock options generally will be eligible for sale in the public market, except that affiliates will continue to be subject to volume limitations and other requirements of Rule 144 under the Securities Act of 1933, as amended. The issuance or sale of such shares could depress the market price of our common stock.

***We are an "emerging growth company," and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.***

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act, or the JOBS Act, which was enacted in April 2012. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could be an emerging growth company for up to five years, although circumstances could cause us to lose that status earlier. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year following the fifth anniversary of the completion of this offering, (2) the last day of the fiscal year in which we have total annual gross revenue of at least $1.0 billion, (3) the date on which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700.0 million as of the prior June 30th, and (4) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may suffer or be more volatile.

Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have elected to use the extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period under the JOBS Act.

***After this offering, our executive officers, directors and principal stockholders will continue to maintain the ability to control or significantly influence all matters submitted to stockholders for approval.***

Upon the closing of this offering, our executive officers, directors and stockholders who owned more than 5% of our outstanding common stock before this offering will, in the aggregate, beneficially own shares representing approximately % of our common stock, based on shares of common stock outstanding as of the date of this offering, including the shares of common stock issuable upon conversion of our convertible promissory notes upon the closing of this offering and after giving effect to and the sale of units in this offering. As a result, if these stockholders were to choose to act together, they would be able to control or significantly influence all matters submitted to our stockholders for approval, as well as our management and affairs. For example, these stockholders, if they choose to act together, will control or significantly influence the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. This concentration of voting power could delay or prevent an acquisition of our company on terms that other stockholders may desire.

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

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. We will be subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, the other rules and regulations of the Securities and Exchange Commission, or SEC, and the rules and regulations of The NASDAQ Capital Market, or NASDAQ. The expenses that will be required in order to adequately prepare for being a public company will be material, and compliance with the various reporting and other requirements applicable to public companies will require considerable time and attention of management. For example, the Sarbanes-Oxley Act and the rules of the SEC and national securities exchanges have imposed various requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. These rules and regulations will continue to increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits on coverage or incur substantial costs to maintain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified personnel to serve on our board of directors, our board committees, or as executive officers.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act, beginning as early as our annual report on Form 10-K for the fiscal year ended December 31, 2014. In addition, we will be required to have our independent registered public accounting firm attest to the effectiveness of our internal control over financial reporting beginning with our annual report on Form 10-K following the date on which we are no longer an emerging growth company. Our compliance with Section 404 of the Sarbanes-Oxley Act will require that we incur substantial accounting expense and expend significant management efforts. We currently do not have an internal audit group, and we will need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. If we are not able to comply with the requirements of Section 404 in a timely manner, or if we or our independent registered public accounting firm identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline and we could be subject to sanctions or investigations by NASDAQ, the SEC or other regulatory authorities, which would require additional financial and management resources.

Our ability to successfully implement our business plan and comply with Section 404 requires us to be able to prepare timely and accurate financial statements. We expect that we will need to continue to improve existing, and implement new operational and financial systems, procedures and controls to manage our business effectively. Any delay in the implementation of, or disruption in the transition to, new or enhanced systems, procedures or controls, may cause our operations to suffer and we may be unable to conclude that our internal control over financial reporting is effective and to obtain an unqualified report on internal controls from our auditors as required under Section 404 of the Sarbanes-Oxley Act. This, in turn, could have an adverse impact on trading prices for our common stock, and could adversely affect our ability to access the capital markets.

***We have identified a material weakness in our internal control over financial reporting as of December 31, 2013, and may identify additional material weaknesses in the future that may cause us to fail to meet our reporting obligations or result in material misstatements of our financial statements. If we fail to remedy our material weaknesses, or if we fail to establish and maintain effective control over financial reporting, our ability to accurately and timely report our financial results could be adversely affected.***

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with U.S. generally accepted accounting principles. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of annual or interim financial statements will not be prevented or detected on a timely basis. Prior to the completion of this offering, we have been a private company with limited accounting personnel and other resources to address our internal control over financial reporting. During the course of preparing for this offering, we determined that material adjustments to various accounts were necessary, which required us to restate the financial statements for the year ended December 31, 2012, which had been previously audited by another independent audit firm. These adjustments leading to a restatement of those financial statements led us to conclude that we had a material weakness in internal control over financial reporting as of December 31, 2012. The material weakness that we identified was that we did not maintain a sufficient complement of resources with an appropriate level of accounting knowledge, experience and training commensurate with our structure and financial reporting requirements. We also found that the weakness persisted through the year ending December 31, 2013. As of that time, our financial operations staff consisted of one part-time consultant.

This material weakness contributed to adjustments to previously issued financial statements principally, but not limited to, the following areas: equity accounting in connection with our issuance of Series A, B, and C convertible preferred stock and related warrants, and period-end cutoff for development-related expenses.

For a discussion of our remediation plan and the actions that we have executed during 2014, see “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Controls and procedures.” The actions we have taken are subject to continued review, supported by confirmation and testing by management as well as audit committee oversight. While we have implemented a plan to remediate this weakness we cannot assure you that we will be able to remediate this weakness, which could impair our ability to accurately and timely report our financial position, results of operations or cash flows. If we are unable to successfully remediate this material weakness, and if we are unable to produce accurate and timely financial statements, our stock price may be adversely affected and we may be unable to maintain compliance with applicable NASDAQ listing requirements.

Our failure to remediate the material weakness identified above or the identification of additional material weaknesses in the future, could adversely affect our ability to report financial information, including our filing of quarterly or annual reports with the SEC on a timely and accurate basis. Moreover, our failure to remediate the material weakness identified above or the identification of additional material weaknesses, could prohibit us from producing timely and accurate consolidated financial statements, which may adversely affect our stock price and we may be unable to maintain compliance with NASDAQ listing requirements.

***Our ability to use our net operating loss carry forwards and certain other tax attributes may be limited.***

Our ability to utilize our federal net operating loss, carryforwards and federal tax credit may be limited under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code. The limitations apply if an "ownership change," as defined by Section 382, occurs. Generally, an ownership change occurs if the percentage of the value of the stock that is owned by one or more direct or indirect "five percent shareholders" increases by more than 50% over their lowest ownership percentage at any time during the applicable testing period (typically three years). If we have experienced an "ownership change" at any time since our formation, we may already be subject to limitations on our ability to utilize our existing net operating losses and other tax attributes to offset taxable income. In addition, future changes in our stock ownership, which may be outside of our control, may trigger an "ownership change" and, consequently, Section 382 and 383 limitations. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards and other tax attributes to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us.

***If you purchase our securities in this offering, you will incur immediate and substantial dilution in the book value of your investment.***

The initial public offering price is substantially higher than the net tangible book value per share of our securities. Investors purchasing units in this offering will pay a price per unit that substantially exceeds the book value of our tangible assets after subtracting our liabilities. As a result, investors purchasing units in this offering will incur immediate dilution of $ per unit, based on an assumed initial public offering price of $ per unit, which is the midpoint of the price range set forth on the cover of this prospectus. Further, investors purchasing units in this offering will contribute approximately % of the total amount invested by stockholders since our inception, but will own, as a result of such investment, only approximately % of the shares of common stock outstanding immediately following this offering.

The exercise of any of our outstanding options would result in additional dilution. As a result of the dilution to investors purchasing units in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation. Further, because we may need to raise additional capital to fund our clinical development programs, we may in the future sell substantial amounts of common stock or securities convertible into or exchangeable for common stock. These future issuances of equity or equity-linked securities, together with the exercise of outstanding options and any additional shares issued in connection with acquisitions, if any, may result in further dilution to investors.

***A significant number of our shares of our common stock will become eligible for sale upon the completion of this offering, and a significant number of additional shares of our common stock may become eligible for sale at a later date, and their sale could depress the market price of our common stock.***

Each unit issued in this offering will consist of one share of common stock and a warrant to purchase one share of common stock. We will also issue a warrant to purchase units to the underwriters that, if executed, would result in the issuance of an additional shares of common stock and warrants to purchase an additional shares of common stock. We will also have outstanding other warrants that, if executed, would result in the issuance of an additional shares of common stock at a weighted average exercise price of $ per share.

As of March 31, 2014, we had outstanding $14,379,407 aggregate principal amount and accrued interest under the 2010/2012 convertible promissory notes and no accrued principal or interest outstanding under the 2014 convertible promissory notes. The 2010/2012 convertible promissory notes will automatically convert into shares of our common stock upon the completion of this offering. The 2014 convertible promissory notes will automatically convert into units of common stock and warrants issued in this offering. Assuming an offering price of $ per unit, the 2010/2012 convertible promissory notes and the 2014 convertible promissory notes will automatically convert into shares of common stock and units, respectively.

As of June 30, 2014, options to purchase 2,891,125 shares of our common stock were issued and outstanding with a weighted average exercise price of $0.2736 per share. Options to purchase 2,769,996 of such shares are currently exercisable or will be exercisable within 60 days of the date of this prospectus.

The sale or even the possibility of sale of the shares of common stock described above could substantially reduce the market price for our common stock or our ability to obtain future financing.

***An active trading market may not develop for our securities, and you may not be able to sell your units, common stock or warrants at or above the initial public offering price or warrant exercise price per share.***

There is no established trading market for our securities, and the market for our securities may be highly volatile or may decline regardless of our operating performance. Prior to this offering, you could not buy or sell our securities publicly. An active public market for our securities may not develop or be sustained after this offering. We cannot predict the extent to which investor interest in our company will lead to the development of an active trading market in our units, common stock or warrants or how liquid that market might become. If a market does not develop or is not sustained, it may be difficult for you to sell your securities at the time you wish to sell them, at a price that is attractive to you, or at all.

The initial public offering price per unit has been determined through negotiation between us and representatives of the underwriter, and may not be indicative of the market prices that prevail after this offering. You may not be able to sell your common stock or warrants at or above the initial public offering price or warrant exercise price per share.

***Due to the speculative nature of warrants, there is no guarantee that it will ever be profitable for holders of the warrants to exercise the warrants.***

The warrants being offered as part of the units do not confer any rights of common stock ownership on their holders, such as voting rights or the right to receive dividends, but rather merely represent the right to acquire shares of common stock at a fixed price for a limited period of time. Specifically, following issuance of the warrants, warrant-holders may exercise their right to acquire the common stock and pay an exercise price of $ per share (which is equal to 110% of the public offering price of the common stock underlying the units), prior to the expiration of the five-year term on , 2019, after which date any unexercised warrants will expire and have no further value. Moreover, following this offering, the market value of the warrants is uncertain and there can be no assurance that the market value of the warrants will equal or exceed their public offering price. There can be no assurance that the market price of the common stock will ever equal or exceed the exercise price of the warrants, and, consequently, whether it will ever be profitable for holders of the warrants to exercise the warrants.

***Holders may be unable to exercise the warrants if we do not maintain a current prospectus and comply with applicable securities laws.***

No warrants will be exercisable unless at the time of exercise a prospectus relating to the common stock issuable upon exercise of the warrants is current and the common stock has been registered or qualified or is deemed to be exempt under the securities laws of the state of residence of the holder of the warrants. Under the terms of the warrant agreement, we have agreed to meet these conditions and use our best efforts to maintain a current prospectus relating to the common stock issuable upon exercise of the warrants until the expiration of the warrants. However, we cannot assure you that we will be able to do so, and if we do not maintain a current prospectus related to the common stock issuable upon exercise of the warrants, holders will be unable to exercise their warrants and we will not be required to settle any such warrant exercise. If the prospectus relating to the common stock issuable upon the exercise of the warrants is not current or if the common stock is not qualified or exempt from qualification in the jurisdictions in which the holders of the warrants reside, we will not be required

to net cash settle or cash settle the warrant exercise, the warrants may have no value, the market for the warrants may be limited and the warrants may expire worthless.

***If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research, about our business, our stock price and trading volume could decline.***

The trading market for our common stock will depend, in part, on the research and reports that securities or industry analysts publish about us or our business. Securities and industry analysts do not currently, and may never, publish research on our company. If no securities or industry analysts commence coverage of our company, the trading price for our common stock would likely be negatively impacted. In the event securities or industry analysts initiate coverage, if one or more of the analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. In addition, if our operating results fail to meet the forecast of analysts, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our stock price and trading volume to decline.

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

Although we currently intend to use the net proceeds from this offering in the manner described in the section entitled "Use of Proceeds," our management will have broad discretion in the application of the balance of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common stock to decline and delay the commercialization of CoSense or other planned products. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

***Provisions in our corporate charter documents and under Delaware law could make an acquisition of us more difficult and may prevent attempts by our stockholders to replace or remove our current management.***

Provisions in our corporate charter and our bylaws that will become effective upon the closing of this offering may discourage, delay or prevent a merger, acquisition or other change in control of us that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Because our board of directors is responsible for appointing the members of our management team, these provisions could in turn affect any attempt by our stockholders to replace current members of our management team. Among others, these provisions include the following:

- our board of directors will be divided into three classes with staggered three-year terms which may delay or prevent a change of our management or a change in control;
- our board of directors will have the right to elect directors to fill a vacancy created by the expansion of our board of directors or the resignation, death or removal of a director, which will prevent stockholders from being able to fill vacancies on our board of directors;
- our stockholders will not be able to act by written consent or call special stockholders' meetings; as a result, a holder, or holders, controlling a majority of our capital stock would not be able to take certain actions other than at annual stockholders' meetings or special stockholders' meetings called by our board of directors, the chairman of our board, the chief executive officer or the president;

- our certificate of incorporation will prohibit cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;

- future amendments of our certificate of incorporation and bylaws will require the approval of 66 2/3% of our outstanding voting securities;

- our stockholders will be required to provide advance notice and additional disclosures in order to nominate individuals for election to our board of directors or to propose matters that can be acted upon at a stockholders' meeting, which may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of our company; and

- our board of directors will be able to issue, without stockholder approval, shares of undesignated preferred stock, which makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to acquire us.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

***Our employment agreements with our executive officers may require us to pay severance benefits to any of those persons who are terminated in connection with a change in control of us, which could harm our financial condition or results.***

Certain of our executive officers are parties to employment agreements that contain change in control and severance provisions providing for aggregate cash payments of up to approximately $0.6 million for severance and other benefits and acceleration of vesting of stock options with a value of approximately $ million (as of March 31, 2014, based on an assumed initial public offering price of $ per unit, which is the midpoint of the price range set forth on the cover page of this prospectus) in the event of a termination of employment in connection with a change in control of us. The accelerated vesting of options could result in dilution to our existing stockholders and harm the market price of our common stock. The payment of these severance benefits could harm our financial condition and results. In addition, these potential severance payments may discourage or prevent third parties from seeking a business combination with us.

***Because we do not anticipate paying any cash dividends on our common stock in the foreseeable future, capital appreciation, if any, will be our stockholders' sole source of gain.***

We have never declared or paid cash dividends on our common stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. In addition, the terms of existing or any future debt agreements may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be our stockholders' sole source of gain for the foreseeable future.

## CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS

This prospectus, including the sections titled "Prospectus Summary," "Risk Factors," "Use of Proceeds," "Management's Discussion and Analysis of Financial Condition and Results of Operations," "Market, Industry and other Data," "Business" and "Shares Eligible for Future Sale," contains forward-looking statements. In some cases you can identify these statements by forward-looking words, such as "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "potential," "seek," "expect," "goal," or the negative or plural of these words or similar expressions. These forward-looking statements include, but are not limited to, statements concerning the following:

- our expected uses of the net proceeds to us from this offering;
- our ability to commercialize CoSense on the timetable that we project;
- the timing and the success of U.S. approval of Serenz pursuant to our clinical and regulatory efforts;
- whether the results of the trials will be sufficient to support domestic or global regulatory approvals for Serenz;
- our ability to maintain regulatory approval of CoSense or to obtain and maintain regulatory approval of our planned products;
- our expectation that our existing capital resources and the net proceeds from this offering will be sufficient to enable us to successfully commercialize CoSense;
- the benefits of the use of CoSense or Serenz;
- the projected dollar amounts of future sales of established and novel diagnostics for neonatal hemolysis;
- our ability to successfully commercialize CoSense or any planned products;
- the rate and degree of market acceptance of CoSense, Serenz, or any planned products;
- our expectations regarding government and third-party payor coverage and reimbursement;
- our ability to manufacture CoSense instruments and consumables in conformity with the FDA's requirements and to scale up manufacturing of CoSense instruments and consumables to commercial scale;
- our ability to successfully build a sales force and commercial infrastructure;
- our ability to compete with companies that may enter the market with products that compete with CoSense;
- our reliance on third parties to conduct clinical studies;
- our reliance on third-party contract manufacturers to manufacture and supply our planned products for us;
- our reliance on our collaboration partners' performance over which we do not have control;
- our ability to retain and recruit key personnel, including development of a sales and marketing function;

- our ability to obtain and maintain intellectual property protection for CoSense, Serenz or any planned products;
- our estimates of our expenses, ongoing losses, future revenue, capital requirements and our needs for or ability to obtain additional financing;
- our expectations regarding the time during which we will be an emerging growth company under the Jumpstart Our Business Startups Act;
- our ability to identify, develop, acquire and in-license new products and planned products;
- our ability to successfully establish and successfully maintain appropriate collaborations and derive significant revenue from those collaborations;
- our financial performance; and
- developments and projections relating to our competitors or our industry.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in "Risk factors." Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to actual results or to changes in our expectations.

You should read this prospectus and the documents that we reference in this prospectus and have filed with the SEC as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

## MARKET, INDUSTRY AND OTHER DATA

We obtained the industry, market and similar data set forth in this prospectus from our own internal estimates and research, and from industry publications and research, surveys and studies conducted by third party consultants, which were commissioned by us. These data involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such information and estimates.

Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances that are assumed in this information. In some cases, we do not expressly refer to the sources from which this data is derived. In that regard, when we refer to one or more sources of this type of data in any paragraph, you should assume that other data of this type appearing in the same paragraph is derived from the same sources, unless otherwise expressly stated or the context otherwise requires.

## USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of our units in this offering will be approximately $17.1 million, or approximately $20.7 million if the underwriters exercise their over-allotment option to purchase additional units in full, assuming an initial public offering price of $ , which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

A $1.00 increase (decrease) in the assumed initial public offering price of $ per unit would increase (decrease) the net proceeds from this offering by approximately $ million, assuming that the number of units we are offering, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of units we are offering. Each increase (decrease) of 1,000,000 units in the number of units we are offering would increase (decrease) the net proceeds to us from this offering by approximately $ million, assuming that the assumed initial public offering price remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

As of March 31, 2014, we had cash and cash equivalents of approximately $0.8 million and we received approximately an additional $1.8 million in gross proceeds from our convertible promissory note financing in April 2014. We estimate that our net proceeds from this offering will be approximately $17.1 million, or approximately $20.7 million if the underwriters exercise their over-allotment option in full. We intend to use the net proceeds from this offering as follows:

- Approximately $10.2 million of the net proceeds from this offering will fund our planned commercial launch of CoSense; and
- Approximately $6.9 million to fund working capital, capital expenditures, research and development of additional future products, and other general corporate purposes, which may include the acquisition or licensing of other products, businesses or technologies, although we have no plans regarding any specific acquisition candidates at this time.

This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development and commercialization efforts and the status of and results from clinical studies, as well as any collaborations that we may enter into with third parties and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Based on our planned use of the net proceeds from this offering described above, and our planned use of our existing cash and cash equivalents, we expect that such funds will be sufficient to enable us to complete our planned development of one or more additional diagnostic products based on our Sensalyze Technology Platform. However, it is possible that we will not achieve the progress that we expect because the actual costs and timing of medical diagnostic development, particularly clinical studies, are difficult to predict, subject to substantial risks and delays and often vary depending on the particular indication and development strategy. We do not expect that the net proceeds from this offering and our existing cash and cash equivalents will be sufficient to enable us to fund Phase 3 clinical trials for Serenz, if necessary for regulatory approval in the U.S.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment grade, interest bearing instruments such as money market funds, certificates of deposit, commercial paper and U.S. government securities.

## DIVIDEND POLICY

We have never declared or paid, and do not anticipate declaring or paying, any cash dividends on any of our capital stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends in the foreseeable future. Future determination as to the declaration and payment of dividends, if any, will be at the discretion of our board of directors and will depend on then existing conditions, including our operating results, financial conditions, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant.

## CAPITALIZATION

The following table sets forth our capitalization as of March 31, 2014:

- on an actual basis;
- on a pro forma basis to reflect: (1) the filing of our amended and restated certificate of incorporation and the automatic conversion of outstanding shares of our convertible preferred stock in connection with this offering as of March 31, 2014 into an aggregate of shares of common stock immediately prior to the closing of this offering; (2) the automatic conversion of the 2010/2012 convertible promissory notes in connection with this offering into shares of common stock as if they had occurred as of March 31, 2014; and (3) the issuance of convertible promissory notes in 2014 and automatic conversion of those notes in connection with this offering into units as if they had occurred as of March 31, 2014 and the receipt of approximately $1.8 million of gross proceeds from such sale; and
- on a pro forma as adjusted basis to further reflect the sale by us of units in this offering at an assumed initial public offering price of $ per unit, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

You should read this table together with the sections in this prospectus entitled "Selected Financial Data," and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus.

| | As of March 31, 2014 | | |
|---|---|---|---|
| | Actual | Pro Forma | Pro Forma As Adjusted(1) |
| | (in thousands, except share data) (unaudited) | | |
| Convertible promissory notes issued in 2010 and 2012, and accrued interest | $ 14,379 | | |
| Convertible promissory notes issued in 2014, and accrued interest | | | |
| Convertible preferred stock, par value $0.001 per share: | | | |
| 21,702,428 shares authorized, 10,385,395 shares issued and outstanding, actual; no shares authorized, issued and outstanding pro forma and pro forma as adjusted | 23,808 | | |
| Stockholders' equity (deficit): | | | |
| Common stock, par value $0.001 per share: 29,500,000 shares authorized, 6,428,716 shares issued and outstanding, actual; shares authorized, shares issued and outstanding pro forma; shares authorized, shares issued and outstanding, pro forma as adjusted | 6 | | |
| Additional paid-in capital | 19,241 | | |
| Accumulated deficit | (57,934) | | |
| Total stockholders' deficit | (38,687) | | |
| Total liabilities and stockholders' equity (deficit) | $ 500 | $ | $ |

(1) A $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) each of cash and cash equivalents, working capital and total assets by $ and decrease (increase) total stockholders' deficit by $ , assuming the number of shares we are offering, as set forth on the cover page of this prospectus, remains the same, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. An increase (decrease) of 1,000,000 shares in the number of shares we are offering would increase (decrease) each of pro forma as adjusted cash and cash equivalents, working capital and total assets by approximately $ and decrease (increase) total stockholders' deficit by approximately $ , assuming the assumed initial public offering price per share, as set forth

on the cover page of this prospectus, remains the same. The pro forma as adjusted information is illustrative only, and we will adjust this information based on the actual initial public offering price, number of shares offered and other terms of this offering determined at pricing.

The number of shares of our common stock issued and outstanding on an actual, pro forma and pro forma as adjusted basis in the table above excludes the following:

- shares of our common stock issuable upon the exercise of stock options outstanding as of , 2014 at a weighted-average exercise price of $ per share;
- shares of common stock, subject to increase on an annual basis, reserved for future issuance under our 2014 Equity Incentive Plan, which will become effective in connection with the completion of this offering;
- shares of our common stock, subject to increase on an annual basis, reserved for future issuance under our 2014 Employee Stock Purchase Plan;
- 111,111 shares of our common stock issuable upon the exercise of warrants to purchase convertible preferred stock outstanding as of , 2014, which warrants will automatically convert into warrants to purchase common stock immediately prior to the completion of this offering, with an exercise price of per share;
- shares of our common stock issuable upon the exercise of warrants issued in connection with our 2010/2012 convertible promissory notes outstanding as of , 2014, which warrants will automatically convert into warrants to purchase common stock immediately prior to the completion of this offering, with an exercise price of per share, which is 75% of the price of the common stock underlying the units sold in this offering;
- shares of our common stock issuable upon the exercise of warrants that are part of the units sold in this offering; and
- shares of our common stock issuable upon exercise of stock options to be granted to certain of our directors and officers upon the completion of this offering.

## DILUTION

Dilution is the amount by which the offering price paid by the purchasers of the units sold in the offering exceeds the pro forma as adjusted net tangible book value per share of our common stock after this offering. Such calculation does not reflect any dilution associated with the sale and exercise of the warrants issued as part of the units. The historical net tangible book value of our common stock as of March 31, 2014 was $ million, or $ per share. The pro forma net tangible book value of our common stock as of March 31, 2014 was $ million, or $ per share. Pro forma net tangible book value per share represents our total tangible assets less our total liabilities, divided by the number of outstanding shares of our common stock, after giving effect to the pro forma adjustments referenced under "Capitalization."

After giving effect to (i) the pro forma adjustments referenced under "Capitalization", (ii) an increase in total assets to reflect our receipt of the net proceeds from this offering (assuming the public offering price will be $ per unit, the midpoint of the range set forth on the cover page of the prospectus after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us) and (iii) the addition of the number of shares offered by this prospectus to the number of shares outstanding, our pro forma as adjusted net tangible book value as of March 31, 2014 would have been approximately $ million, or $ per share. This represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to our existing stockholders and an immediate dilution of $ per share to investors purchasing units in this offering.

The following table illustrates this dilution on a per share basis to new investors, assuming $ of value is attributed to the warrants issued as a part of the units:

| | | |
|---|---|---|
| Assumed initial public offering price per share | | $ |
| Historical net tangible book value per share as of March 31, 2014 | $ | |
| Pro forma net tangible book value per share as of March 31, 2014 | $ | |
| Increase in pro forma net tangible book value per share attributable to new investors | | |
| Pro forma as adjusted net tangible book value per share after this offering | | |
| Dilution per share to investors participating in this offering | | $ |

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per unit would increase (decrease) the pro forma net tangible book value, as adjusted to give effect to this offering, by $ per share and the dilution to new investors by $ per share, assuming the number of units offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters exercise their option to purchase additional units in this offering in full, which includes shares of common stock issued as part of the units, the pro forma net tangible book value, as adjusted to give effect to this offering, would be $ per unit and the dilution to new investors would be $ per unit.

We may also increase or decrease the number of units we are offering. An increase (decrease) of 1,000,000 units in the number of units we are offering would increase (decrease) our pro forma as adjusted net tangible book value by approximately $ million, or $ per unit, and decrease (increase) the pro forma dilution per unit to investors in this offering by $ per unit, assuming that the assumed initial public offering price remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. The pro forma information discussed above is illustrative only and will change based on the actual initial public offering price, number of units and other terms of this offering determined at pricing.

The table below summarizes as of March 31, 2014, on a pro forma as adjusted basis described above, the number of shares of our common stock, the total consideration, and the average price per share (i) paid to us by our existing stockholders and (ii) to be paid by new investors purchasing our common stock in this offering at an assumed initial public offering price of $ per units, which is the midpoint of the price range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

| | Shares Purchased | | Total Consideration | | Average Price Per Share |
|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | |
| Existing stockholders before this offering | | % | $ | % | $ |
| New investors | | | | | |
| Total | | 100.0% | $ | 100.0% | $ |

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) total consideration paid by new investors by $ million and increase (decrease) the percent of total consideration paid by new investors by %, assuming the number of units we are offering, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of units we are offering.

If the underwriters exercise their option to purchase additional units in this offering in full, the percentage of shares of our common stock held by existing stockholders will be reduced to % of the total number of shares of our common stock outstanding after this offering, and the number of shares held by new investors will increase to shares, or % of the total number of shares of our common stock outstanding after this offering.

The number of shares of our common stock to be outstanding after this offering is based on shares of our common stock outstanding as of , 2014, and excludes the following:

- shares of our common stock issuable upon the exercise of stock options outstanding as of , 2014 at a weighted-average exercise price of $ per share;
- shares of common stock, subject to increase on an annual basis, reserved for future issuance under our 2014 Equity Incentive Plan, which will become effective in connection with the completion of this offering;
- shares of our common stock, subject to increase on an annual basis, reserved for future issuance under our 2014 Employee Stock Purchase Plan;
- 111,111 shares of our common stock issuable upon the exercise of warrants to purchase convertible preferred stock outstanding as of , 2014, which warrants will automatically convert into warrants to purchase common stock immediately prior to the completion of this offering, with an exercise price of per share;
- shares of our common stock issuable upon the exercise of warrants issued in connection with our 2010/2012 convertible promissory notes outstanding as of , 2014, which warrants will automatically convert into warrants to purchase common stock immediately prior to the completion of this offering, with an exercise price of per share, which is 75% of the price of the common stock underlying the units sold in this offering;
- shares of our common stock issuable upon the exercise of warrants that are part of the units sold in this offering; and

- shares of our common stock issuable upon exercise of stock options to be granted to certain of our directors and officers upon the completion of this offering.

To the extent that any outstanding options or warrants, including the warrants issued as part of the units sold in this offering, are exercised, new options are issued under our stock-based compensation plans or we issue additional shares of common stock in the future, there will be further dilution to investors participating in this offering. If all of these options and warrants were exercised, then our existing stockholders, including the holders of these options and warrants, would own % and our new investors would own % of the total number of shares of our common stock outstanding upon the closing of this offering. In such event, the total consideration paid by our existing stockholders, including the holders of these options and warrants, would be approximately $ million, or %, the total consideration paid by our new investors would be $ million, or %, the average price per share paid by our existing stockholders would be $ , and the average price per share paid by our new investors would be $ .

## SELECTED FINANCIAL DATA

You should read the following selected financial data together with the section of this prospectus entitled "Management's Discussion and Analysis of Financial condition and Results of Operations" and our financial statements and the related notes included in this prospectus. The statement of operations data for the years ended December 31, 2012 and 2013 and the period from inception to December 31, 2013 and the balance sheet data as of December 31, 2012 and 2013, respectively, are derived from our audited financial statements included elsewhere in this prospectus. The statements of operations data for the three months ended March 31, 2013 and 2014 and for the periods from August 25, 1999 (inception) to March 31, 2014, and the balance sheet data as of March 31, 2014, are derived from our unaudited financial statement included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results to be expected in the future.

| Statement of Operations Data: | Year Ended December 31, | | Three Months Ended March 31, | | Period from August 25, 1999 (Inception) through December 31, 2013 | Period from August 25, 1999 (Inception) through March 31, 2014 |
|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2013 | 2014 | | |
| | (in thousands, except share and per share data) | | (unaudited) | | | (unaudited) |
| Revenue | $ — | $ 3,000 | $ 3,000 | $ — | $ 3,000 | $ 3,000 |
| Expenses | | | | | | |
| Research and development | 2,470 | 2,380 | 703 | 372 | 36,652 | 37,024 |
| General and administrative | 1,127 | 1,467 | 416 | 312 | 15,960 | 16,272 |
| Total expenses | 3,597 | 3,847 | 1,119 | 684 | 52,612 | 53,296 |
| Operating income (loss) | (3,597) | (847) | 1,881 | (684) | (49,612) | (50,296) |
| Therapeutic discovery grant proceeds | — | — | — | — | 733 | 733 |
| Interest and other income (expense) | | | | | | |
| Interest income | 3 | 2 | — | — | 814 | 815 |
| Interest expense | (2,866) | (2,860) | (944) | (388) | (9,721) | (10,108) |
| Other income (expense), net | (22) | (2) | 77 | 238 | 685 | 923 |
| Net income (loss) and comprehensive income (loss) | $ (6,482) | $ (3,707) | $ 1,014 | $ (834) | $ (57,101) | $ (57,935) |
| Weighted average common shares outstanding(1) | | | | | | |
| Basic | 6,244,230 | 6,428,278 | 6,426,939 | 6,428,716 | | |
| Diluted | 6,244,230 | 6,428,278 | 27,067,245 | 6,428,716 | | |
| Net income (loss) per share(1) | | | | | | |
| Basic | $ (1.04) | $ (0.58) | $ 0.16 | $ (0.13) | | |
| Diluted | $ (1.04) | $ (0.58) | $ 0.05 | $ (0.13) | | |

(1) See Note 13 to our financial statements included elsewhere in this prospectus for an explanation of the method used to calculate the historical and pro forma net income (loss) per share, basic and diluted, and the number of shares used in the computation of the per share amounts.

| Balance Sheet Data | December 31 | | March 31 |
|---|---|---|---|
| | 2012 | 2013 | 2014 |
| | | | (unaudited) |
| Cash and cash equivalents | $ 2,155 | $ 1,269 | $ 764 |
| Working capital (deficit) | (9,155) | (12,655) | (13,704) |
| Total assets | 2,514 | 1,587 | 1,031 |
| Convertible promissory notes | 11,132 | 13,992 | 14,379 |
| Total stockholders' deficit | (34,196) | (37,864) | (38,687) |

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

*You should read the following discussion and analysis of our financial condition and results of operations together with the portion of this prospectus entitled "Selected Financial Data" and our financial statements and related notes included elsewhere in this prospectus. This discussion and other parts of this prospectus contain forward-looking statements that involve risk and uncertainties, such as statements of our plans, objectives, expectations, intentions, and beliefs. Our actual results may differ materially from those discussed in these forward-looking statements as a result of various factors, including those set forth under "Risk Factors" and in other parts of this prospectus. The share numbers in the following discussion reflect a reverse stock split that we effected immediately before the date of this offering.*

### Overview

We were incorporated in the State of Delaware on August 25, 1999. Our principal executive offices are located at 3 Twin Dolphin Drive, Suite 160, Redwood City, California, 94065. We develop diagnostics and therapeutics based on our proprietary technology for precision metering of gas flow. Our first product, CoSense, aids in the diagnosis of hemolysis in neonates, a dangerous condition in which red blood cells degrade rapidly, which can lead to long-term developmental disability. CoSense received initial 510(k) clearance for sale in the U.S. in the fourth quarter of 2012, with a more specific Indication for Use related to hemolysis in the first quarter of 2014 and received CE Mark approval for sale in the E.U. in the third quarter of 2013. We are preparing to commercialize CoSense using our own sales efforts, and intend to direct a significant portion of the use of proceeds of this offering to sales and marketing of CoSense, which is scheduled to begin in the second half of 2014. In addition, we are applying our research and development efforts to additional diagnostic products based on our Sensalyze Technology Platform, a portfolio of proprietary methods and devices which enables CoSense and can be applied to detect a variety of analytes in exhaled breath.

Prior to 2010, our efforts were primarily focused on development of therapeutics rather than diagnostics. We have previously obtained CE Mark approval in the E.U. for Serenz, an as-needed treatment for AR that has shown statistically significant improvements in AR symptoms in randomized, controlled Phase 2 clinical trials completed by us. We outlicensed Serenz to GSK in 2013, realizing revenue in the form of a non-refundable up-front payment of $3 million. In June 2014, the agreement terminated and GSK returned the licensed rights to Serenz back to us. We have no further monetary obligations to GSK related to the terminated agreement. We intend to engage in further research and development of Serenz prior to obtaining a partner for the final development and commercialization of the product.

### Financial overview

#### *Summary*

We have not generated net income from operations, and, at December 31, 2013 and as of March 31, 2014, we had an accumulated deficit of $57.1 million and $57.9 million, respectively, primarily as a result of research and development and general and administrative expenses. While we may in the future generate revenue from a variety of sources, potentially including sales of CoSense and other diagnostic products, license fees, milestone payments, and research and development payments in connection with potential future strategic partnerships, we have, to date, generated revenue only from the 2013 license agreement pertaining to Serenz. The GSK agreement terminated in June 2014, and we may not generate future licensing revenue. We may never be successful in commercializing our CoSense product or in developing additional products. Accordingly, we expect to incur significant losses from operations for the foreseeable future, and there can be no assurance that we will ever generate significant revenue or profits.

***Revenue recognition***

We have thus far earned revenue primarily from a licensing agreement in connection with intellectual property created by us. We apply the provisions of Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 605, Revenue Recognition, to recognize revenue. We begin recognizing revenue when persuasive evidence of an arrangement exists, such as a contract or purchase order, delivery has occurred, no significant obligations with regard to implementation or integration exist, the fee is fixed or determinable, and collectability is reasonably assured.

***Research and development expenses***

Research and development costs are expensed as incurred. Research and development costs consist primarily of salaries and benefits, consultant fees, prototype expenses, certain facility costs and other costs associated with clinical trials, net of reimbursed amounts. Costs to acquire technologies to be used in research and development that have not reached technological feasibility, and have no alternative future use, are expensed to research and development costs when incurred.

***General and administrative expenses***

General and administrative expenses consist principally of personnel-related costs, professional fees for legal, consulting, audit and tax services, insurance, rent, and other general operating expenses not otherwise included in research and development. We anticipate general and administrative expenses will increase in future periods, reflecting an expanding infrastructure, other administrative expenses and increased professional fees associated with being a public reporting company.

***Other income (expense), net***

Other income (expense), net is comprised of changes in the fair value of the convertible preferred stock warrant liabilities.

**Critical accounting policies, significant judgments and use of estimates**

This discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities as of the date of the financial statements, as well as the reported expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

***Research and development expense***

Research and development costs are expensed as incurred. Research and development expense includes payroll and personnel expenses; consulting costs; external contract research and development expenses; and allocated overhead, including rent, equipment depreciation and utilities, and relate to both company-sponsored programs as well as costs incurred pursuant to reimbursement arrangements. Nonrefundable advance payments for goods or services that will be used or rendered for future research and development activities are deferred and capitalized and recognized as an expense as the goods are delivered or the related services are performed.

As part of the process of preparing our financial statements, we are required to estimate our accrued research and development expenses. This process involves reviewing contracts and purchase orders, reviewing the terms of our intellectual property agreements, communicating with our applicable personnel to identify services that have been performed on our behalf, and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of actual cost. The majority of our service providers invoice us monthly in arrears for services performed. We make estimates of our accrued expenses as of each balance sheet date in our financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. Examples of estimated accrued research and development expenses include fees to:

- contract manufacturers in connection with the production of clinical trial materials;
- contract research organizations and other service providers in connection with clinical studies;
- investigative sites in connection with clinical studies;
- vendors in connection with preclinical development activities; and
- professional service fees for consulting and related services.

We base our expenses related to clinical studies on our estimates of the services received and efforts expended pursuant to contracts with multiple research institutions and contract research organizations that conduct and manage clinical studies on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract, and may result in uneven payment flows and expense recognition. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual accordingly. Our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in our reporting changes in estimates in any particular period. To date, there have been no material differences from our estimates to the amounts actually incurred. However, due to the nature of these estimates, we cannot assure you that we will not make changes to our estimates in the future as we become aware of additional information about the status or conduct of our clinical studies or other research activity.

***Stock-based compensation expense***

For the years ended December 31, 2012 and 2013 and for the three months ended March 31, 2014, stock-based compensation expense was approximately $24,000, $38,000 and $11,000, respectively. As of December 31, 2013 and as of March 31, 2014, we had approximately $8,000 and $44,000, respectively, of total unrecognized compensation expense, which we expect to recognize over a period of approximately 0.4 years and 0.5 years, respectively. The intrinsic value of all outstanding stock options as of March 31, 2014 was approximately $ million based on a hypothetical common stock fair value of $ per share, the midpoint of the estimated price range. We expect to continue to grant equity incentive awards in the future as we continue to expand our number of employees and seek to retain our existing employees, and to the extent that we do, our actual stock-based compensation expense recognized in future periods will likely increase.

Stock-based compensation costs related to stock options granted to employees are measured at the date of grant based on the estimated fair value of the award, net of estimated forfeitures. We estimate the grant date fair value, and the resulting stock-based compensation expense, using the Black-Scholes option-pricing model. The grant date fair value of stock-based awards is recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the award. Stock options we grant to employees generally vest over four years.

The Black-Scholes option-pricing model requires the use of highly subjective assumptions to estimate the fair value of stock-based awards. If we had made different assumptions, our stock-based compensation

expense, net loss and net loss per share of common stock could have been significantly different. These assumptions include:

- *Fair value of our common stock:* Because our stock is not publicly traded, we must estimate its fair value, as discussed in "Common stock valuations" below.

- *Expected volatility:* As we do not have a trading history for our common stock, the expected stock price volatility for our common stock was estimated by taking the average historical price volatility for industry peers based on daily price observations over a period equivalent to the expected term of the stock option grants. Industry peers consist of several public companies in the medical device and diagnostics industries that are similar in size, stage of life cycle and financial leverage. We did not rely on implied volatilities of traded options in our industry peers' common stock because the volume of activity was relatively low. We intend to continue to consistently apply this process using the same or similar public companies until a sufficient amount of historical information regarding the volatility of our own common stock price becomes available, or unless circumstances change such that the identified companies are no longer similar to us, in which case, more suitable companies whose share prices are publicly available would be utilized in the calculation

- *Expected term:* We do not believe we are able to rely on our historical exercise and post-vesting termination activity to provide accurate data for estimating the expected term for use in estimating the fair value-based measurement of our options. Therefore, we have opted to use the "simplified method" for estimating the expected term of options.

- *Risk-free rate:* The risk-free interest rate is based on the yields of U.S. Treasury securities with maturities similar to the expected time to liquidity.

- *Expected dividend yield:* We have never declared or paid any cash dividends and do not presently plan to pay cash dividends in the foreseeable future. Consequently, we used an expected dividend yield of zero.

No employee options were granted in 2012 or 2013. There were 152,200 options granted in February 2014. In addition to the assumptions used in the Black-Scholes option-pricing model, we must also estimate a forfeiture rate to calculate the stock-based compensation expense for our awards. We will continue to use judgment in evaluating the expected volatility, expected terms, and forfeiture rates utilized for our stock-based compensation expense calculations on a prospective basis.

**Common stock valuations**

The estimated fair value of the common stock underlying our stock options was determined at each grant date by our board of directors and was supported by periodic independent third-party valuations. Our board of directors intended all options granted to be exercisable at a price per share not less than the per-share fair value of our common stock underlying those options on the date of grant. The valuations of our common stock were determined in accordance with the guidelines outlined in the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, or the Practice Aid. The methodology used by the third-party valuation specialists to determine the fair value of our common stock included estimating the fair value of the enterprise, subtracting the fair value of debt from this enterprise value, and then allocating this value to all of the equity interests using the option pricing method. The assumptions used in the valuation model to determine the estimated fair value of our common stock as of the grant date of each option are based on numerous objective and subjective factors, combined with management judgment, including the following:

- independent third-party valuations as of December 31, 2013 and March 31, 2014;

- progress of research and development activities;
- our operating and financial performance, including our levels of available capital resources;
- the valuation of publicly-traded companies in the diagnostics and biotechnology sectors;
- rights and preferences of our common stock compared to the rights and preferences of our other outstanding equity securities;
- equity market conditions affecting comparable public companies, as reflected in comparable companies' market multiples, initial public offering valuations and other metrics;
- the achievement of enterprise milestones, including our progress toward product approvals;
- the likelihood of achieving a liquidity event for the shares of common stock, such as an initial public offering or an acquisition of our company given prevailing market and biotechnology sector conditions;
- sales of our convertible preferred stock and convertible promissory notes in arms-length transactions;
- the illiquidity of our securities by virtue of being a private company;
- business risks; and
- management and board experience.

***Common stock valuation methodologies***

Because there has been no public market for our stock, our board of directors has determined the fair value of the common stock by considering a number of objective and subjective factors including valuations performed by unrelated third-party specialists, which included valuations of comparable companies, operating and financial performance, lack of liquidity of capital stock and general and industry-specific economic outlook, among other factors. The independent third-party specialists have provided valuations of our common stock as of December 31, 2013 and March 31, 2014. Our board of directors has reviewed the valuations of common stock performed by the third party valuation expert as part of determining the fair value of the common stock to set the exercise price for granted stock options.

The valuations were performed in accordance with applicable elements of the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, or the Practice Aid. The Practice Aid prescribes several valuation approaches for estimating the value of an enterprise, such as the cost, market and income approaches, and various methodologies for allocating the value of an enterprise to its common stock.

The Practice Guide identifies various available methods for allocating enterprise value across classes and series of capital stock to determine the estimated fair value of common stock at each valuation date. In accordance with the Practice Aid, we considered the following methods:

- *Option Pricing Method.* Under the option pricing method, or OPM, shares are valued by creating a series of call options with exercise prices based on the liquidation preferences and conversion terms of each equity class. The estimated fair values of the preferred and common stock are inferred by analyzing these options.

- *Hybrid Method.* The Hybrid Method blends the concepts of the Probability-Weighted Expected Return Method, or PWERM, with the concepts of the Option Pricing Method, or OPM. We considered the valuation of the common stock under the following scenarios: (a) the currently planned initial public offering; (b) a merger or sale of the business; or (c) remaining private. The first two scenarios were implemented by: (i) estimating the future equity value under each case; (ii) allocating the future value in each scenario according to the subject company's capital structure; (iii) weighting each scenario; (iv) discounting the value to a present value equivalent using a risk-adjusted discount rate; and (v) considering discounts for lack of control or marketability, as appropriate. In accordance with the Practice Aid, the third scenario, remaining private, is modeled using the OPM over a variety of timeframes until the senior securities such as our preferred stock are redeemed or repurchased.

Based on our early stage of development and other relevant factors, we determined that this combination was the most appropriate method for allocating our enterprise value to determine the estimated fair value of our common stock for valuations performed as of December 31, 2013, and March 31, 2014. On December 31, 2013 and March 31, 2014, we estimated the fair value of our common stock to be $0.63 and $0.76, respectively. Following the closing of this offering, the fair value of our common stock will be determined based on its closing price on NASDAQ.

***Estimated fair value of convertible preferred stock warrant liabilities***

We have issued warrants to purchase shares of our convertible preferred stock. We have classified the fair value of these warrants as liabilities on the balance sheet as they correspond to the treatment of the preferred stock as temporary equity. We account for the warrants as a derivative instrument. Changes in the fair value of the warrants are presented separately as changes in warrant liability in our statements of operations for each reporting period. We use the Monte Carlo simulation model to determine the fair value of the warrants. As a result, the valuation of this derivative instrument is subjective because the option-valuation model requires the input of highly subjective assumptions, including the expected stock price volatility and the probability of a future occurrence of an fundamental transaction. Changes in these assumptions can materially affect the fair value estimate and, such impacts can, in turn, result in material non-cash charges or credits, and related impacts on earnings or loss per share, in the statements of operations. We will continue to adjust the liability for changes in fair value until the earlier of the expiration of the warrants or their exercise, at which time the liability will be reclassified into stockholders' deficit. We records any change in fair value as a component of other income or expense.

***Income taxes***

We account for income taxes using the asset and liability method. Under this method, deferred income tax assets and liabilities are recorded based on the estimated future tax effects of differences between the amounts at which assets and liabilities are recorded for financial reporting purposes and the amounts recorded for income tax purposes. Deferred income taxes are classified as current or non-current, based on the classifications of the related assets and liabilities giving rise to the temporary differences. A valuation allowance is provided against our deferred income tax assets when their realization is not reasonably assured.

We assess all material positions taken in any income tax return, including all significant uncertain positions, in all tax years that are still subject to assessment or challenge by relevant taxing authorities. Assessing an uncertain tax position begins with the initial determination of the position's sustainability and is measured at the largest amount of benefit that is greater than fifty percent likely to be realized upon ultimate settlement. As of each balance sheet date, unresolved uncertain tax positions must be reassessed, and we will determine whether (i) the factors underlying the sustainability assertion have changed and (ii) the amount of the recognized tax benefit is still appropriate. The recognition and measurement of tax benefits requires significant judgment. Judgments concerning the recognition and measurement of a tax benefit might change as new information becomes available.

**Results of operations**

***Comparison of the three months ended March 31, 2013 and 2014 (Unaudited)***

The following table summarizes our net income (loss) during the periods indicated (in thousands, except percentages):

| | Three Months Ended March 31, | | Increase/(Decrease) | |
|---|---|---|---|---|
| | 2013 | 2014 | | |
| Revenue | $ 3,000 | $ — | $ (3,000) | (100%) |
| Operating expenses: | | | | |
| Research and development | 703 | 372 | (331) | (47%) |
| General and administrative | 416 | 312 | (104) | (25%) |
| Income (loss) from operations | 1,881 | (684) | (2,565) | (136%) |
| Interest income (expense), net | (944) | (388) | (556) | (59%) |
| Other income (expense), net | 77 | 238 | 161 | 211% |
| Net income (loss) | $ 1,014 | $ (834) | $ (1,848) | (182%) |

***Revenue***

No revenue was recognized in the three months ended March 31, 2014. The $3.0 million revenue recognized in the three months ended March 31, 2013 represented the revenue recognized in the form of a non-refundable up-front payment pursuant to our license agreement with GSK.

***Research and development expense***

Research and development expense decreased $0.3 million, or 47%, from $0.7 million in the three months ended March 31, 2013 to $0.4 million in the three months ended March 31, 2014. The expenses are associated with clinical trials conducted with CoSense in 2013 and the decline in expenses was due to the ramp-down of regulatory costs associated with the approval of CoSense.

***General and administrative expense***

General and administrative expense decreased $0.1 million, or 25%, from $0.4 million in the three months ended March 31, 2013 to $0.3 million in the three months ended March 31, 2014. The decrease in general and administrative expense was primarily due to lower consulting fees, professional services and facilities-related expenses incurred during the 2014 period as compared to 2013.

***Interest income***

Interest income was not material and remained relatively consistent between the two quarters.

***Interest expense***

Interest expense decreased $0.6 million, or 59% from $0.9 million in the three months ended March 31, 2013 to $0.4 million in the three months ended March 31, 2014. Interest expense includes the amortization of the debt discounts associated with the convertible notes, and because the discounts to the notes were fully amortized as of December 31, 2013, the three months ended 2014 was less than the comparable period in 2013. We recorded accrued interest expense on the convertible promissory notes outstanding during the three months ended March 31, 2013 and 2014. The total principal plus accrued interest on the convertible promissory notes as of March 31, 2013 and 2014 was $12.0 million and $14.4 million, respectively.

***Other income (expense), net***

The other income in the three months ended March 31, 2013 increased by $0.2 million or 211% from $77,000 in the three months ended March 31, 2013 to $238,000 in the three months ended March 31, 2014. This increase was primarily due to a change in the fair value of the preferred stock warrants of $0.2 million.

**Results of operations**

***Comparison of the years ended December 31, 2012 and 2013***

The following table summarizes our net loss during the periods indicated (in thousands, except percentages):

| | Year Ended December 31, | | Increase/(Decrease) | |
|---|---|---|---|---|
| | 2012 | 2013 | | |
| Revenue | $ — | $ 3,000 | $ 3,000 | NM(1) |
| Operating expenses: | | | | |
| Research and development | 2,470 | 2,380 | (90) | (4)% |
| General and administrative | 1,127 | 1,467 | 340 | 30% |
| Loss from operations | (3,597) | (847) | (2,750) | (76)% |
| Interest income (expense), net | (2,863) | (2,858) | (5) | NM(1) |
| Other income (expense), net | (22) | (2) | (20) | NM(1) |
| Net loss | $ (6,482) | $ (3,707) | $ (2,775) | (43)% |

(1) Not meaningful.

***Revenue***

No revenue was recognized in the year ended December 31, 2012. The $3.0 million revenue recognized in the year ended December 31, 2013 represented the revenue recognized pursuant to our license agreement with GSK.

***Research and development expense***

Research and development expense decreased $0.1 million, or 4%, from $2.5 million for 2012 to $2.4 million for 2013. This was due to expenses associated with clinical trials conducted with CoSense in 2013 and the ramp-down of regulatory costs associated with approval of CoSense. For the years ended December 31, 2012 and 2013, substantially all of our research and development expense related to our development activity for Serenz and CoSense.

***General and administrative expense***

General and administrative expense increased $0.3 million, or 30%, from $1.1 million for 2012 to $1.5 million for 2013. The increase in general and administrative expense was primarily due to additional consulting, professional services and facilities expenses incurred during the 2013 period as compared to 2012, as we prepared for commercialization of the CoSense product and pursued license opportunities for our Serenz product.

***Interest income***

Interest income was not material and remained relatively consistent between the two years.

***Interest expense***

Interest expense remained relatively the same in each period, including $2.9 million for both periods. We record interest expense on the convertible promissory notes outstanding during the year, and as of December 31, 2012 and 2013, the total principal and accrued but unpaid interest balance on the notes was $11.1 and $14.0 million, respectively. Interest expense included non-cash expense related to the amortization of the debt discount in both years.

***Other income (expense), net***

Other income (expense), net decreased $20,000, from $22,000 in expense for 2012 to $2,000 in expense for 2013. This decrease was primarily due to a change in the fair value of the preferred stock warrant liability and the receipt in 2013 of $0.1 million due to a payment from an insurance company that converted from a mutual company to a privately held company.

**Liquidity, capital resources and plan of operations**

Since our inception and through March 31, 2014, we have financed our operations primarily through private placements of our equity securities and debt financing. At March 31, 2014, we had cash and cash equivalents of $0.8 million, a majority of which is invested in a money market fund at an AAA-rated financial institution. We expect to incur substantial expenditures in the foreseeable future for the development and potential commercialization of Serenz and CoSense products.

We may continue to require additional financing to develop our future products and fund operations for the foreseeable future. In April 2014, we received gross proceeds of approximately $1.8 million from the sale of convertible promissory notes, and we will continue to seek funds through equity or debt financings (including this offering), collaborative or other arrangements with corporate sources, or through other sources of financing. Assuming we are successful in concluding this offering, we expect that we will have sufficient working capital to execute on our business plan through at least June 2015. If we are not successful in concluding this offering, nor able to raise any additional funds via alternative sources of financing, we expect that we will have to restructure our business significantly to focus resources on the commercial launch of CoSense, and without significant near-term revenue from CoSense sales, we may not continue as a going concern. Adequate additional funding may not be available to us on acceptable terms, or at all. Our failure to raise capital as and when needed could have a negative impact on our financial condition and our ability to pursue our business strategies. These uncertainties raise substantial doubt as to our ability to continue as a going concern. Our financial statements included in this prospectus do not include any adjustments that might be necessary if we are unable to continue as a going concern. We anticipate that we may need to raise substantial additional capital, the requirements of which will depend on many factors, including:

- the rate of progress in the commercialization of our products and the generation of revenue from product sales;
- the degree and rate of market acceptance of any products launched by us or future partners;
- the cost of commercializing our products, including the costs of sales, marketing, and distribution;
- the costs of developing our anticipated internal sales and marketing capabilities;
- the cost of preparing to manufacture our products on a larger scale;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;

- our ability to enter into additional collaboration, licensing, commercialization or other arrangements and the terms and timing of such arrangements; and

- the emergence of competing technologies or other adverse market developments.

If we are unable to raise additional funds when needed, our ability to attain commercial success with CoSense, or our other potential products, may be impaired. We may also be required to delay, reduce, or terminate some or all of our development programs and clinical trials. We may also be required to sell or license to others technologies or future products or programs that we would prefer to develop and commercialize ourselves.

**Cash flows**

The following table sets forth the primary sources and uses of cash and cash equivalents for each of the periods presented below:

| | Year Ended December 31, | | Three Months Ended March 31, | |
|---|---|---|---|---|
| | 2012 | 2013 | 2013 | 2014 |
| | | | (unaudited) | |
| Net cash used in operating activities | $ (3,496,432) | $ (885,218) | $ 2,084,895 | $ (509,359) |
| Net cash used in investing activities | (2,490) | (1,274) | (1,274) | - |
| Net cash provided by financing activities | 5,026,898 | - | - | 4,500 |
| Net increase (decrease) in cash and cash equivalents | $ 1,527,976 | $ (886,492) | $ 2,083,621 | $ (504,859) |

***Cash provided by (used in) operating activities***

During the three months ended March 31, 2014, net cash used in operating activities was $0.5 million, which was primarily due to the use of funds in our operations related to the development of our products. Net cash provided by operating activities in the three months ended March 31, 2013 was due primarily to the receipt of $3.0 million from GSK, less operating expenses incurred during the period.

Net cash used in operating activities was $3.5 million and $0.9 million in 2012 and 2013, respectively, which was primarily due to the use of funds in our operations related to the development of our products. Cash used in operating activities in 2013 decreased compared to 2012 primarily due to licensing revenues received in 2013, resulting in lower net loss from operations.

***Cash used in investing activities***

Cash used in investing activities consisted primarily of investment in equipment, and an increase in restricted cash due to requirements under lease obligations.

***Cash provided by financing activities***

During the three months ended March 31, 2014, cash provided by financing activities was $4,500, consisting primarily of net proceeds from the sale of property, plant and equipment.

Cash provided by financing activities was $0 in 2013, compared to $5.0 million in 2012. Cash provided by financing activities in 2012 consisted primarily of net proceeds from the issuance of convertible promissory notes.

As of June 30, 2014, we had cash and cash equivalents of approximately $1.2 million, including the net proceeds we received from our convertible note financing in April 2014. As described in Note 1 of our accompanying audited financial statements, our auditors have included a “going concern” provision in their

opinion on our financial statements, expressing substantial doubt that we can continue as an ongoing business for the next twelve months. The offering contemplated in this prospectus would give us cash resources for at least the next twelve months according to our current business plan. In the event that this offering does not raise a sufficient amount, we may be required to alter our business plan, which may impair the value of our business.

**Contractual obligations and commitments**

As of December 31, 2013, we had lease obligations totaling $111,000 consisting of an operating lease for our operating facility that expired in May 2014. We signed a sublease in May 2014, which expires in May 2015, for a new office space in Redwood City, California that expires in May 2015. The sublease is for one year commencing June 1, 2014, with an option to renew to June 2018. We prepaid rent for the last four months of the initial lease term. Minimum payments under the agreement are $199,000 in calendar 2014 and $18,000 in calendar 2015.

The following table summarizes our contractual obligations as of December 31, 2013. The liability amounts attributable to the convertible notes payable and interest will convert automatically into shares of common stock immediately prior to the close of this offering.

| | Payments due by period | | | | |
|---|---|---|---|---|---|
| | Less than 1 year | 1 to 3 years | 4 to 5 years | After 5 years | Total |
| | (in thousands) | | | | |
| Lease obligations | $ 111 | $ — | $ — | $ — | $ 111 |
| Convertible notes payable and interest(1) | — | 13,992 | — | — | 13,992 |
| Total | $ 111 | $13,992 | $ | $ — | $14,103 |

(1) Includes accrued and unpaid interest.

We are obligated to make future payments to third parties under in-license agreements, including sublicense fees, royalties, and payments that become due and payable on the achievement of certain development and commercialization milestones. As the amount and timing of sublicense fees and the achievement and timing of these milestones are not probable and estimable, such commitments have not been included on our balance sheet or in the contractual obligations tables above. We are also obligated to make certain payments of deferred compensation to management upon completion of certain types of transactions. As the amount and timing of such payments are not probable and estimable, such commitments have not been included on our balance sheet or in the contractual obligations tables above.

***Convertible Promissory Notes***

In 2010, we entered into a convertible promissory note and warrant purchase agreement with various investors, pursuant to which we sold convertible promissory notes to the investors totaling approximately $5.2 million. The notes are collateralized by substantially all of our assets and bear interest at a fixed rate of 12% per annum, which is accrued but not paid. These notes are convertible into equity securities at a 25% discount to the price per share of the next round of equity securities to be issued. In connection with the sale of additional convertible promissory notes issued by us in April 2014, as described below, we extended the maturity date of the outstanding 2010 convertible promissory notes to September 30, 2015, or upon an occurrence of demand, made after such date, by the holders of two-thirds of the total principal amount of the 2010 convertible promissory notes then outstanding.

In 2012, we entered into a convertible promissory note and warrant purchase agreement, as amended, with various investors, pursuant to which we sold convertible promissory notes totaling: (i) in January 2012, $1.9 million; and (ii) in July 2012, $3.1 million, respectively. The notes are collateralized by substantially all of our assets and bear interest at a fixed rate of 12% per annum, which is accrued but not paid. They are convertible

into equity securities at a 25% discount to the price per share of the next round of equity securities to be issued. In connection with the sale of additional convertible promissory notes issued by us in April 2014, as described below, we extended the maturity date of the outstanding 2012 convertible promissory notes to September 30, 2015, or upon an occurrence of demand, made after such date, by the holders of two-thirds of the total principal amounts of 2012 convertible notes payable then outstanding.

We refer to the 2010 convertible promissory notes and 2012 convertible promissory notes, collectively in this prospectus as the 2010/2012 convertible promissory notes. The outstanding 2010/2012 convertible promissory notes, and warrants associated therewith, were subsequently amended in May 2014 to provide for the conversion of these notes into shares of our common stock, in connection with this offering, at a discount of 25% of the public offering price of the common stock, and exercise of the warrants for shares of our common stock with an exercise price of 75% of the public offering price of the common stock. Additionally, upon conversion of the outstanding 2010/2012 convertible promissory notes into shares of our common stock in this offering, the security interest associated with these instruments will be extinguished.

In April 2014, we entered into a convertible promissory note and warrant purchase agreement with various investors, pursuant to which we sold convertible promissory notes to the investors totaling approximately $1.8 million. The maturity date of these notes is September 30, 2015, following which, upon an occurrence of demand, made after such date, by the holders of two-thirds of the total principal amount of 2014 convertible promissory notes then outstanding, the principal amount and accrued interest will become repayable. The 2014 convertible promissory notes are unsecured and bear interest as follows: (i) if this offering is completed, at a fixed rate of 2% per annum; or (ii) if a convertible preferred stock financing occurs before the completion of this offering, or if neither this offering nor a convertible preferred stock financing is completed before the maturity date of these notes, at a fixed rate of 12% per annum. The 2014 convertible promissory notes are convertible as follows: (i) if this offering is completed, these notes will automatically convert into units at a discount of 30% to the public offering price of the units; or (ii) (A) if a convertible preferred stock financing which results in gross proceeds to us of at least $1.5 million (excluding the conversion of all of our outstanding convertible promissory notes) occurs prior to this offering being completed, the 2014 convertible promissory notes will automatically convert into the series of convertible preferred stock sold in that financing at a price per share equal to 75% of the price per share paid by other investors in that financing, or (B) if no such preferred stock financing which results in gross proceeds to us of at least $1.5 million (excluding conversion of these notes) occurs prior the maturity date of these notes, these notes may be converted, at the election of each note holder, into either (1) shares of the series of convertible preferred stock sold in our next preferred stock financing at a price per share equal to 75% of the price per share paid by other investors in such financing, or (2) shares of our Series C convertible preferred stock, at a price per share of $1.35 per share, in each case following the maturity date of these notes.

We apply the accounting standards for derivatives and hedging and for distinguishing liabilities from equity when accounting for hybrid contracts that feature conversion options. Our accounts for convertible debt instruments when we have determined that the embedded conversion options should not be bifurcated from their host instruments in accordance with ASC 470-20 *"Debt with Conversion and Other Options"*. Our records, when necessary, discount to convertible notes for the intrinsic value of conversion options embedded in debt instruments based upon the differences between the fair value of the underlying stock at the commitment date of the note transaction and the effective conversion price embedded in the note. Debt discounts under these arrangements are amortized over the term of the related debt.

***Off-balance sheet arrangements***

Since our inception, we have not engaged in any off-balance sheet arrangements, as these are defined in the rules and regulations of the SEC.

***JOBS Act accounting election***

The JOBS Act permits an "emerging growth company" such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We are

choosing to take advantage of this provision and, as a result, we will adopt the extended transition period available under the JOBS Act until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided under the JOBS Act.

**Quantitative and qualitative disclosures about market risk**

The primary objective of our investment activities is to preserve our capital to fund our operations. We also seek to maximize income from our cash and cash equivalents without assuming significant risk. To achieve our objectives, we invest our cash and cash equivalents in money market funds. As of March 31, 2014, we had cash and cash equivalents of $0.8 million consisting of cash and investments in a highly liquid U.S. money market fund. A portion of our investments may be subject to interest rate risk and could fall in value if market interest rates increase. However, because our investments are primarily short-term in duration, we believe that our exposure to interest rate risk is not significant and a 1% movement in market interest rates would not have a significant impact on the total value of our portfolio. We actively monitor changes in interest rates and invest in accordance with an investment policy ratified by the Audit Committee of our board of directors.

**Controls and procedures**

A company's internal control over financial reporting is a process designed by, or under the supervision of, that company's principal executive and principal financial officers, or persons performing similar functions, and effected by that company's board of directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with policies or procedures may deteriorate.

In connection with our preparation for this offering, we concluded that there was a material weakness in our internal control over financial reporting that caused the restatement of our previously issued financial statements as of and for the year ended December 31, 2012, and the deficiencies extended through the year ended December 31, 2013. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

The following material weakness was identified: We did not maintain a sufficient complement of resources with an appropriate level of accounting knowledge, experience and training commensurate with our structure and financial reporting requirements. As of December 31, 2013, our financial operations staff consisted of one part-time consultant.

During the first quarter of 2014 and in preparation for this offering, we initiated various remediation efforts, including initiation of hiring processes for additional personnel with the appropriate public company and technical accounting expertise, and other actions that are more fully described below. As such remediation efforts are still ongoing, we have concluded that the material weakness has not been remediated. Our remediation efforts to date have included the following:

*Addition of Employee Resources*—We are in the process of adding appropriate full-time resources to our finance team and are have hired additional external consultants with public company and technical accounting experience to facilitate accurate and timely accounting closes, and to accurately prepare and review financial statements and related footnote disclosures. Our finance team is being expanded to include external consultants with significant financial and accounting technical experience.

*Other Actions to Strengthen the Internal Control Environment*—As a result of the additional resources added to the finance function, we are allowing for separate preparation and review of the reconciliations and

other account analyses. In addition, these additional finance resources are allowing us to develop a more structured close process, including enhancing our existing policies and procedures, to improve the completeness, timeliness and accuracy of our financial reporting and disclosures including, but not limited to, those regarding proper financial statement classification, recognition of accruals to ensure proper period-end cutoff of expenses and assessing more judgmental areas of accounting.

The actions that have been taken are subject to continued review, supported by confirmation and testing by management as well as audit committee oversight. While we have implemented a plan to remediate this weakness, we cannot assure you that we will be able to remediate this weakness, which could impair our ability to accurately and timely report our financial position, results of operations or cash flows.

***See "Risk factors—Risks relating to our business— "We have identified a material weakness in our internal control over financial reporting as of December 31, 2013, and may identify additional material weaknesses in the future that may cause us to fail to meet our reporting obligations or result in material misstatements of our financial statements. If we fail to remedy our material weaknesses, or if we fail to establish and maintain effective control over financial reporting, our ability to accurately and timely report our financial results could be adversely affected."***

# BUSINESS

## Overview

We develop medical diagnostics and therapeutics based on our proprietary technology for precision metering of gas flow. Our first product, CoSense, aids in the diagnosis of hemolysis in neonates, a dangerous condition in which red blood cells degrade rapidly, which can lead to long-term developmental disability. CoSense received initial 510(k) clearance for sale in the U.S. in the fourth quarter of 2012, with a more specific Indication for Use related to hemolysis in the first quarter of 2014, and received CE Mark approval for sale in the European Union, or E.U., in the third quarter of 2013.

With respect to therapeutics, we have previously obtained CE Mark approval in the E.U. for Serenz, an as-needed treatment for allergic rhinitis, or AR, that has shown statistically significant improvements in AR symptoms in randomized, controlled Phase 2 clinical trials. Our research and development efforts are focused on additional diagnostic products based on our Sensalyze Technology Platform, a portfolio of proprietary methods and devices which enables CoSense, and can be applied to detect a variety of analytes in exhaled breath.

Approximately 143 million babies are born annually worldwide, with approximately 9.2 million of these born in the U.S. and E.U. Over 60% of neonates present with jaundice at some point in the first five days of life. We believe CoSense has the potential to become a part of routine pre-discharge screening for all newborns, by aiding in the differential diagnosis of hemolysis in infants that present with, or are at risk of developing, jaundice. Red blood cell breakdown is a normal phenomenon but in certain situations the breakdown is accelerated or is excessive, and is referred to as hemolysis. The most common cause of hospital readmission during the neonatal phase is jaundice, and we expect that CoSense will help reduce such readmissions. Many causes of jaundice do not represent a significant health threat. However, when severe jaundice occurs in the presence of hemolysis, rapid diagnosis and treatment may be necessary for infants to avoid life-long neurological impairment or other disability. Also, unnecessary treatment increases hospital expenses, is stressful for both infant and parents and may increase morbidity. There is an unmet need, therefore, for more accurate diagnostics for hemolysis, particularly if they are non-invasive, rapid, and easy to use. Currently, hemolysis is detected via a variety of blood tests, which are limited in their diagnostic accuracy and suffer from other drawbacks, including the need for painful blood draws and a waiting period for results. CoSense detects hemolysis by measuring carbon monoxide, or CO, in the portion of the exhaled breath that originates from the deepest portion of the lung. This is referred to as the “end-tidal” component of the breath, and the measurement we perform with CoSense is referred to as end-tidal carbon monoxide, or ETCO. This measurement is typically reported after being corrected for ambient CO levels, and is referred to as ETCOc. Throughout this document, ETCO refers to ETCOc levels. The American Academy of Pediatrics, or AAP, guidelines published in the journal Pediatrics in 2004 recommend ETCO measurement be performed to assess the presence of hemolysis in neonates requiring phototherapy, neonates unresponsive to phototherapy or readmitted for phototherapy and neonates with bilirubin levels approaching transfusion levels. Because CO is a direct byproduct of hemolysis, ETCO can measure the rate of bilirubin production from hemolysis. However, no device is currently commercially available for accurately measuring the ETCO levels associated with the rate of hemolysis in clinical practice in neonates. As a result, we believe that CoSense will be the only device on the market that enables physicians to practice in accordance with the AAP guidelines when evaluating jaundiced neonates for potential treatment.

We are currently focused on launching CoSense commercially, which we intend to commence in the second half of 2014 with the proceeds of this offering. CoSense combines a portable detection device with a single-use disposable nasal cannula to measure ETCO. While our launch efforts will initially focus on establishing an installed base of devices and building physician support for the device, we expect sales of the disposable cannula to be the largest component of our revenue over time. An electronic interface between the device and the consumable cannula requires one-time use of our cannula, which also promotes good hygiene and is necessary to preserve the accuracy of the device.

Sales and marketing activities associated with the launch of CoSense comprise a significant portion of our planned use of proceeds from this offering. We plan to hire our own sales force to market CoSense to hospitals and other medical institutions in the U.S. We also intend to use our research and development expertise to develop additional diagnostic devices based on our Sensalyze Technology Platform that can also be sold by our sales force. Our current development pipeline includes proposed diagnostic devices for asthma in children, assessment of blood carbon dioxide, or $CO_2$, concentration in neonates and malabsorption in infants with colic. We may also license elements of our Sensalyze Technology Platform to other companies that have complementary development or commercial capabilities.

Serenz, our therapeutic product candidate, is a treatment for symptoms related to AR, which, when triggered by seasonal allergens, is commonly known as hay fever or seasonal allergies. Several Phase 2 clinical trials have been completed in which Serenz showed statistically significant improvements in total nasal symptom scores, or TNSS, in symptomatic patients when compared to controls. AR is typically an episodic disorder with intermittent symptoms. However, there is no treatment currently available that provides truly rapid relief of symptoms, other than topical decongestants, which can have significant side effects. The more optimal therapeutic for an episodic disorder is one that will treat symptoms when they occur, and can therefore be taken only as needed. We believe that Serenz has an ideal profile for an as-needed therapeutic for AR and may provide advantages over regularly dosed, slow to act currently marketed products.

We currently plan to commercialize Serenz in the E.U. via distributorship arrangements. In the U.S., we intend to determine the regulatory approval pathway with the U.S. Food and Drug Administration, or FDA, for Serenz and subsequently to seek a partner or distributorship arrangements for commercialization.

**CoSense**

CoSense is the first device using our Sensalyze Technology Platform to achieve regulatory approval. CoSense detects ETCO, which can be elevated due to endogenous causes such as excessive breakdown of red blood cells, or hemolysis, or exogenous causes such as CO poisoning and smoke inhalation. Our first target market is for the detection of hemolysis in neonates, a disorder in which CO and bilirubin are produced in excess as byproducts of the breakdown of red blood cells. Hemolysis can place neonates at high risk for hyperbilirubinemia and resulting neurodevelopmental disability. The AAP recommends the use of ETCO monitoring to evaluate neonates for hemolysis, but there is no device currently on the market for physicians to effectively monitor ETCO in clinical practice.

***Hemolysis and Bilirubin***

We estimate that 34% of the 9.2 million newborns in the U.S. and E.U. each year should be tested for hemolysis under current treatment practice, representing approximately 3.1 million newborns. We believe that many of these infants are tested, but using relatively inaccurate and invasive diagnostic methods. Retrospective analysis of data, including data from over 54,000 infants compiled by the Collaborative Perinatal Project sponsored by the National Institutes of Health, or NIH, suggests that the only factor that predisposes infants with jaundice to adverse neurodevelopmental outcomes is the concurrent presence of hemolysis. Hemolysis can be caused by a number of factors, including physical trauma and bruising, blood group incompatibility, autoimmune disorders, and genetic causes such as sickle cell disease and G6PD enzyme deficiency. Because bilirubin is the chemical byproduct of the destruction of hemoglobin within red blood cells, hemolysis causes bilirubin production to spike. Bilirubin is yellow in color, and if present in excessive amounts in the body, known as hyperbilirubinemia, it can be deposited in tissues such as the skin and conjunctiva. The condition manifests as a yellowing of skin and conjunctiva and is called jaundice. Elevated levels of bilirubin are particularly dangerous to neonates, who have immature livers and therefore lack the adult ability to excrete bilirubin. Neonates also lack a well-formed blood-brain barrier to prevent bilirubin from entering the central nervous system, or CNS, where bilirubin is known to be toxic to neuronal tissue.

***Adverse Effects of Jaundice and Hyperbilirubinemia***

Every year approximately 143 million babies are born world-wide, of which 4.0 million are in the U.S. and 5.2 million in the E.U. It is estimated that up to 60% of term neonates and 80% of preterm neonates may have jaundice. Most neonates have non-pathologic jaundice, which is related to a decreased capacity of the neonate to excrete bilirubin into the intestinal tract for elimination from the body. These neonates will often normalize their bilirubin levels without a need for treatment. When treatment is required, it is typically via phototherapy, which typically involves isolating the baby in a chamber that directs blue-wavelength light to the baby's skin. The light penetrates the skin and breaks down bilirubin via a photochemical reaction over a period of several hours. When treatment is performed in a timely fashion, adverse outcomes can be avoided. Some neonates with jaundice, however, will develop adverse neurodevelopmental outcomes related to hyperbilirubinemia.

According to the Agency for Healthcare Research and Quality, part of the U.S. Department of Health and Human Services, neonatal jaundice is the single largest cause for hospital readmission of neonates in the U.S. This results in inefficient care and can also be highly stressful and disruptive for the parents and neonate.

Exposure to excess bilirubin in the CNS as a result of hyperbilirubinemia is toxic and may cause long-term developmental disabilities. These abnormalities may be subtle, and include hearing problems and low IQ. Subtle forms of disability are known as Bilirubin-Induced Neurological Dysfunction, or BIND. More severe bilirubin-induced disabilities, including respiratory failure and resulting death, can be referred to as Acute Bilirubin Encephalopathy, or ABE. Bilirubin toxicity can ultimately result in a chronic, severe, and disabling condition called kernicterus. Kernicterus is a cerebral palsy-like condition in which the patient lacks muscle tone and motor control, cannot operate self-sufficiently, and can require long-term care. The National Quality Forum has in the past described kernicterus as a "never event," one which physicians should ensure never occurs in their practice.

***Limitations of Current Diagnostic Methods***

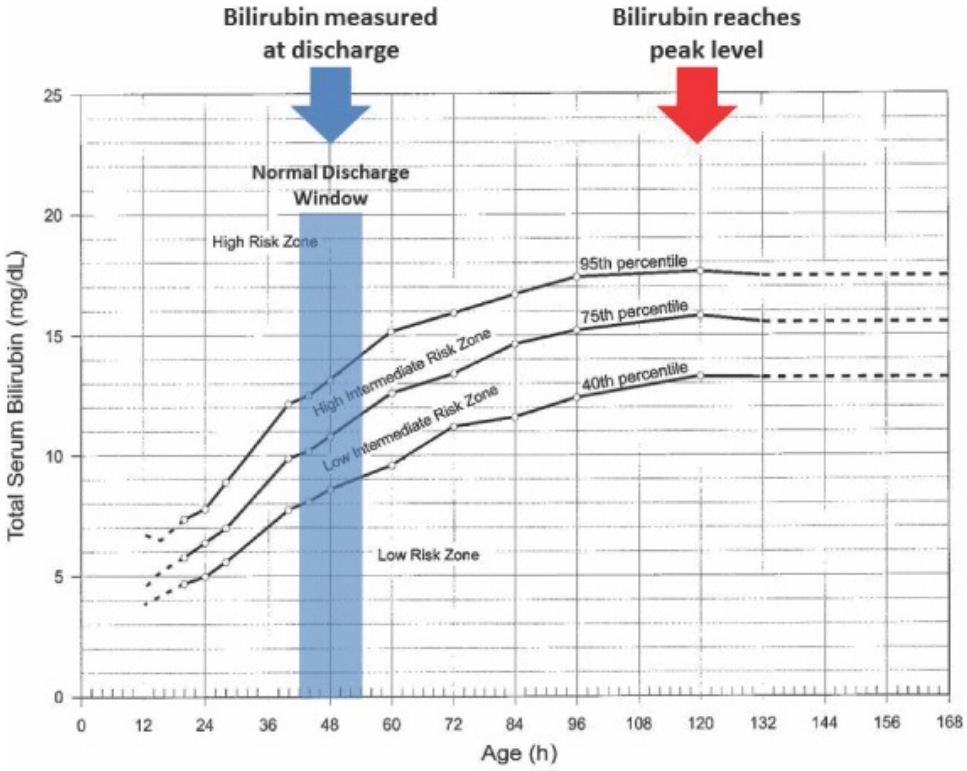
It has been reported in peer-reviewed publications that the presence of hemolysis in a neonate with jaundice is a predictor of adverse neurodevelopmental outcomes. If neonates with high rates of hemolysis could be identified before they are discharged from the hospital, treatment could begin earlier, exposure to excessive bilirubin would be minimized and readmissions for jaundice would be reduced. Currently, accurate tools for diagnosing hemolysis in neonates are not available in the market. Tests that are commonly done to assess hemolysis such as serial hematocrit levels, reticulocyte counts and peripheral smear, are all invasive blood tests and are less useful in neonates due to physiologic changes resulting from childbirth. Hematocrit levels and reticulocyte counts may be elevated in neonates unrelated to pathological conditions, and confound the diagnosis of hemolysis, which typically involves low hematocrit and high reticulocyte counts. The Coombs test, a blood test that detects antibodies that can cause hemolysis, is used extensively as a measure of hemolysis; however, it often requires a painful heel stick to draw a blood sample, and other conditions besides hemolysis may trigger a false positive or false negative Coombs test. In spite of these limitations, we believe that the Coombs test remains the most frequently used diagnostic for hemolysis by physicians.

Today, the AAP recommends that all neonates be routinely tested for bilirubin levels at some point prior to being discharged from the hospital, although other organizations such as the United States Preventive Services Task Force or USPSTF, have not made similar recommendations. In many hospitals this is done via a blood test, although transcutaneous bilirubin meters are now available to test bilirubin levels non-invasively through the skin. Inaccurate results with use of these devices have been reported based on serum bilirubin level, measurement site, race, and ethnicity. In addition, bilirubin levels reflect only a point in time rather than the rate of increase, and therefore, may not address the risk of subsequent adverse outcomes. These tests do not capture the rate of bilirubin production or the presence/absence of hemolysis, leaving the physician uncertain as to the patient's level of risk. Since many babies have bilirubin levels in a zone described as "intermediate risk" by current treatment guidelines, it is difficult for physicians to decide whether to treat aggressively or more conservatively.

Phototherapy is widely used to treat jaundice, and applied to approximately 8% of all births in the U.S. However, phototherapy treatment disrupts the opportunity for parent-newborn bonding, and is often highly stressful for infants and new parents. In some cases, particularly among low-risk newborns who are jaundiced, but not hemolyzing, phototherapy may not be necessary. In other cases, observation of jaundice and early testing for hemolysis may accelerate diagnosis and treatment with phototherapy. In all cases, understanding the rate of hemolysis is a critical part of providing timely and effective care. There is a significant need for a test to aid in the diagnosis of hemolysis that is rapid, accurate, and easy to use across all acuity levels within neonatal care.

Also, neonates are typically discharged from the hospital at approximately 48 hours of normal birth in the U.S. Hospitals are under pressure to discharge even earlier, in order to reduce costs and manage inpatient capacity. Bilirubin levels, however, typically peak more than 72 hours post birth, as shown in Figure 1 below. We believe that neonates with hemolysis can experience bilirubin levels in the intermediate risk range at time of discharge, but can spike rapidly to neurotoxic levels in the post-discharge period, out of the range expected based on the "Bhutani nomogram."

**Figure 1: Survey-based "Bhutani nomogram" of bilirubin levels over time, based on data from 2,840 neonates**




Curved lines represent 40th, 75th and 95th percentile levels of bilirubin at specific age in hours

Physicians need to identify the cause of the jaundice and, based upon these findings, determine whether the infant is at serious risk for BIND, ABE, or kernicterus. However, physicians often have a diagnostic dilemma as to what is causing the jaundice. It is often not possible, with current diagnostic techniques and clinical workflow, to test whether it is merely a physiologic jaundice that poses little risk, or some other process that presents a serious risk to the neonate. Risk arises primarily from the presence of hemolysis, which leads to

hyperbilirubinemia that persists rather than resolving spontaneously. As a result of the serious consequences of hyperbilirubinemia, the AAP recommends that all neonates be closely monitored for jaundice, and has called for physicians to determine the presence or absence of hemolysis in order to make appropriate treatment decisions. As a result, there are both clinical need and physician interest in the development of accurate and non-invasive methods for detecting hemolysis. CoSense addresses this need to measure a baby's exhaled CO to assess the rate of hemolysis accurately, and does so via a non-invasive measurement at the point-of-care. It delivers results within minutes, enabling more timely treatment than the current standard of care.

***CoSense: FDA 510(k) Clearance and CE Mark Approval***

CoSense, our first Sensalyze Technology Platform product to receive 510(k) clearance from the FDA and CE mark approved, is a monitor of end-tidal CO, or ETCO. CO is a direct byproduct of hemolysis, and based on extensive published data such as that from Stanford University, the rate of bilirubin production can be measured by analyzing the concentration of CO in a neonate's exhaled breath.

CoSense is a point-of-care device that consists of a light-weight, compact monitoring device and a single-use nasal cannula, both shown in Figure 2 below. The cannula is placed just inside the nostril of the neonate and is connected to the monitor. The CoSense device is turned on and acquires the breath signal while the neonate breathes. Appropriate sample acquisition takes an average of 30 seconds. The cannula can then be removed from the baby and the device takes another four minutes to report the test result.

**Figure 2: CoSense**


**CoSense**
Dimensions: 9.7 x 7.8 x 2.7 inches

The AAP recommends the use of ETCO monitoring for the detection of hemolysis. We believe ETCO monitoring will enable more rapid and appropriate treatment decisions and reduce overall costs of patient care. However, there is currently no device on the market that effectively measures ETCO in neonates.

With CoSense data, physicians may be able to quickly identify neonates with jaundice who are at risk of adverse neurological outcomes or other disability because of hemolysis. The physician can then initiate earlier treatments for jaundice, such as phototherapy, when necessary. As shown in Figure 3 below, we believe the potential impact of CoSense should result in reduced development of hyperbilirubinemia in neonates. In addition, CoSense may also help identify neonates who do not have excessive hemolysis, and therefore may not require phototherapy or serial bilirubin measurements. As a result, these infants may be discharged from the hospital earlier, or with less intensive clinical follow-up. We believe this will reduce the total number of blood draws that are necessary. We also believe this will reduce the rate of readmissions, resulting in significant cost savings for the hospital.

CoSense has the following advantages that we believe will drive its adoption by hospitals, other medical institutions and physicians:

- rapid administration at the point-of-care, yielding results in approximately five minutes;
- non-invasive and minimally disruptive to the neonate;
- no requirement for specific breath maneuver;
- simple user interface that allows the healthcare professional to use it correctly with minimal training;
- no on-site calibration necessary; and
- accuracy over a range of CO concentrations clinically relevant (less than 10 parts per million, or ppm) to detection of hemolysis.

In addition, we believe the CoSense device will be priced at a level that falls below the typical capital equipment purchasing threshold for a hospital or other medical institution in the U.S.

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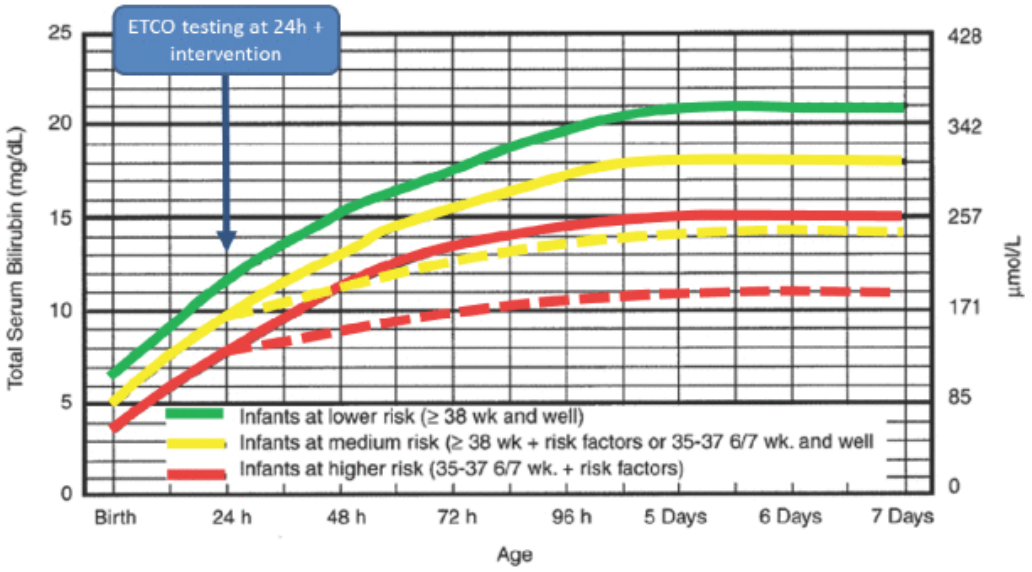
**Figure 3: Guidelines for phototherapy from the AAP based on bilirubin levels (solid lines) at a specified age for infants at low, medium or high risk. The potential trajectory of bilirubin with early intervention based on CoSense testing, as estimated by us, is represented by dashed lines. This suggests that exposure to bilirubin in medium and high risk patients could be substantially reduced by testing with CoSense.**




***Clinical Trials***

Three investigator-sponsored clinical trials have been performed to validate the ability of CoSense to detect the presence of hemolysis. Two of these were performed in neonates. A third trial was performed in children with sickle cell anemia, or SCA, a disease which results in chronic hemolysis.

In a pilot clinical trial at Stanford University, a bench to bedside evaluation of CoSense was undertaken to identify hemolysis in neonates, and to correlate ETCO levels with bilirubin production as defined by levels of carboxyhemoglobin, or COHb, in the blood. When red blood cells are broken down, the pigment heme is released from the red blood cells. In turn, when heme is broken down, CO and biliverdin are produced in equimolar amounts. That is, the same number of moles - a measure of molecule mass - of both CO and biliverdin are produced from the same chemical reaction. Biliverdin is a precursor of bilirubin, and is converted into bilirubin. CO combines with hemoglobin in the blood with high affinity to form carboxyhemoglobin, or COHb. Therefore, the level of COHb provides an accurate measurement of bilirubin production, or hemolysis. CO from COHb is released when the blood circulates through the lungs and as a result, levels of ETCO correlates to levels of COHb, bilirubin production and hemolysis. For accurate measurements of low levels of CO, gas chromatography is the method of choice.

In bench studies, inter-device accuracy and intra-device imprecision were evaluated in three different CoSense devices. In the clinical setting, 73 neonates who all had a gestational age, or GA, more than 30 weeks were tested. ETCO measurements, in triplicate, were compared to COHb levels measured by gas chromatography in the subset of 20 of the 73 neonates who consented to testing for COHb and were suspected of having hemolysis. Gas chromatography is a technique better suited to the laboratory than to high-volume clinical use, particularly in the point-of-care neonatal diagnostic setting. It requires a large, complicated chromatography instrument and highly trained staff.

In the bench studies, overall mean inter-device accuracy was high (98.3±3% (range 93.2–99.4%) and 98.7±2.1% (range 93.3–101.2%) at 2.4 and 5.1 ppm, respectively. Mean intra-device imprecision was low (3.3%

(range 2.8–3.7%) and 2.5% (range 1.9–2.6%) at 2.4 and 5.1 ppm, respectively), indicating that CoSense provides consistent results across multiple devices as well as repeatedly within a device. Figure 4 represents the distribution of 102 ETCO measurements from 73 neonates. We believe that values over the 50th percentile (or 1.5 ppm) represent a risk for hemolysis, and the risk increases with values at the higher percentile levels. Figure 5 shows the relationship between ETCO measurements from CoSense and COHb levels measured via gas chromatography (23 samples from 20 patients). A close correlation between the two is seen ($r^2 = 0.96$), confirming that ETCO values with CoSense accurately measure bilirubin production and therefore hemolysis.

**Figure 4:** ***Distribution of ETCO Values.*** **A total of 102 ETCOc measurements were collected from 73 newborns. We believe that infants with ETCO values above the 50th percentile are at risk for hemolysis, with the risk increasing at higher percentiles.**

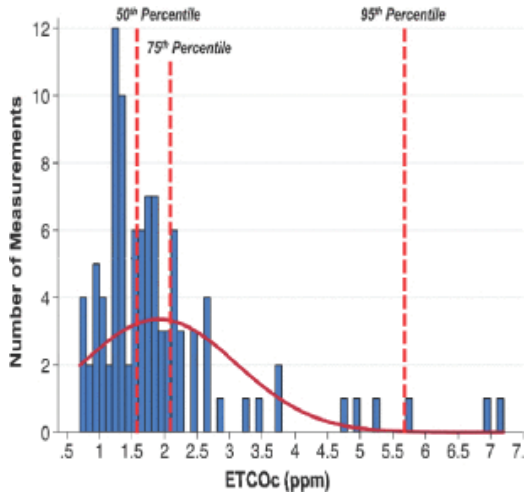
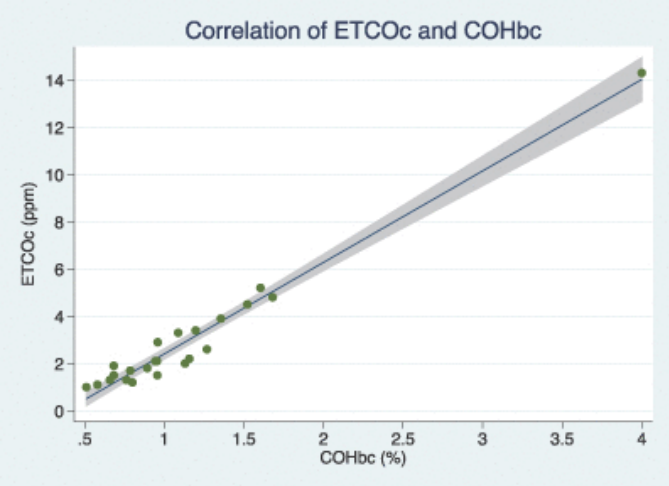



**Figure 5:** ***Correlation of ETCO as measured via CoSense with COHb measured via gas chromatography.*** **The correlation coefficient is 0.97.**



The ability of CoSense to identify hemolysis in neonates with significant hyperbilirubinemia was evaluated at The Children's Hospital of Zhejiang University School of Medicine in Hangzhou, China. Significant hyperbilirubinemia was defined as total serum bilirubin, TSB, levels that require phototherapy according to AAP guidelines. Investigators compared ETCO, as measured with CoSense, with current blood tests for hemolysis, such as hematocrit, or Hct, which measures the number of red blood cells, reticulocyte count, or Retic, which measures new red cell production levels, serum bilirubin test, and the Coombs Test. While these tests are often performed to detect hemolysis in neonates, they are not considered to be reliable in the neonatal setting. The information that is gained from a combination of all these tests is therefore used to inform a determination of the presence or absence of hemolysis. Certain tests may be better than others for a given type of hemolysis, whereas ETCO levels are elevated due to hemolysis regardless of the cause.

Fifty-six neonates with significant hyperbilirubinemia participated in this non-randomized open-label trial.

The groups with positive and negative Coombs test were well-matched for GA and birth weight. Mean results are shown in Figure 6 below. The group with positive Coombs had lower hematocrit and higher reticulocyte counts, supporting the presence of hemolysis. Total serum bilirubin was similar across the two groups, suggesting that bilirubin by itself is not a specific marker for hemolysis. ETCO levels were statistically significantly higher in the positive Coombs group. These data show that ETCO measurement with CoSense can provide the physician with similar information to that currently provided by invasive blood tests regarding the patient's hemolytic status, but with a simple, non-invasive breath test.

**Figure 6: The Children's Hospital of Zhejiang University School of Medicine Clinical Trial Results**

| Patients (N = 56) | Positive Coombs | Negative Coombs | P value |
|---|---|---|---|
| Hematocrit (%) | 47.1 ± 8.4 | 57.3± 9.8 | 0.348 |
| Reticulocyte Count (%) | 5.6 ± 3.9 | 2.8 ± 1.3 | < 0.01 |
| Total Serum Bilirubin (umol/L) | 320.3 ± 88.8 | 329.4 ± 83.8 | 0.969 |
| ETCOc (ppm) via CoSense | 2.8 ± 2.1 | 1.7 ± 1.0 | 0.028 |

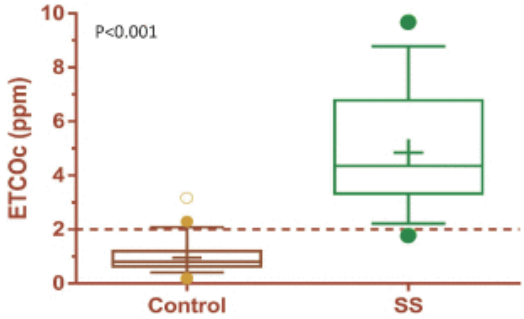
In a third clinical trial, ETCO concentration was measured in children with SCA, who are known to have chronic hemolysis, using CoSense at Children's Hospital & Research Center in Oakland, California. Children between five and fourteen years old with SCA, who were not on regular transfusions, were eligible to participate in the trial. Children with exposure to second-hand smoke, acute respiratory infection or symptomatic asthma were excluded. Healthy children between five and fourteen years old served as matched controls. Up to three measurements were taken for each subject using CoSense, and the highest ETCO value was used. One control subject had a high ETCO value and was excluded from the analysis since he was found to have asthma and was on anti-epileptic medication.

The mean ages of 16 children with SCA and 17 healthy children controls were 9.7 years and 9.9 years, respectively. The mean ± standard deviation ETCO for SCA was 4.85 ± 2.24 ppm versus 0.96 ± 0.54 ppm for controls ($p<0.001$).

The mean ETCO in the children with SCA was five-fold higher than the control group, with little overlap seen between the groups. ETCO levels were measured during tidal breathing in the tested children using CoSense. The data shows that CoSense may be useful to monitor the rate of hemolysis in children with SCA.

**Figure 7: Significantly higher ETCO in sickle cell patients compared with normals**

| Highest ETCOc Value for Each Subject | | |
|---|---|---|
| **Patients (N=33)** | **Sickle Cell (N=16)** | **Control (N=17)** |
| **Mean** | **4.85** | **0.96** |
| **Standard Deviation** | **2.24** | **0.54** |
| **p < 0.001** | | |




***Market Opportunity***

Independent market research that we conducted has identified a large market opportunity for the CoSense device in the well-baby nursery and labor and delivery units in term neonates (less than 37 weeks), as well as in the neonatal intensive care unit, or NICU, in preterm births (less than 34 weeks) and late preterm births (between 34 and 37 weeks).

In the U.S. and E.U., there are approximately 8.1 million term births and 1.1 million preterm and late preterm births each year. Approximately 60% of term births, or approximately 4.9 million births, and 80% of preterm and late preterm births, or approximately 900,000 births, are jaundiced and are at greatest risk for adverse outcomes. We believe that these neonates are at risk for hemolysis and are candidates to receive one or more CoSense tests during their hospital stay if our product was available for commercial sale.

Today, the presence of jaundice triggers either a transcutaneous or serum bilirubin test. With the availability of CoSense, physicians may complement bilirubin testing with hemolysis testing in order to perform a more complete clinical assessment. Neonates who are jaundiced but not hemolyzing may receive conservative management or phototherapy. Neonates with jaundice found to be hemolyzing will likely receive early phototherapy and also additional testing such as the Coombs test, Hct or Retic to diagnose the underlying cause of hemolysis. We believe that CoSense will allow physicians to reduce the number of neonates that receive these more invasive and more costly tests for hemolysis.

***Sales and Marketing***

We intend to market CoSense for evaluating neonates for the presence, or the rate, of hemolysis. In the U.S., we will sell via a direct sales force, with potential augmentation of our reach via distributors. In the E.U., we expect to partner with distributors in each country, with oversight and marketing assistance from our personnel that we intend to base in the E.U.

Our U.S. direct sales efforts will initially focus on large hospital systems with high volumes of births. Approximately 100 centers in the U.S. are responsible for over 5,000 births per center per annum, and collectively make up approximately 16% of all births in the U.S., according to public information from Bilian's HealthDATA. A second tier of approximately 300 hospitals, those with approximately 2,500 or more births per year, accounts for an additional one million births, approximately 25% of the U.S. total. With a field sales force of 12-16 representatives, deployed primarily in large metropolitan areas, including the New York Tri-State area, Los Angeles, Chicago and Atlanta, we believe we will have the sales force capacity to develop appropriate relationships with various stakeholders at these centers.

We expect the majority of our revenues to be sales of consumables. Because customers will order these repeatedly once they have adopted CoSense as part of their standard procedures, we expect that our sales force can drive higher revenue per salesperson than might otherwise be the case.

Intermountain Healthcare System, or IHS, a multi-institution hospital system in Utah has signed a letter of intent with us to purchase CoSense units at the outset of our planned commercial launch. IHS has used CoSense as part of various ongoing and completed clinical trials. In conjunction with Dr. Robert Christensen, IHS' Director of Neonatal Research at Intermountain Healthcare, and Director of the Intermountain Healthcare Clinical Neonatology Program for the Northern region, we have conducted a usage analysis to forecast the potential volume of CoSense use within the IHS.

IHS consists of 21 hospitals, of which 18 have labor and delivery services. IHS has approximately 30,000 total births annually, of which 20,000 are in the largest eight hospitals. Per IHS' letter of intent with us, once CoSense is available commercially, pending appropriate approvals within the hospital system, IHS intends to purchase 16 CoSense units, with two to be deployed in each of these eight largest hospitals initially. We believe roll-out of CoSense to the smaller hospitals within IHS could then happen over time.

The IHS has indicated they will use CoSense to inform treatment decisions for infants whose serum bilirubin levels are at or above the 75th percentile, including approximately 30% of the births at these centers. The premise of this case study provides that half of those tested with CoSense will require a second CoSense test (average of 1.5 tests per infant). We therefore estimate that 7,500 tests would be performed annually at the initial-adopter hospitals within this system, with usage rising to 11,250 tests annually as CoSense devices are deployed across the entire IHS system.

In addition to the aforementioned, key elements of our sales and marketing strategy include:

- Subsequent efforts will focus on growing the volume of tests performed and associated consumables used. We plan to focus specifically on sales to the NICU, well-baby nursery, and labor/delivery units within each hospital. Because CoSense is a point-of-care device, each of these units of the hospital is a separate opportunity for CoSense placement.

- Establish and engage a network of distributors in the E.U. We may establish continuing operations at a location in the E.U. to ensure close coordination and effective execution of the CoSense sales and marketing plan in the E.U.

- Price the CoSense device at a level that allows hospitals to purchase it without protracted review via a "capital purchase committee" or analogous body. We believe that the cost of goods of CoSense devices allows us flexibility in setting this price, and we also believe we can offer customer hospitals attractive financing options to smooth out costs associated with the device purchase.

- Price the CoSense consumable cannula at a price that is competitive with the current costs of performing the Coombs Test and other associated invasive assays. We believe that this cost offset, complemented by potential improvements in readmission rates and clinical outcomes, will provide hospital decision-makers with a compelling economic case for adoption of CoSense.

- Build awareness of the AAP treatment guidelines, and of the benefits of CoSense, via medical education efforts to key clinical audiences, including neonatologists, pediatricians, obstetricians, and pediatric nurses.

- Collaborate with key specialty societies, including the Pediatric Academic Societies, American Academy of Family Physicians, or AAFP, and patient advocacy groups such as Parents of Infants and Children with Kernicterus, to ensure ongoing support for ETCO testing in clinical guidelines and to identify opportunities for expanding awareness of ETCO among their respective constituencies.

- Support clinical trials and publications that expand the base of evidence supporting broad adoption and use of CoSense. We expect these efforts will build support for the clinical benefits to patients as well as economic benefits to various stakeholders in the healthcare system.

We expect that we will expand our direct sales efforts to encompass lower-volume birthing centers in the U.S., once a sufficient proportion of the larger hospitals have begun to use CoSense. We may also selectively initiate direct sales to certain countries in the E.U. Furthermore, we see potential to use CoSense to make more rapid assessments of jaundiced babies in the outpatient pediatric setting, where new parents are frequently directed for followup care after hospital discharge. We will continue to evaluate expansion opportunities and pursue those where the potential to accelerate our business is deemed sufficient for the investment we put at risk.

***Pricing and Reimbursement***

We expect to sell the CoSense device at a price below the typical capital expenditure approval threshold levels of most hospitals and other medical institutions in the U.S. The decision to buy, therefore, would likely be driven at the departmental rather than at the institutional level. The primary decision makers are expected be the neonatologists and nurse managers in the pediatrics and neonatology departments. Our initial efforts will be to expand the install base of devices, and will be followed by efforts to increase use of the disposable cannula. The business model anticipates a significant proportion of the revenues coming from the disposable sales, even more so in later years as the number of total CoSense devices in use in the field increases.

Since the use of CoSense is almost entirely in the inpatient setting around the time of birth, reimbursement would be in the form of a Diagnosis-Related Group, or DRG. Also known as a bundled payment, the DRG is a specific flat-fee payment amount for all services performed by a medical institution pursuant to a single diagnosis. We can, therefore, be reimbursed for the cost of a test directly from an institution without the need to approach payors such as insurance companies, or to obtain a separate reimbursement cost code. Hospital decisions to adopt new technologies for inpatient care are usually driven by improved outcomes and reduced costs of patient care. We expect that the use of CoSense will both improve outcomes related to hyperbilirubinemia and reduce the need for certain diagnostic tests in a subset of neonates with jaundice, which, as a result, will reduce overall testing costs. We also believe that positive identification of infants with hemolysis will lead to a reduced rate of readmissions for jaundice, and this array of benefits may support adoption of CoSense by clinicians and their institutions. We also plan to undertake a comprehensive effort to partner with key physician specialty societies, physician opinion leaders and patient advocacy groups to educate and inform payer stakeholders. The AAP guidelines recommend ETCO detection to confirm the presence of hemolysis in neonates requiring phototherapy, neonates unresponsive to phototherapy or readmitted for phototherapy, and neonates with bilirubin levels approaching transfusion levels. In general, payer policies related to the care of neonates with jaundice reflect third-party treatment guidelines, and in this case the AAP guidelines favor use of ETCO testing, which CoSense is able to perform.

***Clinical Advisors***

We have a number of clinical advisors to our company, made up of key opinion leaders in the field of neonatology. The principal clinical advisors that we use are the following individuals:

*Vinod (Vinny) K. Bhutani, M.D.* Dr. Bhutani, a pro bono advisor, is a Professor of Pediatrics at the Stanford University School of Medicine's Division of Neonatal and Developmental Medicine and is also a Faculty member in the Stanford-India Biodesign Program. He serves as an elected member of the American Academy of Pediatrics Executive Committee, Section on Perinatal Pediatrics, and is an appointed member to the AAP Committee of Fetus and Newborn and the Subcommittee on Hyperbilirubinemia. An elected member of the American Pediatrics Society, Dr. Bhutani Co-Chairs the Audrey K. Brown Kernicterus Symposium and coordinates the Bilirubin Club at the Pediatric Academic Society annual meetings. He serves on the Board of California Association of Neonatologists and chairs the California Committee of Fetus and Newborn. Through the Program for Global Paediatric Research, Dr. Bhutani launched the Global Prevention of Kernicterus

Network, serving as its Medical Director. His global heath-societal research and community service interests include prevention of jaundice-related newborn brain damage and ventilation-induced respiratory injury through systems-approach, biotechnologies, biodesign of affordable medical devices, and chemoprevention, as well as development, of affordable, sustainable, high quality strategies and policies to reduce infant mortality and morbidities.

*David K. Stevenson, M.D.* Dr. Stevenson, a pro bono advisor, is the Harold K. Faber Professor of Pediatrics, Director of the Charles B. and Ann L. Johnson Center for Pregnancy and Newborn Services, and the Former Vice Dean and Senior Associate Dean for Academic Affairs at Stanford University School of Medicine. He serves as Director of an NIH-Funded Training Program in Developmental and Neonatal Biology, Co-Director of Stanford's CTSA (Spectrum) and Leader of Child Health (Spectrum Child Health), and Principal Investigator of the March of Dimes Center for Prematurity Research, a transdisciplinary research effort with the objective of reducing the preterm birth rate. Dr. Stevenson was the recipient of the Virginia Apgar Award, the highest award in Perinatal Pediatrics in 2006. He served as President of the American Pediatric Society for 2005-06. More recently, he received the Maureen Andrew Mentor Award from the Society of Pediatric Research, and the Jonas Salk Award for Leadership in Prematurity Prevention from the March of Dimes Foundation. Dr Stevenson was elected to the Institute of Medicine of the National Academy of Sciences.

*Robert D. Christensen, M.D.* Dr. Christensen, a pro bono advisor, is the Director of Neonatal Research at Intermountain Healthcare and Director of the Intermountain Healthcare Clinical Neonatology Program for the northern region where the majority of his research work is focused on observational and interventional clinical studies of neonatal clinical hematology and transfusion medicine. He has authored over 300 publications. Dr. Christensen held positions including Professor of Pediatrics at the University of Utah School of Medicine, the University of Florida College of Medicine, and the University of South Florida College of Medicine, and was Physician-in-Chief at All Children's Hospital in St. Petersburg, Florida. He has been a member of the NIH National Heart, Lung and Blood Institute, NIH National Institute of Child Health and Human Development, and National Foundation March of Dimes, was on the executive committee of Thrasher Research Fund, and was sub-committee chair of the American Academy of Pediatrics.

These clinical advisors are not subject to contractual relationships with us, but generally make themselves available to us for various clinical, scientific and other needs on an ad-hoc basis.

***Competition for CoSense***

Currently no device is commercially available with the sensitivity and accuracy necessary to detect ETCO levels that are meaningful for monitoring the rate of hemolysis in neonates, and we do not know of any such device that is under development by any party. From 2001 to 2004, Natus Medical marketed the Co-Stat device for detection of ETCO in neonates. The Natus product was withdrawn from the market due to poor sales. We believe Natus' Co-Stat did not achieve commercial success due to several disadvantages that we have overcome with our product, including a lack of consistent accuracy, limited ability to compensate for environmental factors such as humidity and heat, high price, and poor ease of use, including a requirement for frequent calibration.

In addition, devices are commercially available to measure CO poisoning from external sources, but these are less-sensitive devices that are not appropriate for detecting ETCO in the low concentrations (less than 10 ppm), small volumes and high breath rates that are clinically relevant in neonates. CoSense has the ability to overcome these problems using our Sensalyze technology. Several companies and academic groups have capabilities sufficient to develop such devices, and these parties may have significant resources to devote to research, development, and commercialization of devices that may compete with CoSense as well as technologies that compete with our Sensalyze Technology Platform generally. Competition within our target market will depend on several factors, including:

- quality and strength of clinical and analytical validation data;

- confidence of health care providers in diagnostic results;
- reimbursement and payment factors;
- inclusion in practice guidelines;
- cost-effectiveness;
- ease of use; and
- the strength of our intellectual property

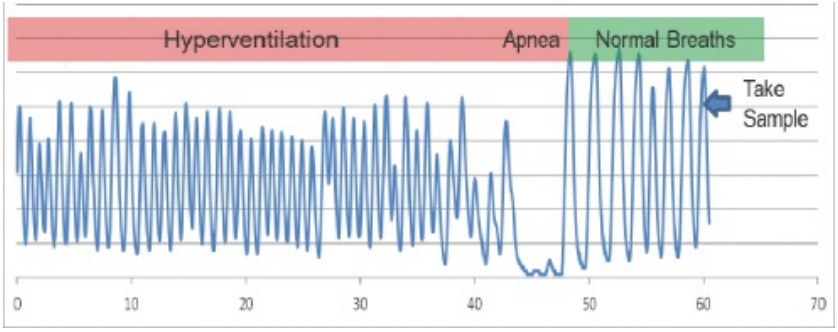
Today, physicians primarily diagnose hemolysis via Coombs and other blood tests, and these will represent the primary competition to CoSense initially. These tests do not capture the rate of bilirubin production or the presence/absence of hemolysis, leaving the physician uncertain as to the patient's level of risk. We believe that we can demonstrate compelling advantages over such tests, including faster results, the ability to avoid painful blood draws and greater diagnostic clarity and accuracy. We also believe we will be able to demonstrate economic and workflow advantages over the existing diagnostic practice.

**Our Sensalyze Technology Platform**

A variety of medical diagnostic testing is performed via measurement of gas concentrations, either from blood samples or from exhaled breath. Examples include capnometry and pulse oximetry, both routinely used in patient monitoring. Devices used for detecting the presence of various analytes in exhaled breath typically rely on the patient performing a specified breath maneuver. Examples of such maneuvers include breath holding, forced expiration, or breathing at a specified rate. The use of these devices is limited to those who can perform such maneuvers, such as adults and older children.

The limitations of existing breath-based technologies are particularly problematic in neonates. Neonates typically have very rapid and irregular breathing patterns as shown in Figure 8 below. They also inhale and exhale relatively small volumes, which limits the accuracy of devices that require the larger-volume sample sizes exhaled by older patients. In addition, they are not able to perform specified breath maneuvers. Our Sensalyze Technology Platform allows the measurement of analytes in all patients, from neonates to adults, regardless of their ability to actively perform a breath maneuver.

**Figure 8: Breath Patterns in Newborns**



Our Sensalyze Technology Platform combines hardware, sensors, and software to provide the following novel capabilities:

- Identification of full breaths that follow a normal pattern, also known as "physiologic" breaths. Our platform can identify physiologic breaths even if the patient is breathing very rapidly, a capability that is particularly relevant in infants.

- Capture of individual exhaled breaths, and segmentation of the breath into different components such as "end-tidal", "upper airway", and "lower airway". This may allow the localization of the source of a given analyte to a specific anatomic area.

- Ability to move a specific micro-liter component of breath to a sensor module.

When combined, these capabilities provide a novel platform for non-invasive detection of various analytes.

***Sensalyze Technology Platform - Research and Development of Additional Diagnostic Products***

While the commercialization of CoSense will be our primary focus, we also intend to utilize our research and development expertise to develop other diagnostic devices that leverage the capabilities of our Sensalyze Technology Platform. We expect to introduce additional products of our own and are continuing to develop additional diagnostic tests for analytes that might be found in the exhaled breath. These include the following diagnostic opportunities:

- nitric oxide (NO) for assessment and management of asthma in children younger than seven years of age;

- end-tidal $CO_2$ for neonates; and

- hydrogen breath testing for infants with colic.

We may also license elements of our Sensalyze Technology Platform to other companies that have complementary development or commercial capabilities.

***Nitric Oxide for Assessment and Management of Asthma in Children Younger than Seven Years of Age***

Asthma is a highly prevalent pediatric disease, occurring in 9% of children in the U.S. There are an estimated five million children under the age of seven with asthma in the U.S. and the E.U. Diagnosis and management of asthma in children under seven years of age is clinically challenging. The use of NO to assess and manage asthma in older children and adults at the point-of-care has been well established in the clinical literature and in clinical practice, and is recommended by the American Thoracic Society. However, the use of current diagnostic technologies, such as the NIOX MINO marketed by Aerocrine AB, requires the patient to follow specific instructions, including controlled exhalation in a specific matter, in order to collect a valid breath sample. These instructions are typically too complex for children under the age of seven. As a result, there are no reliable point-of-care tests for the assessment and management of asthma in infants and children under the age of seven. The lack of a diagnostic and management tool may contribute to delayed diagnosis or inappropriate treatment of these younger patients.

We believe we can develop an additional diagnostic using our Sensalyze Technology Platform for assessing and managing children with asthma under the age of seven with NO. Our Sensalyze Technology Platform is uniquely suited to address the need of pediatricians and pediatric pulmonologists. Our proprietary sampling technology can capture a breath sample during a child's natural breathing cycle and as a result, no controlled exhalation is required, which enables use in younger children.

***End-Tidal Carbon Dioxide for Neonates***

End-tidal $CO_2$, or $ETCO_2$ ,monitoring is often necessary for neonates in the NICU, in order to ensure adequate ventilation. The measurement of arterial $CO_2$ tension, $PaCO_2$, is the current standard of care for evaluating the adequacy of oxygenation. However, due to the risks of arterial blood sampling, including the requirement for central or peripheral arterial catheters, increased risk of infection, and blood loss requiring transfusion, there is an unmet need for alternative methods of monitoring $CO_2$ in the blood. Monitoring neonates using $ETCO_2$ may be beneficial because it is non-invasive, portable, and provides a rapid assessment of the trend in $CO_2$. $ETCO_2$ is used in estimating $PaCO_2$ in adult and pediatric intensive care settings; however, the devices available for neonatal use lack accuracy.

We believe our Sensalyze Technology Platform can be used to facilitate more precise $ETCO_2$ monitoring in neonates. Of the nine million babies born in the U.S. and the E.U. each year, 12% may be admitted to the NICU. We expect that neonatologists and NICU nurses would perform $ETCO_2$ testing on neonates in the NICU frequently in order to track $CO_2$ levels.

***Hydrogen Breath Testing for Infants with Colic***

Each year, up to 2.5 million infants in the U.S. and the E.U. are diagnosed with colic, a non-specific condition that is often blamed on gastrointestinal intestinal, or GI, distress. Parents of infants with colic must often support extensive dietary modifications, including trials of different types of baby formula, in order to reduce the colic. Despite these efforts, the source of the colic often remains unknown and may not even be GI related. Identifying malabsorption as a cause of the colic, or ruling out malabsorption, may help clinicians better diagnose and treat these patients. Although hydrogen breath testing is frequently used to identify patients with dietary intolerances or bacterial overgrowth in the GI tract, it is not routinely used to identify malabsorption in infants with colic. Similar to NO breath testing, most devices currently available for hydrogen breath testing require a forced exhalation and are not appropriate for an infant patient population.

We believe our Sensalyze Technology Platform can be leveraged for hydrogen breath testing in infants. This would most likely be performed in the outpatient clinic setting, where pediatricians and pediatric gastroenterologists are the key institutional decision makers. Our proprietary sampling technology can capture a breath sample during an infant's natural breathing cycle, again with no forced exhalation required, a significant innovation which enables its use in with infants.

**Serenz**

***Allergic Rhinitis***

Allergic rhinitis, which is commonly and colloquially referred to as "allergies," is characterized by symptoms are often episodic and include nasal congestion, itching, sneezing and runny nose. It is one of the most common ailments in the western world and is growing rapidly, making AR one of the largest potential pharmaceutical markets. There are approximately 39 million sufferers in the U.S. and 48 million in France, Germany, Italy, Spain and the United Kingdom, and an additional 36 million in Japan, according to research firm GlobalData. Prevalence of AR is growing rapidly in the developed world. The most common AR drug therapies include antihistamines, and intranasal steroids. Leukotriene inhibitors and other drugs are also currently prescribed to AR patients. Several of these drugs have generated sales in excess of $1 billion per year as branded products. However, these products have significant limitations and AR sufferers remain dissatisfied with the available treatments. Thus, there is a need for a more effective treatment with a faster onset of action and improved safety profile.

AR is a cause of significant morbidity in spite of available treatments. According to the Allergies In America Survey conducted in 2006, most AR sufferers reported themselves to be less than "very satisfied" with the products they were taking for allergy relief. Fifty-two percent reported they had suffered from impaired work

performance or missed work due to their AR symptoms even though 69% had used medication at some point in the prior four weeks. Current treatments provide incomplete relief from symptoms, and have significant side effects such as drowsiness.

An independent market research survey, which we conducted in 2012, polled 140 AR sufferers in the U.S. and the E.U. Approximately 27% of these indicated that they would be "highly likely" to try Serenz as a treatment for their AR at our intended price point. Those who categorized themselves as "highly likely" to try Serenz at our proposed price points indicated that, on average, they expected to use it between four and seven months out of the year, and to use one to two doses per day during these months. The U.S. patients surveyed reported that they currently spend an average of $64 to $112 each month, out of pocket (excluding insurance or government payor support), for AR medication.

***Serenz Technology***

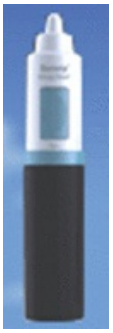
Our Serenz technology is based upon the observation that non-inhaled $CO_2$ delivered at a low-flow rate into the nasal cavity, alleviates the symptoms of AR. Serenz is a convenient, hand-held device that delivers low-flow $CO_2$ to the nasal mucosa. It contains a pressurized canister of gas, with approximately enough gas to dose as-needed for one to two weeks. The device is disposable and engineered for ease of use. Our proprietary technology ensures very precise control of aspects such as flow rate and volume, which we believe are both critical to achieve the desired clinical performance.

In our clinical trials to date, Serenz has shown a large effect size, an onset of effect within 30 minutes and a mild side effect profile. We believe that such a therapeutic index positions Serenz well to be a potential first-line treatment for any AR sufferer. Serenz can be taken as a stand-alone treatment or as an adjunct to other medications, and can be used on an as-needed basis.

One Serenz device, as shown in Figure 9, contains enough gas for approximately 22 doses, which we believe will treat AR for an average of one to two weeks, depending on frequency of use. We have not determined pricing for Serenz, but expect to price it at a premium to existing over-the-counter therapies for AR due to the benefits we believe the product provides to patients over such therapies.

Based on clinical trials to date, we believe Serenz exhibits the ideal characteristics of an AR therapeutic, including:

**Figure 9: Serenz Device**



***Serenz***
***Dimensions: 4-7/8 x 1-3/8 inches***

- Rapid relief
- Relief from all nasal symptoms
- Mild side effect profile
- No long-lasting side effects
- Locally acting
- Non-sedating
- Non-steroidal
- Usable on an as-needed basis

***The "As-Needed Only" Treatment Paradigm***

The traditional therapeutics used for the symptomatic treatment of AR have left a significant unmet need in this population. These therapeutics, mostly antihistamines and nasal steroids, are typically used on a scheduled basis, for example daily or twice a day. This is counter-intuitive given that the symptoms of AR are typically episodic, such as when a subject is exposed to a pollen when they step outdoors in allergy season. The reason for chronic treatment of this episodic disorder is that the available treatments for AR take too long to act. Even when used "as-needed", these products are unlikely to have a meaningful effect on efficacy in a very short time frame.

Antihistamines typically take one or more hours to have an effect. Their efficacy may decrease further over time for patients and as exposure to allergens continues, whether seasonal or perennial. In addition, antihistamines in general do not have any effect on congestion.

Nasal steroids can take days before peak effect. While they are more efficacious than antihistamines, they must be taken regularly during the allergy season or indefinitely for perennial allergies. In addition, they have bothersome side effects and are associated with the perception issues that relate to steroid use in general.

We believe that a treatment that can act rapidly such that it can be taken only when needed is ideal for the AR patient population. In addition, it should not have any lasting or significant side effects. Serenz has the characteristics of such a treatment.

***Clinical Trials of Serenz in Allergic Rhinitis***

We have conducted six randomized, controlled clinical trials involving 975 patients, testing the safety and efficacy of nasal $CO_2$ in treating the symptoms of AR. Four of these clinical trials were in patients with seasonal AR, or SAR, and two of these clinical trials was in patients with perennial AR, or PAR. In addition, GSK conducted a trial in 147 patients to assess the consumer appeal of Serenz for patients with nasal congestion. The trials using the as-needed approach showed statistically significant and clinically meaningful effects in both SAR and PAR. The effect is seen on each of the individual nasal and non-nasal symptoms, with as little as a 10 second per nostril application of Serenz. Given the rapid onset and generally mild side effect profile, we believe Serenz is ideally suited for marketing to patients for use on an as-needed basis. Effectiveness of treatments for AR is typically assessed in trials by measuring change in TNSS from before to after treatment. Each nasal symptom (congestion, runny nose, itchy nose and sneezing) is assigned a value of 0 to 5 (such as in SAR-2005) or 0 to 3 (such as in C216). Lower values denote less severe symptoms. The TNSS is then calculated by adding values for each of the four symptoms. Therefore, the worst TNSS corresponding to the worst symptoms could be 12 or 20.

**Figure 10: Serenz Allergic Rhinitis Clinical Trial Summary**

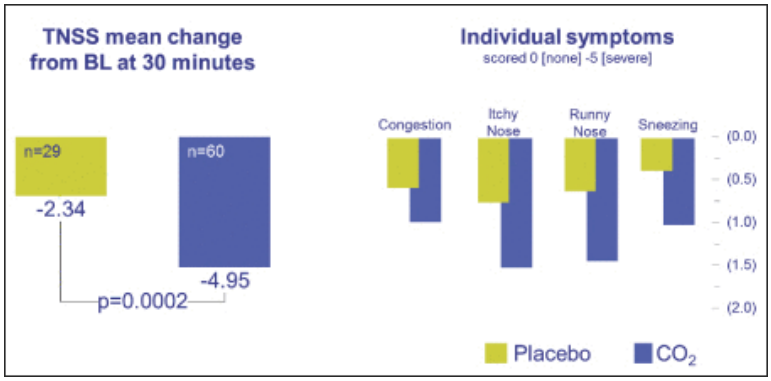
| Trial | N= | Dosing |
|---|---|---|
| SAR-2005 | 89 | As Needed Single dose: 60s @ 10 ml/s |
| C211<br>(PAR-2006) | 348 | As Needed<br>Single dose: 10s or 30s<br>@ 5 or 10 ml/s |
| C213 | 20 | Dose A: 5s / nostril @ 0.5 SLPM<br>Dose B: 10s / nostril @ 0.5 SLPM<br>Dose C: 30s / nostril @ 0.5 SLPM<br>Dose D: 30s / nostril @ 0 SLPM, no gas |
| C215 | 453 | 14 day Tx BID<br>10s @ 0.5 SLPM |
| C216 | 32 | As-Needed 14 day Tx PRN<br>10s @ 0.5 SLPM |
| C218 | 33 | 14 day Tx QID<br>10s @ 0.5 SLPM |
| RH01910 | 147 | 7 day Tx:<br>d1 single-dose<br>+ d2-7 as-needed up to QID |

*Clinical Trials of Serenz Using As-Needed Dosing*

The as-needed use of Serenz is supported by single as well as multiple dose studies.

The first single dose study was conducted by us in 2005 (SAR-2005). It was a randomized, placebo-controlled clinical trial in patients with SAR. Symptomatic patients were treated with a single one-time application of active nasal $CO_2$ or placebo dose for 60 seconds per nostril. Symptoms were measured just before and at several time points after the treatment. Statistically significant improvements in symptoms were noted as early as 10 minutes and lasting for as long as 24 hours following treatment. Figure 11 shows the mean change from baseline in TNSS as well as individual nasal symptoms at 30 minutes, which was the pre-specified primary endpoint (p=0.0002).

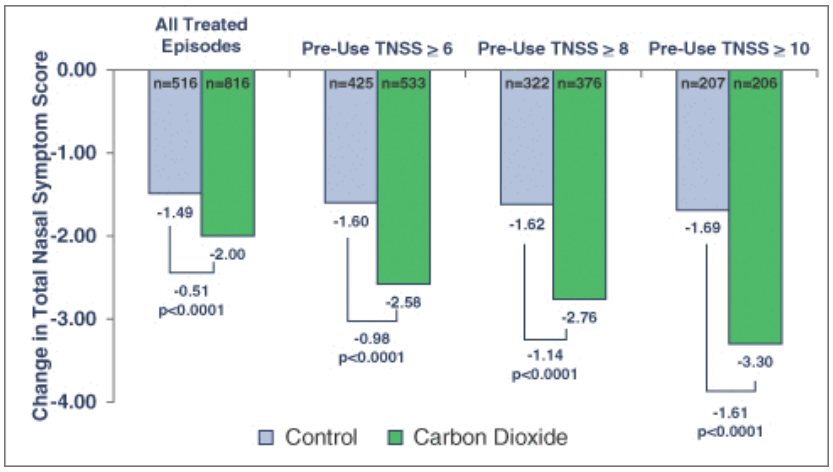
**Figure 11: SAR 2005 Change in TNSS and Individual Symptoms from Baseline at 30 minutes**




Our second study in AR was a randomized, placebo-controlled clinical trial in patients with PAR called C211 (PAR-2006), conducted in 2006. Symptomatic patients were treated with a single application of active nasal $CO_2$ or placebo dose. Patients were assigned to one of six treatment groups in order to determine the optimal dose for future studies based on duration and flow rate. Symptoms were measured just before and at several time points after the treatment. Statistically significant improvements in symptoms ($p<0.05$) were noted at 30 minutes in the $CO_2$ at 10 mL per second for 10 seconds per nostril cohort. This improvement was sustained for between four to six hours of relief of AR symptoms in this cohort, supporting the efficacy of nasal $CO_2$ in symptomatic patients with PAR and confirming the dose of 10 seconds per nostril as appropriate for future clinical trials.

In 2009, we completed C216, our first multi-application, randomized, placebo-controlled trial in which the nasal $CO_2$ device was used as needed in patients with SAR. Patients applied active or placebo 10 seconds per nostril, only as needed, up to a maximum of six times per day for 14 days. Symptoms were measured just before, and again at 30 minutes after, each treatment during the 14-day treatment period. Statistically significant improvements ($p<0.0001$) in symptoms were noted at 30 minutes after treatment during the 14-day treatment period (Figure 12). The magnitude of the treatment effect became larger (from -0.51 to -1.61) as the severity of baseline symptoms increased, which was denoted by higher pre-use TNSS (greater than or equal to 10). These results show that the nasal $CO_2$ device is effective for the as-needed treatment of SAR symptoms. The treatment effectiveness was rapid (within 30 minutes), the effect on symptoms was clinically meaningful, and highly statistically significant ($p<0.0001$).

**Figure 12: C216 Change from Pre-Use TNSS at 30 Minutes**
**(individual symptoms scored 0 (none) to 3 (severe), maximum worst TNSS 12)**




Study RH01910 was a multi-center, open-label, two-part study conducted by GSK, and completed in 2014, with the primary objective of estimating the consumer appeal of Serenz in subjects with nasal congestion. 147 subjects were enrolled into Part 1 of the study and administered a single dose of nasal $CO_2$ in the clinic. At the end of Part 1, subjects were given the option to continue in the study in which they could take a Serenz device home for an additional six days of use. 143 subjects (100% of subjects who completed Part 1) chose to continue into Part 2 of the study, took a Serenz device home to treat their nasal congestion as needed but no more than four times per day.

The primary analysis in this study was performed on the Per Protocol (PP) Population (N=133). The subjects, n=10, not included in the PP population were due to incomplete diaries, use for more days than specified and faulty devices. After initial product use in clinic, 90% of subjects thought that Serenz was as good or better than they expected and 59% would probably or definitely buy the product. After in-home use for six additional days, the proportion that would probably or definitely buy it remained unchanged. 46% would buy Serenz every two weeks or more frequently and 32% would like to buy the product more than once a week. Twelve percent (12%) or less disagreed with the statement that the product helped relieve congestion through all seven days of treatment. 75% of subjects stated that the Serenz worked as well or better than their usual product for treating congestion, with over 30% stating that it was much better than their usual product. Serenz was well-tolerated with adverse events consistent with previous studies and no serious adverse events.

These data show that Serenz has an attractive profile for the treatment of congestion sufferers.

***Clinical Trials of Serenz Using Other Dosing Methods***

One trial in PAR patients was designed to quantify an effect on nasal congestion with an acoustic rhinometer but the data was not evaluable due to malfunctioning of the rhinometer. Other clinical trials that have been conducted with nasal $CO_2$ for AR have evaluated the more traditional paradigm of scheduled dosing. Efficacy measurements in these clinical trials, based on a guidance document published by the FDA, are recorded in the morning and evening, regardless of the time of the treatment or pre-treatment symptoms. These measurements reflect the overall symptomatic relief during the day and do not measure the specific effect of a treatment on an episode of symptoms. Two of these clinical trials evaluated scheduled dosing — one was twice a day and the other four times a day in patients with SAR.

In 2008, we completed our first multi-application, randomized, placebo-controlled clinical trial in patients with SAR, called C215. Approximately 450 patients were randomized in the trial and treated with active or placebo 10 seconds per nostril two times a day for 14 days. There were no statistically significant improvements in TNSS, during the 14-day treatment period with scheduled dosing ($p>0.05$).

In 2009, we completed a multi-application, randomized, placebo-controlled clinical trial called C218 in which the nasal $CO_2$ device was used four times a day in patients with SAR for 14 days, regardless of symptoms at the time of administration. There were no statistically significant improvements in TNSS during the 14-day treatment period ($p>0.05$).

Measurement of TNSS in this scheduled dosing paradigm, or reflective and instantaneous TNSS, show the efficacy to be predictably lacking since these measurements reflect the overall symptomatic relief during the day, and do not measure the specific effect of a treatment on an episode of symptoms.

***Safety of Serenz***

There were no application-related or device-related serious adverse events in any of the clinical trials conducted. Adverse events were generally mild and application-related, and resolved immediately upon cessation of application. The most common adverse events were transient nasal sensation and tearing of the eyes, or lacrimation, that lasted for the duration of the application only.

The nasal sensation commonly encountered during these clinical trials was described by patients differently, and ranges from tingling to burning to pain. We also observed that these sensations were generally not severe enough for patients to discontinue use of nasal $CO_2$, and for more than 1,000 patients treated in all of the AR clinical trials, only six patients discontinued use of nasal $CO_2$ due to an adverse event. We believe that these clinical trials provide evidence that gentle cleansing of the nasal mucosa with Serenz is safe, acts locally and provides rapid relief of allergy symptoms.

***Serenz Regulatory Status***

A CE Mark was granted to us for marketing of Serenz in the E.U. in December 2011. Following out-licensing of Serenz to GSK in 2013, we withdrew our CE mark, since CE marks are site-specific and not transferable. In June 2014, the agreement terminated and the licensed rights to Serenz was returned to us. As a result, we intend to re-file the documentation to reinstate our CE Mark.

The approval route for Serenz in the U.S. may be through a device approval or a drug-device combination approval. In the case of a drug-device combination, a new drug application, or NDA, filing with the FDA will be required. If it is a device approval pathway, it may be either via the PMA process, a *de novo* 510(k) pathway, or traditional 510(k). Additional randomized, controlled clinical trials may be necessary to obtain approval.

We expect to clarify the pathway for approval in dialogue with the FDA by the first quarter of 2015. If pivotal clinical trials are required by the FDA particularly in the case of an NDA or a PMA filing, we currently believe that each of these trials will be 400 to 600 patients in size, and take approximately a year to complete once started. We may partner the program in advance of such clinical trials, if we can do so on terms that maximize the value of the program, and as a result, we may not conduct these clinical trials but instead rely on collaboration partners.

***Our Partnership for Serenz***

In 2013 we entered into a partnership with GSK, in which GSK was solely responsible for the development and commercialization of Serenz world-wide. In April 2014, GSK notified us that they were

terminating our license agreement with them, following which, pursuant to a 30-business-day prior notice provision contained in the license agreement allowing GSK to terminate upon such notice before commercialization, the license agreement formally terminated and the licensed rights to Serenz were returned to us in June 2014. GSK informed us that this decision to terminate the relationship was made due to GSK's belief that the product would be classified as a drug-device combination by the FDA, which would increase development costs and timelines to the point that their strategic objectives would no longer be met. We believe that their decision to terminate the relationship was unrelated to any clinical data from, or technical aspects of, the program. GSK's decision to terminate our license agreement for Serenz may negatively impact the perception of Serenz held by other potential partners for the program. This may impair our efforts to partner the program on terms that are favorable to us, or at all.

We intend to pursue certain capital-efficient strategies to advance the program until such point as we can again identify a partner with appropriate clinical and commercial capabilities.

***Other Serenz Clinical Trials***

Prior to the nasal $CO_2$ Phase 2 clinical trials in AR, we had conducted a safety and feasibility study involving 54 patients in migraine patients. We have also explored the use of nasal $CO_2$ for treatment of migraine headaches and temporomandibular disorders. A total of 928 patients were enrolled across six separate safety and efficacy trials in these non-AR indications. The product showed signs of efficacy, statistically significant in some, but not all, trials, and rapid onset of effect. For strategic reasons we have focused further development on AR. Importantly, in the non-AR trials, the product showed a mild and well-tolerated safety profile that is similar to that seen in trials of Serenz for AR.

***Manufacturing***

We currently manufacture CoSense instruments at our facility in Redwood City, California. We assemble components from a variety of original equipment manufacturer, or OEM, sources. Our manufacturing facility is registered with the FDA and certified to the ISO 13485 standard, the internationally harmonized regulatory requirement for quality management systems of medical device companies. We may, depending on sales volume and ongoing requirements in specific sales geographies, outsource manufacturing of components, or finished goods, to various OEMs in the future.

We have manufactured the Serenz device in partnership with an OEM supplier based in Shenzhen, China and intend to manufacture future supply with this same OEM supplier.

**Intellectual Property**

***Our Sensalyze Technology Platform Patent Portfolio***

Our patent portfolio surrounding our Sensalyze Technology Platform, including CoSense, consists of one issued U.S. patent, four pending U.S. non-provisional patent applications, and four pending U.S. provisional patent applications. Three of the non-provisional filings have corresponding Patent Cooperation Treaty, or PCT, filings and are still eligible for expansion into other geographies. It is our intent to file these, and future cases, in other major commercial geographies over time. Our issued U.S. patent (no. 8,021,308) expires in August 2027. The pending patent applications, if issued, would likely expire on dates ranging from 2023 through 2034.

The issued patent and patent pending applications include:

- detection and storage of discrete portions of a breath;
- methods of diversion and isolation of gases to enable measurement within a breath pattern;

- specific compositions of valving and pumps to route airflow in a tightly controlled manner;
- collection methods for increasing the precision of measurement of small volumes of gas;
- identifying a "physiologically representative" breath, including both algorithm and physical capture; and
- various methods for arrangement and specification of components to enhance precision and compensate for factors that cause inaccurate measurements.

Our issued U.S. patent was acquired from BDDI and is subject to an asset purchase agreement with BDDI that contains ongoing contingent payment obligations, including the following royalty range on aggregate net sales of CoSense in the U.S.:

- Net sales at or below $10 million 2%
- Net sales at between $10 million and $25 million 3%
- Net sales at between $25 million and $50 million 4%
- Net sales above $50 million 5%

***Serenz Patent Portfolio***

Successful application of therapeutic gases to the nasal mucosa is generally dependent on specific dosing, concentration, and rate of gas outflow. The $CO_2$ gas used in the Serenz product is packaged in small sealed cylinders with relatively high internal pressure; regulating the flow of gas from this high pressure cylinder to the relatively low flow rates required for Serenz presents significant technical challenges. Our Serenz patent portfolio addresses these challenges.

Our Serenz patent portfolio consists of over 30 issued patents and over 40 pending patent applications. In the U.S., twelve issued patents, one allowed non-provisional patent application, and 7 pending non-provisional patent applications cover the Serenz technology. The U.S. patents and patent applications have corresponding issued patents and pending patent applications in developed nations. The expiration dates for the issued patents vary, with the latest being in 2022. Patent term extension due to regulatory review may be requested in the U.S. based upon one or more of the issued U.S. patents under the Drug Price Competition and Patent Term Restoration Act of 1984, also known as the Hatch-Waxman Act.

Our pending applications, when issued, would likely expire between 2020 and 2033.

Our issued patents and pending patent applications include claims directed to:

- gas dispensing devices, including various nosepiece configurations, pressure regulators, and cylinder configurations;
- methods for delivering therapeutic gases to patients;
- the treatment of various medical conditions via delivery of therapeutic gases to the nasal cavity; and
- combined delivery of gases with other therapeutic agents.

**Government Regulation**

***Federal Food, Drug, and Cosmetic Act***

In the U.S., diagnostic assays are regulated by the FDA as medical devices under the Federal Food, Drug, and Cosmetic Act, or FFDCA. We received initial FDA 510(k) clearance for CoSense in the fourth quarter of 2012 for the monitoring of CO from endogenous and exogenous sources in exhaled breath, particularly in smoking cessation programs for the screening of CO poisoning and smoke inhalation. In the first quarter of 2014, CoSense received 510(k) clearance for the monitoring of CO from endogenous sources, including hemolysis, and exogenous sources, including CO poisoning and smoke inhalation, in exhaled breath. Serenz has not yet commenced any process for regulatory approval in the U.S. We also plan to seek FDA clearance or approval for other diagnostic products currently under development. There are two regulatory pathways to receive authorization to market diagnostics: a 510(k) premarket notification and a premarket approval application, or PMA. The FDA makes a risk-based determination as to the pathway for which a particular diagnostic is eligible. CoSense was cleared via the 501(k) premarket notification pathway as a Class II medical device.

The information that must be submitted to the FDA in order to obtain clearance or approval to market a new medical device varies depending on how the medical device is classified by the FDA. Medical devices are classified into one of three classes on the basis of the controls deemed by the FDA to be necessary to reasonably ensure their safety and effectiveness. Class I devices are subject to general controls, including labeling, registration and listing and adherence to FDA's quality system regulation, which are device-specific good manufacturing practices. Class II devices are subject to general controls and special controls, including performance standards and postmarket surveillance. Class III devices are subject to most of these requirements, as well as to premarket approval. Most Class I devices are exempt from premarket submissions to the FDA; most Class II devices require the submission of a 510(k) premarket notification to the FDA; and Class III devices require submission of a PMA. Most diagnostic kits are regulated as Class I or II devices and are either exempt from premarket notification or require a 510(k) submission.

*510(k) premarket notification.* A 510(k) notification requires the sponsor to demonstrate that a medical device is substantially equivalent to another marketed device, termed a "predicate device," that is legally marketed in the U.S. and for which a PMA was not required. A device is substantially equivalent to a predicate device if it has the same intended use and technological characteristics as the predicate; or has the same intended use but different technological characteristics, where the information submitted to the FDA does not raise new questions of safety and effectiveness and demonstrates that the device is at least as safe and effective as the legally marketed device. Under current FDA policy, if a predicate device does not exist, the FDA may make a risk-based determination based on the complexity and clinical utility of the device that the device is eligible for *de novo* 510(k) review instead of a requiring a PMA. The *de novo* 510(k) review process is similar to clearance of the 510(k) premarket notification, despite the lack of a suitable predicate device.

The FDA's performance goal review time for a 510(k) notification is 90 days from the date of receipt, however, in practice, the review often takes longer. In addition, the FDA may require information regarding clinical data in order to make a decision regarding the claims of substantial equivalence. Clinical studies of diagnostic products are typically designed with the primary objective of obtaining analytical or clinical performance data. If the FDA believes that the device is not substantially equivalent to a predicate device, it will issue a "Not Substantially Equivalent" letter and designate the device as a Class III device, which will require the submission and approval of a PMA before the new device may be marketed. Under certain circumstances, the sponsor may petition the FDA to make a risk-based determination of the new device and reclassify the new device as a Class I or Class II device. Any modifications made to a device, its labeling or its intended use after clearance may require a new 510(k) notification to be submitted and cleared by FDA. Some modifications may only require documentation to be kept by the manufacturer, but the manufacturer's determination of the absence of need for a new 510(k) notification remains subject to subsequent FDA disagreement and enforcement to cease marketing of the modified device.

The FDA has undertaken a systematic review of the 510(k) clearance process that includes both internal and independent recommendations for reform of the 510(k) system. The internal review, issued in August 2010, included a recommendation for development of a guidance document defining a subset of moderate risk (Class II) devices to include implantable, life-supporting or life-sustaining devices, called Class IIb, for which additional clinical or manufacturing data typically would be necessary to support a substantial equivalence determination. In the event that such new Class IIb sub-classification is adopted, we believe that most of the tests that we may pursue would be classified as Class IIa devices having the same requirements of the current Class II designation. In July 2011, the Institute of Medicine, or IOM, issued its independent recommendations for 510(k) reform. As the FDA receives public comment on the IOM recommendations and reconciles its plan of action to respond to both the internal and IOM recommendations, the availability of the 510(k) pathway for our diagnostic tests, and the timing and data burden required to obtain 510(k) clearance, could be adversely impacted. We cannot predict the impact of the 510(k) reform efforts on the development and clearance of our future diagnostic tests.

*De Novo 510(k).* If a previously unclassified new medical device does not qualify for the 510(k) pre-market notification process because there is no predicate device to which it is substantially equivalent, and if the device may be adequately regulated through general controls or special controls, the device may be eligible for *de novo* classification through what is called the *de novo* review process. In order to use the *de novo* review process, a company must receive a letter from the FDA stating that, because the device has been found not substantially equivalent to a legally marketed Class I or II medical device or to a Class III device marketed prior to May 28, 1976 for which the FDA has not required the submission of a PMA application, it has been placed into Class III. After receiving this letter, we, within 30 days, must submit to the FDA a request for a risk based down classification of the device from Class III to Class I or II based on the device's moderate or low risk profile which meets the definition of a Class I or Class II medical device. The FDA then has 60 days in which to decide whether to down classify the device. If the FDA agrees that a lower classification is warranted, it will issue a new regulation describing the device type and, for a Class II device, publish a Special Controls guidance document. The Special Controls guidance document specifies the scope of the device type and the recommendations for submission of subsequent devices for the same intended use. If a product is classified as Class II through the *de novo* review process, then that device may serve as a predicate device for subsequent 510(k) pre-market notifications.

*Premarket approval.* The PMA process is more complex, costly and time consuming than the 510(k) process. A PMA must be supported by more detailed and comprehensive scientific evidence, including clinical data, to demonstrate the safety and efficacy of the medical device for its intended purpose. If the device is determined to present a "significant risk," the sponsor may not begin a clinical trial until it submits an investigational device exemption, or IDE, to the FDA and obtains approval from the FDA to begin the trial.

After the PMA is submitted, the FDA has 45 days to make a threshold determination that the PMA is sufficiently complete to permit a substantive review. If the PMA is complete, the FDA will file the PMA. The FDA is subject to a performance goal review time for a PMA of 180 days from the date of filing, although in practice this review time is longer. Questions from the FDA, requests for additional data and referrals to advisory committees may delay the process considerably. Indeed, the total process may take several years and there is no guarantee that the PMA will ever be approved. Even if approved, the FDA may limit the indications for which the device may be marketed. The FDA may also request additional clinical data as a condition of approval or after the PMA is approved. Any changes to the medical device may require a supplemental PMA to be submitted and approved.

*Regulation of Pharmaceuticals or Combination Products.* In the U.S., the FDA may determine that Serenz should be regulated as a combination product or as a drug. The sales and marketing of pharmaceutical products in the U.S. are subject to extensive regulation by the FDA. The FFDCA and other federal and state statutes and regulations govern, among other things, the research, development, testing, manufacture, storage, recordkeeping, approval, labeling, promotion and marketing, distribution, post-approval monitoring and reporting, sampling, and import and export of pharmaceutical products. Failure to comply with applicable FDA or other requirements may subject a company to a variety of administrative or judicial sanctions, such as the

FDA's refusal to approve pending applications, a clinical hold, warning letters, recall or seizure of products, partial or total suspension of production, withdrawal of the product from the market, injunctions, fines, civil penalties or criminal prosecution.

FDA approval is required before any new unapproved drug or dosage form, including a new use of a previously approved drug, can be marketed in the U.S. The process required by the FDA before a drug may be marketed in the U.S. generally involves:

- completion of pre-clinical laboratory and animal testing and formulation studies in compliance with the FDA's current good laboratory practice regulation;
- submission to the FDA of an investigational new drug, or IND, application for human clinical testing which must become effective before human clinical trials may begin in the U.S.;
- approval by an IRB at each clinical trial site before a trial may be initiated at the site;
- performance of adequate and well-controlled human clinical trials in accordance with current good clinical practices, or GCP regulations, to establish the safety and efficacy of the proposed drug product for each intended use;
- satisfactory completion of an FDA pre-approval inspection of the facility or facilities at which the product is manufactured to assess compliance with the FDA's cGMP regulations, and for devices and device components, the FDA's Quality Systems Regulation, or QSR, and to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity;
- submission to the FDA of an NDA;
- satisfactory review by an FDA advisory committee, if applicable; and
- FDA review and approval of the NDA.

The pre-clinical and clinical testing and approval process requires substantial time, effort and financial resources, and we cannot be certain that any approvals for our future products will be granted on a timely basis, if at all. Pre-clinical tests include laboratory evaluation of product chemistry, formulation, stability and toxicity, as well as animal studies to assess the characteristics and potential safety and efficacy of the product. The results of pre-clinical tests, together with manufacturing information, analytical data and a proposed clinical trial protocol and other information, are submitted as part of an IND to the FDA. Some pre-clinical testing may continue even after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises concerns or questions relating to one or more proposed clinical trials and places a trial on clinical hold, including concerns that human research subjects will be exposed to unreasonable health risks. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, our submission of an IND may not result in FDA authorization to commence a clinical trial. A separate submission to an existing IND must also be made for each successive clinical trial conducted during product development.

Further, an independent IRB, covering each site proposing to conduct the clinical trial must review and approve the plan for any clinical trial and informed consent information for subjects before the trial commences at that site and it must monitor the study until completed. The FDA, the IRB, or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk or for failure to comply with the IRB's requirements, or may impose other conditions.

Clinical trials involve the administration of an investigational drug to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial. Sponsors of clinical trials generally must register and report, at the NIH-maintained website ClinicalTrials.gov, key parameters of certain clinical trials. For purposes of an NDA submission and approval, human clinical trials are typically conducted in the following sequential phases, which may overlap or be combined:

*Phase 1:* The drug is initially introduced into healthy human subjects or patients and tested for safety, dose tolerance, absorption, metabolism, distribution and excretion and, if possible, to gain an early indication of its effectiveness.

*Phase 2:* The drug is administered to a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted indications and to determine dose tolerance and optimal dosage. Multiple Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger and more extensive Phase 3 clinical trials.

*Phase 3:* These are commonly referred to as pivotal studies. When Phase 2 evaluations demonstrate that a dose range of the product appears to be effective and has an acceptable safety profile, Phase 3 trials are undertaken in large patient populations to further evaluate dosage, to obtain additional evidence of clinical efficacy and safety in an expanded patient population at multiple, geographically-dispersed clinical trial sites, to establish the overall risk-benefit relationship of the drug and to provide adequate information for the labeling of the drug.

*Phase 4:* In some cases, the FDA may condition approval of an NDA for a future product on the sponsor's agreement to conduct additional clinical trials to further assess the drug's safety and effectiveness after NDA approval. Such post-approval trials are typically referred to as Phase 4 studies.

The results of product development, pre-clinical studies and clinical trials are submitted to the FDA as part of an NDA. NDAs must also contain extensive information relating to the product's pharmacology, CMC and proposed labeling, among other things.

For combination products, the FDA's review may include the participation of both the FDA's Center for Drug Evaluation and Research and the FDA's Center for Devices and Radiological Health, which may complicate or prolong the review.

Before approving an NDA, the FDA may inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP, and if applicable, QSR, requirements and are adequate to assure consistent production of the product within required specifications. Additionally, the FDA will typically inspect one or more clinical sites to assure compliance with GCP before approving an NDA.

After the FDA evaluates the NDA and, in some cases, the related manufacturing facilities, it may issue an approval letter, or it may issue a Complete Response Letter, or CRL, to indicate that the review cycle for an application is complete and that the application is not ready for approval. CRLs generally outline the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when the deficiencies have been addressed to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications.

Once issued, the FDA may withdraw product approval if ongoing regulatory requirements are not met or if safety problems are identified after the product reaches the market. In addition, the FDA may require post-approval testing, including Phase 4 studies, and surveillance programs to monitor the effect of approved products which have been commercialized, and the FDA has the authority to prevent or limit further marketing of a product based on the results of these post-marketing programs. Drugs may be marketed only for the approved indications and in accordance with the provisions of the approved label, and, even if the FDA approves a product, it may limit the approved indications for use for the product or impose other conditions, including labeling or distribution restrictions or other risk-management mechanisms. Further, if there are any modifications to the drug, including changes in indications, labeling, or manufacturing processes or facilities, the sponsor may be required to submit and obtain FDA approval of a new or supplemental NDA, which may require the development of additional data or conduct of additional pre-clinical studies and clinical trials.

***Continuing FDA Regulation***

*Devices.* Under the medical device regulations, the FDA regulates quality control and manufacturing procedures by requiring us to demonstrate and maintain compliance with the quality system regulation, which sets forth the FDA's current good manufacturing practices requirements for medical devices. The FDA monitors compliance with the quality system regulation and current good manufacturing practices requirements by conducting periodic inspections of manufacturing facilities. We could be subject to unannounced inspections by the FDA. Violations of applicable regulations noted by the FDA during inspections of our manufacturing facilities, or the manufacturing facilities of these third parties, could adversely affect the continued marketing of our tests.

The FDA also enforces post-marketing controls that include the requirement to submit medical device reports to the agency when a manufacturer becomes aware of information suggesting that any of its marketed products may have caused or contributed to a death, serious injury or serious illness or any of its products has malfunctioned and that a recurrence of a malfunction would likely cause or contribute to a death or serious injury or illness. The FDA relies on medical device reports to identify product problems and utilizes these reports to determine, among other things, whether it should exercise its enforcement powers. The FDA may also require postmarket surveillance studies for specified devices.

FDA regulations also govern, among other things, the preclinical and clinical testing, manufacture, distribution, labeling and promotion of medical devices. In addition to compliance with good manufacturing practices and medical device reporting requirements, we will be required to comply with the FDCA's general controls, including establishment registration, device listing and labeling requirements. If we fail to comply with any requirements under the FDCA, we could be subject to, among other things, fines, injunctions, civil penalties, recalls or product corrections, total or partial suspension of production, denial of premarket notification clearance or approval of products, rescission or withdrawal of clearances and approvals, and criminal prosecution. We cannot assure you that any final FDA policy, once issued, or future laws and regulations concerning the manufacture or marketing of medical devices will not increase the cost and time to market of new or existing tests. Furthermore, any current or future federal and state regulations also will apply to future tests developed by us.

If our promotional activities fail to comply with these FDA regulations or guidelines, we may be subject to warnings from, or enforcement action by, these authorities. In addition, our failure to follow FDA rules and guidelines relating to promotion and advertising may cause the FDA to issue warning letters or untitled letters, suspend or withdraw a product from the market, require a recall or institute fines or civil fines, or could result in disgorgement of money, operating restrictions, injunctions or criminal prosecution.

*Pharmaceuticals.* Once an NDA is approved, a product will be subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to drug-device listing, recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product.

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

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market, though the FDA must provide an application holder with notice and an opportunity for a hearing in order to withdraw its

approval of an application. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

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

The FDA strictly regulates the marketing, labeling, advertising and promotion of drug and device products that are placed on the market. While physicians may prescribe drugs and devices for off label uses, manufacturers may only promote for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off label uses, and a company that is found to have improperly promoted off label uses may be subject to significant liability.

***Advertising***

Advertising of our tests is subject to regulation by the Federal Trade Commission, or FTC, under the FTC Act. The FTC Act prohibits unfair or deceptive acts or practices in or affecting commerce. Violations of the FTC Act, such as failure to have substantiation for product claims, would subject us to a variety of enforcement actions, including compulsory process, cease and desist orders and injunctions, which can require, among other things, limits on advertising, corrective advertising, consumer redress and restitution, as well as substantial fines or other penalties. Any enforcement actions by the FTC could have a material adverse effect our business.

***HIPAA and Other Privacy Laws***

The Health Insurance Portability and Accountability Act of 1996, or HIPAA, established for the first time comprehensive protection for the privacy and security of health information. The HIPAA standards apply to three types of organizations, or "Covered Entities": health plans, healthcare clearing houses, and healthcare providers which conduct certain healthcare transactions electronically. Covered Entities and their Business Associates must have in place administrative, physical, and technical standards to guard against the misuse of individually identifiable health information. Because we are a healthcare provider and we conduct certain healthcare transactions electronically, we are presently a Covered Entity, and we must have in place the administrative, physical, and technical safeguards required by HIPAA, HITECH and their implementing regulations. Additionally, some state laws impose privacy protections more stringent than HIPAA. Most of the institutions and physicians from which we obtain biological specimens that we use in our research and validation work are Covered Entities and must obtain proper authorization from their patients for the subsequent use of those samples and associated clinical information. We may perform future activities that may implicate HIPAA, such as providing clinical laboratory testing services or entering into specific kinds of relationships with a Covered Entity or a Business Associate of a Covered Entity.

If we or our operations are found to be in violation of HIPAA, HITECH or their implementing regulations, we may be subject to penalties, including civil and criminal penalties, fines, and exclusion from participation in U.S. federal or state health care programs, and the curtailment or restructuring of our operations. HITECH increased the civil and criminal penalties that may be imposed against Covered Entities, their Business Associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney's fees and costs associated with pursuing federal civil actions.

Our activities must also comply with other applicable privacy laws. For example, there are also international privacy laws that impose restrictions on the access, use, and disclosure of health information. All of these laws may impact our business. Our failure to comply with these privacy laws or significant changes in the laws restricting our ability to obtain tissue samples and associated patient information could significantly impact our business and our future business plans.

***Federal and State Billing and Fraud and Abuse Laws***

*Antifraud Laws/Overpayments*. As participants in federal and state healthcare programs, we are subject to numerous federal and state antifraud and abuse laws. Many of these antifraud laws are broad in scope, and neither the courts nor government agencies have extensively interpreted these laws. Prohibitions under some of these laws include:

- the submission of false claims or false information to government programs;
- deceptive or fraudulent conduct;
- excessive or unnecessary services or services at excessive prices; and
- prohibitions in defrauding private sector health insurers.

We could be subject to substantial penalties for violations of these laws, including denial of payment and refunds, suspension of payments from Medicare, Medicaid or other federal healthcare programs and exclusion from participation in the federal healthcare programs, as well as civil monetary and criminal penalties and imprisonment. One of these statutes, the False Claims Act, is a key enforcement tool used by the government to combat healthcare fraud. The False Claims Act imposes liability on any person who, among other things, knowingly presents, or causes to be presented, a false or fraudulent claim for payment by a federal healthcare program. In addition, violations of the federal physician self-referral laws, such as the Stark laws discussed below, may also violate false claims laws. Liability under the False Claims Act can result in treble damages and imposition of penalties. For example, we could be subject to penalties of $5,500 to $11,000 per false claim, and each use of our product could potentially be part of a different claim submitted to the government. Separately, the HHS office of the Office of Inspector General, or OIG, can exclude providers found liable under the False Claims Act from participating in federally funded healthcare programs, including Medicare. The steep penalties that may be imposed on laboratories and other providers under this statute may be disproportionate to the relatively small dollar amounts of the claims made by these providers for reimbursement. In addition, even the threat of being excluded from participation in federal healthcare programs can have significant financial consequences on a provider.

Numerous federal and state agencies enforce the antifraud and abuse laws. In addition, private insurers may also bring private actions. In some circumstances, private whistleblowers are authorized to bring fraud suits on behalf of the government against providers and are entitled to receive a portion of any final recovery.

***Federal and State "Self-Referral" and "Anti-Kickback" Restrictions***

*Self-Referral law*. We are subject to a federal "self-referral" law, commonly referred to as the "Stark" law, which provides that physicians who, personally or through a family member, have ownership interests in or compensation arrangements with a laboratory are prohibited from making a referral to that laboratory for laboratory tests reimbursable by Medicare, and also prohibits laboratories from submitting a claim for Medicare payments for laboratory tests referred by physicians who, personally or through a family member, have ownership interests in or compensation arrangements with the testing laboratory. The Stark law contains a number of specific exceptions which, if met, permit physicians who have ownership or compensation arrangements with a testing laboratory to make referrals to that laboratory and permit the laboratory to submit claims for Medicare payments for laboratory tests performed pursuant to such referrals.

We are subject to comparable state laws, some of which apply to all payors regardless of source of payment, and do not contain identical exceptions to the Stark law. For example, we are subject to a North Carolina self-referral law that prohibits a physician investor from referring to us any patients covered by private, employer-funded or state and federal employee health plans. The North Carolina self-referral law contains few exceptions for physician investors in securities that have not been acquired through public trading, but will generally permit us to accept referrals from physician investors who buy their shares in the public market.

We have several stockholders who are physicians in a position to make referrals to us. We have included within our compliance plan procedures to identify requests for testing services from physician investors and we do not bill Medicare, or any other federal program, or seek reimbursement from other third-party payors, for these tests. The self-referral laws may cause some physicians who would otherwise use our laboratory to use other laboratories for their testing.

Providers are subject to sanctions for claims submitted for each service that is furnished based on a referral prohibited under the federal self-referral laws. These sanctions include denial of payment and refunds, civil monetary payments and exclusion from participation in federal healthcare programs and civil monetary penalties, and they may also include penalties for applicable violations of the False Claims Act, which may require payment of up to three times the actual damages sustained by the government, plus civil penalties of $5,500 to $11,000 for each separate false claim. Similarly, sanctions for violations under the North Carolina self-referral laws include refunds and monetary penalties.

*Anti-Kickback Statute*. The federal Anti-Kickback Statute prohibits persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce either the referral of an individual, or the furnishing, recommending, or arranging for a good or service, for which payment may be made under a federal healthcare program, such as the Medicare and Medicaid programs. The term "remuneration" is not defined in the federal Anti-Kickback Statute and has been broadly interpreted to include anything of value, including for example, gifts, discounts, the furnishing of supplies or equipment, credit arrangements, payments of cash, waivers of payment, ownership interests and providing anything at less than its fair market value. The reach of the Anti-Kickback Statute was also broadened by the Patient Protection and Affordable Care Act of 2010, or PPACA, which, among other things, amends the intent requirement of the federal Anti-Kickback Statute and certain criminal healthcare fraud statutes, effective March 23, 2010. Pursuant to the statutory amendment, a person or entity does not need to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation. In addition, PPACA provides that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act or the civil monetary penalties statute, which imposes penalties against any person who is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent. Sanctions for violations of the federal Anti-Kickback Statute may include imprisonment and other criminal penalties, civil monetary penalties and exclusion from participation in federal healthcare programs.

The OIG has criticized a number of the business practices in the clinical laboratory industry as potentially implicating the Anti-Kickback Statute, including compensation arrangements intended to induce referrals between laboratories and entities from which they receive, or to which they make, referrals. In addition, the OIG has indicated that "dual charge" billing practices that are intended to induce the referral of patients reimbursed by federal healthcare programs may violate the Anti-Kickback Statute.

Many states have also adopted laws similar to the federal Anti-Kickback Statute, some of which apply to the referral of patients for healthcare items or services reimbursed by any source, not only the Medicare and Medicaid programs, and do not contain identical safe harbors. For example, North Carolina has an anti-kickback statute that prohibits healthcare providers from paying any financial compensation for recommending or securing patient referrals. Penalties for violations of this statute include license suspension or revocation or other disciplinary action. Other states have similar anti-kickback prohibitions.

Both the federal Anti-Kickback Statute and the North Carolina anti-kickback law are broad in scope. The anti-kickback laws clearly prohibit payments for patient referrals. Under a broad interpretation, these laws could also prohibit a broad array of practices involving remuneration where one party is a potential source of referrals for the other.

If we or our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in U.S. federal or state health care programs, and the curtailment or restructuring of our operations. To the extent that any product we make is sold in a foreign country in the future, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws, and implementation of corporate compliance programs and reporting of payments or transfers of value to healthcare professionals. To reduce the risks associated with these various laws and governmental regulations, we have implemented a compliance plan. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

***International Medical Device Regulations***

International marketing of medical devices is subject to foreign government regulations, which vary substantially from country to country. The European Commission is the legislative body responsible for directives with which manufacturers selling medical products in the E.U. and the European Economic Area, or EEA, must comply. The E.U. includes most of the major countries in Europe, while other countries, such as Switzerland, are part of the EEA and have voluntarily adopted laws and regulations that mirror those of the E.U. with respect to medical devices. The E.U. has adopted directives that address regulation of the design, manufacture, labeling, clinical studies and post-market vigilance for medical devices. Devices that comply with the requirements of a relevant directive will be entitled to bear the CE conformity marking, indicating that the device conforms to the essential requirements of the applicable directives and, accordingly, can be marketed throughout the E.U. and EEA.

Outside of the E.U., regulatory pathways for the marketing of medical devices vary greatly from country to country. In many countries, local regulatory agencies conduct an independent review of medical devices prior to granting marketing approval. For example, in China, approval by the SFDA, must be obtained prior to marketing an medical device. In Japan, approval by the MHLW following review by the Pharmaceuticals and Medical Devices Agency, or the PMDA is required prior to marketing an medical device. The process in such countries may be lengthy and require the expenditure of significant resources, including the conduct of clinical trials. In other countries, the regulatory pathway may be shorter or less costly. The timeline for the introduction of new medical devices is heavily impacted by these various regulations on a country-by-country basis, which may become more lengthy and costly over time.

***U.S. Healthcare Reform***

In March 2010, the PPACA was enacted, which includes measures that have or will significantly change the way healthcare is financed by both governmental and private insurers. Beginning in August 2013, the Physician Payment Sunshine Act, enacted as part of PPACA, and its implementing regulations requires medical device manufacturers to track certain financial arrangements with physicians and teaching hospitals, including any "transfer of value" made or distributed to such entities, as well as any investment interests held by physicians and their immediate family members. Manufacturers are required to report this information to Centers for Medicare & Medicaid Services, or CMS, beginning in 2014. Various states have also implemented regulations prohibiting certain financial interactions with healthcare professionals or mandating public disclosure of such financial interactions. We may incur significant costs to comply with such laws and regulations now or in the future.

***The Foreign Corrupt Practices Act***

The Foreign Corrupt Practices Act, or FCPA, prohibits any U.S. individual or business from paying, offering or authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the U.S. to comply with accounting provisions requiring us to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

**Employees**

As of May 1, 2014, we had seven full-time employees. We also have seven full-time or part-time consultants providing services to us. None of our employees is represented by a labor union or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

**Facilities**

Our principal facilities consist of office space in Redwood City, California, which also contains our final assembly and calibration facility for CoSense. We currently occupy approximately 6,000 square feet of office space under a sublease that expires in May 2015.

**Legal proceedings**

We are not currently subject to any legal proceedings.

# MANAGEMENT

## Directors and Executive Officers

The following table sets forth information regarding our executive officers and directors as of June 30, 2014:

| Name | Age | Position |
|---|---|---|
| **Executive Officers:** | | |
| Anish Bhatnagar, M.D. | 46 | President, Chief Executive Officer and Director |
| Anthony Wondka | 52 | Vice President of Research and Development |
| Antoun Nabhan, J.D. | 39 | Vice President of Corporate Development |
| Gina Phelps | 58 | Vice President of Sales |
| **Non-Employee Directors:** | | |
| Ernest Mario, Ph.D. | 75 | Chairman |
| Edgar G. Engleman, M.D. | 68 | Director |
| Steinar J. Engelsen, M.D., M.Sc.(1)(2)(3) | 63 | Director |
| William G. Harris(1)(2) | 56 | Director |
| Stephen Kirnon, Ed.D.(2)(3) | 51 | Director |
| William James Alexander, M.D.(1)(3) | 64 | Director |

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

## Executive Officers

*Anish Bhatnagar, M.D.* Dr. Bhatnagar was appointed as our Chief Executive Officer in February 2014. Prior to that, he served as our President and Chief Operating Officer. Dr. Bhatnagar joined us in 2006, and has held positions of increasing responsibility since then. Dr. Bhatnagar is a physician with over 15 years of experience in the medical device and biopharmaceutical industries. His experience spans development of biologics, drugs, drug-device combinations and diagnostic as well as therapeutic medical devices. His prior experience includes working at Coulter Pharmaceuticals, Inc. from 1998 to 2000 and Titan Pharmaceuticals, Inc. from 2000 to 2006. He is the author of several peer-reviewed publications, abstracts and book chapters. He obtained his medical degree at SMS Medical College in Jaipur, India and completed his Residency and Fellowship training in the U.S. at various institutions, including Georgetown University Hospital and the University of Pennsylvania.

We believe Dr. Bhatnagar is able to make valuable contributions to our board of directors due to his service as an executive officer of our company, including as Chief Executive Officer, extensive knowledge of medical device and pharmaceutical company operations, and extensive experience working with companies, regulators and other stakeholders in the medical device and pharmaceutical industries.

*Anthony Wondka.* Mr. Wondka was appointed as our Vice President of Research and Development in June 2013. Prior to that, he was a consultant for us since May 2011. He has held management and executive positions in the medical device industry for over 20 years, in large and small companies. From April 2006 to March 2011, Mr. Wondka served as VP of R&D and then VP of Technology and Clinical Affairs for Breathe Technologies, where he invented and co-invented ventilation products that address large unmet needs in chronic obstructive pulmonary disease, or COPD, and obstructive sleep apnea. From July 1997 to April 2006, Mr. Wondka was Director of R&D and VP of Manufacturing at Pulmonx, where he co-invented and led the early development of the Chartis™ diagnostic system and procedure that is used to guide endobronchial lung volume reduction for the treatment of COPD, and is currently being sold in the E.U. Prior to Pulmonx, Mr. Wondka worked at Pfizer subsidiary Shiley (acquired by Covidien) and Bear Medical (acquired by Carefusion), where he held lead roles in engineering and quality assurance, supporting commercialization activities for market leading ENT and respiratory products. He holds over 40 issued or pending patents and has a B.S. in Bioengineering from University of California San Diego.

*Antoun Nabhan, J.D.* Mr. Nabhan joined us in April 2014 as an employee and before that was a consultant to Capnia since October of 2013. He is a specialist in finance and corporate development for healthcare-related businesses. From 2012 to 2013, he was the Vice President of Corporate Development at Tobira Therapeutics, a drug development company. From 2008 to 2012, he was part of the corporate development and strategy team at Onyx Pharmaceuticals, Inc., an oncology drug company acquired by Amgen for $10.6 billion in 2013. He played a significant role in that company's acquisition of Proteolix, Inc. and subsequent out-license of Japanese-territory rights to its product, Kyprolis® (carfilzomib). Mr. Nabhan is a Principal of Sagamore Bioventures, a biotechnology-focused investment fund that he joined in 2002. From 2006 to 2008, he was a founder and Chief Financial Officer at Presidio Pharmaceuticals, Inc., a drug discovery company focused on hepatitis C, HIV, and other viral diseases. He co-founded Incellico Inc. (acquired by Sylventa Inc.) and served as its VP of Finance & Business Development. He started his career as an analyst for Deloitte & Touche Consulting Group. Mr. Nabhan received his J.D. from Harvard Law School, where he was an Affiliate of the Berkman Center for Law and Technology, and his A.B. from the University of Chicago.

*Gina Phelps*. Ms. Phelps joined Capnia in June 2014 and has over 25 years of experience in sales of medical devices and point-of-care diagnostics. Prior to joining Capnia, Ms. Phelps served as Director of Sales (West) for Accumetrics, leading the company's sales efforts for the VerifyNow® line of hospital-based diagnostics. She held this position from 2011 until the acquisition of Accumetrics by ITC Corporation in 2013. Prior to that, Ms. Phelps was the National Sales Director for Metrika, Inc., where she had a leadership role in the launch of Metrika's point-of-care diagnostic devices for diabetes management. Metrika was acquired by Bayer Healthcare LLC in 2006. Ms. Phelps continued her sales leadership role for the Metrika products post-acquisition, serving in various positions of increasing responsibility with Bayer Healthcare from 2006 through 2011. She started her career in medical device and diagnostics sales with Roche Diagnostics. Ms. Phelps was a licensed practical nurse and received her B.S. from Utah College of Applied Technology.

**Non-Employee Directors**

*Ernest Mario, Ph.D.* Dr. Mario joined our board of directors in August 2007 and served as Chairman and Chief Executive Officer until February 2014 when he was named Chairman. From April 2003 to August 2007, Dr. Mario served as Chief Executive Officer and Chairman of Reliant Pharmaceuticals, Inc., a privately held pharmaceutical company that was acquired by GSK for approximately $1.6 billion in 2007. Dr. Mario served as Chief Executive Officer and Chairman of ALZA Corporation, a research-based pharmaceutical company, from November 1997 to December 2001, when ALZA was acquired by Johnson & Johnson for approximately $12 billion. Previously he served as Chief Executive Officer and Co-Chairman of ALZA from August 1993 to November 1997. From January 1992 until March 1993, Dr. Mario served as Deputy Chairman of Glaxo Holdings plc., a pharmaceutical company, and as Chief Executive from May 1989 to March 1993. Dr. Mario has current and past service on a number of corporate boards including Boston Scientific Corporation, Celgene Inc., Chimerix, Inc., Kindred Biosciences Inc., Tonix Pharmaceuticals Holding Corp. and XenoPort Inc. Dr. Mario is active in numerous educational and healthcare organizations. He is Chairman of the American Foundation for Pharmaceutical Education, a Director of the Gladstone Foundation, and past Chairman of the Duke University Health System. Dr. Mario earned his M.S. and Ph.D. in physical sciences at the University of Rhode Island and a B.S. in pharmacy at Rutgers. He holds honorary doctorates from the University of Rhode Island and Rutgers University. In 2007 he was awarded the Remington Medal by the American Pharmacists' Association, pharmacy's highest honor.

We believe Dr. Mario is able to make valuable contributions to our board of directors due to his extensive knowledge of our company, the industry, and our competitors, his extensive experience in risk oversight, quality and business strategy as a result of serving in leadership roles at multiple companies, his status as a significant stockholder and his prior service as our Chief Executive Officer.

*Edgar G. Engleman, M.D.* Dr. Engleman has been a member of our board of directors since June 2001. He is a founding member of Vivo Ventures, LLC (formerly BioAsia Investments) and since 1990 has served as Professor of Pathology and Medicine at Stanford University School of Medicine, where he oversees the Stanford

Blood Center as well as his own immunology research group. An editor of numerous scientific journals and the inventor of multiple patented technologies, Dr. Engleman has authored more than 250 publications in medical and scientific journals and has trained more than 200 graduate students and postdoctoral fellows. Dr. Engleman has co-founded a number of biopharmaceutical companies including Cetus Immune Corporation (acquired by Chiron Corporation), Genelabs Technologies, Inc., (acquired by GlaxoSmithKline plc), National Medical Audit, and Dendreon Corporation. He is the lead inventor of the technology underlying Provenge, Dendreon's cancer vaccine, which was approved in 2010 to treat asymptomatic or minimally symptomatic metastatic hormone-refractory prostate cancer. Dr. Engleman currently serves on the boards of several private biotechnology companies, including Gryphon Therapeutics, Inc., Naryx Pharma, Inc., Eiger BioPharma, Inc., Nuveta, Inc. and Semnur Pharmaceuticals, Inc. He received his M.D. from Columbia University School of Medicine and his B.A. from Harvard University.

We believe Dr. Engleman is able to make valuable contributions to our board of directors due to his extensive knowledge of the healthcare industry, his medical expertise, his service on other company boards of directors, and his understanding of our company.

*Steinar J. Engelsen, M.D., M.Sc., CEFA.* Dr. Engelsen has been a member of our board of directors since April 2004. Since November 1996, Dr. Engelsen has been a partner of Teknoinvest AS, a venture capital firm based in Norway. From June 1989 until October 1996, Dr. Engelsen held various management positions within Hafslund Nycomed AS, a pharmaceutical company based in Europe, and affiliated companies. He was responsible for therapeutic research and development, most recently serving as Senior Vice President, Research and Development of Nycomed Pharma AS from January 1994 until October 1996. He currently serves on the board of directors of Insmed, Inc. In addition, from January to November 2000, Dr. Engelsen was acting Chief Executive Officer of Centaur Pharmaceuticals, Inc., a biopharmaceutical company. Dr. Engelsen also served as Chairman of the board of directors of Centaur. Dr. Engelsen received his M.Sc. in Nuclear Chemistry and his M.D. from the University of Oslo, and is a Certified European Financial Analyst from The Norwegian School of Economics.

We believe Dr. Engelsen is able to make valuable contributions to our board of directors due to his extensive healthcare management experience, his financial and business leadership and expertise resulting from serving as a director or executive officer of multiple companies, and his understanding of our company.

*William G. Harris.* Mr. Harris has been a member of our board of directors since June 2014. Since 2001, he has been the Senior Vice President of Finance and Chief Financial Officer of Xenoport, Inc. From 1996 to 2001, he held several positions with Coulter Pharmaceutical, Inc., a biotechnology company engaged in the development of novel therapies for the treatment of cancer and autoimmune diseases, the most recent of which was Senior Vice President and Chief Financial Officer. Corixa Corp., a developer of immunotherapeutic products, acquired Coulter Pharmaceutical in 2000. Prior to Coulter Pharmaceutical, from 1990 to 1996, Mr. Harris held several positions at Gilead Sciences, Inc., the most recent of which was director of finance. Mr. Harris received a B.A. from the University of California, San Diego and an M.B.A. from Santa Clara University, Leavey School of Business and Administration.

We believe Mr. Harris is able to make valuable contributions to our board of directors due to his vast experience as a finance professional in the biomedical and pharmaceutical industries.

*Stephen Kirnon, Ed.D.* Dr. Kirnon has been a member of our board of directors since July 2002. He has over 20 years of operational experience in biomedical organizations. Since January 2009, he has served as the Co-founder and CEO of PharmaPlan LLC. From January 2012 until July 2013 he served as Vice President, Co-Lead Life Science Practice at Witt/Kieffer, Ford, Hadelman, Lloyd Corp. Prior to that, Dr Kirnon was the President and Chief Executive Officer of Pepgen Corporation, a biopharmaceutical company based in Alameda, California, specializing in autoimmune diseases. He was formerly the President and CEO of Target Protein Technologies, Inc., a pharmaceutical company based in San Diego and specializing in the development of pharmaceutical compounds targeted to specific tissues and organs of the human body. Prior to TPT, he was the President and COO and a member of the Board of Yamanouchi Pharma Technologies, Inc., which is responsible

for developing and commercializing Yamanouchi's proprietary drug delivery technologies as well as the U.S. development and manufacture of Yamanouchi's pharmaceuticals. Previously, Dr. Kirnon was the President of the Drug Delivery Division of Cygnus, Inc., successfully leading that Division into profitability and subsequently through sale of its business. Dr. Kirnon has also held various business development, sales, and marketing positions at Cygnus, Biogenex Laboratories, Inc., and GlaxoSmithKline plc. Dr. Kirnon received his doctorate in organization change and transformational leadership from as well as his M.B.A. from Pepperdine University, where he is an Adjunct Professor. He received a B.A. degree in Biochemistry from Harvard University. He is also a trustee of the New England College of Optometry.

We believe Dr. Kirnon is able to make valuable contributions to our board of directors due to his extensive operational experience in the biomedical and pharmaceutical industries, and his knowledge of our company.

*William James Alexander, M.D., M.P.H., FACP.* Dr. Alexander has been a member of our board of directors since June 2008. Since June 2008, he has worked as an independent consultant to the pharmaceutical industry. He also serves as Senior Director of Medical Affairs at Chiesi USA, Inc. He has held senior clinical development and regulatory positions at a number of companies, including Beecham, SmithKline The Beecham Group plc, GlaxoSmithKline plc, and Glaxo Wellcome plc. He has contributed to successful NDAs for products in multiple therapeutic areas, including antibacterials, antivirals (herpes, hepatitis, and HIV), asthma and COPD, as well as migraine. Dr. Alexander was a public health medical officer and clinical investigator in Birmingham, Alabama, and collaborated with the CDC in investigating the epidemiology of hepatitis C and HIV. He is certified by the American Board of Internal Medicine and has been a member of the Infectious Diseases Society of America since 2010. Dr. Alexander received his M.D. from the University of Missouri and his M.P.H. from the University of Alabama, Birmingham. He received his B.S. in science from Mississippi State University.

We believe Dr. Alexander is able to make valuable contributions to our board of directors due to his years of public health and pharmaceutical industry experience, his business and regulatory expertise resulting from his service in leadership positions at multiple companies, and his knowledge of our company.

**Board Composition**

Our business and affairs are managed under the direction of our board of directors, which currently consists of six members. The members of our board of directors were elected in compliance with the provisions of our amended and restated certificate of incorporation, as amended, and a voting agreement among certain of our stockholders, as amended. The voting agreement will terminate upon the closing of this offering and none of our stockholders will have any special rights regarding the election or designation of members of our board of directors.

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

- The Class I directors will be Drs. Engleman and Alexander, and their terms will expire at our annual meeting of stockholders to be held in 2017;
- The Class II directors will be Drs. Kirnon and Engelsen, and their terms will expire at our annual meeting of stockholders to be held in 2018; and
- The Class III directors will be Drs. Bhatnagar and Mario and Mr. Harris, and their terms will expire at our annual meeting of stockholders to be held in 2019.

We expect that additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the

directors. The division of our board of directors into three classes with staggered three-year terms could potentially delay or prevent a change of our management or a change in control of our company.

**Director Independence**

Under the listing requirements and rules of The NASDAQ Capital Market, or NASDAQ, independent directors must comprise a majority of a listed company's board of directors within a specified period of time after this offering.

Our board of directors has undertaken a review of its composition, the composition of its committees, and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that Drs. Engelsen, Kirnon and Alexander have no relationships that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent," as that term is defined under the applicable rules and regulations of the Securities and Exchange Commission, or the SEC, and the listing requirements and rules of NASDAQ. In making this determination, our board of directors considered the current and prior relationships that each non-employee director has with our company, any other transactional relationships a non-employee director may have with our company, and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock held by each non-employee director and any of his and our respective affiliates.

**Board Leadership Structure**

Our board of directors has a Chairman, Dr. Mario, who has authority, among other things, to preside over board of directors meetings, and to call special meetings of the board. Accordingly, the Chairman has substantial ability to shape the work of our board of directors. We currently believe that separation of the roles of Chairman and Chief Executive Officer reinforces the leadership role of our board of directors in its oversight of the business and affairs of our Company. In addition, we currently believe that having a separate Chairman creates an environment that is more conducive to objective evaluation and oversight of management's performance, increasing management accountability and improving the ability of our board of directors to monitor whether management's actions are in the best interests of the company and its stockholders. However, no single leadership model is right for all companies and at all times. Our board of directors recognizes that depending on the circumstances, other leadership models, such as combining the role of Chairman with the role of Chief Executive Officer, might be appropriate. As a result, our board of directors may periodically review its leadership structure.

**Board committees**

Our board of directors has the authority to appoint committees to perform certain management and administration functions. Our board of directors has an audit committee, a compensation committee and a nominating and corporate governance committee. The composition and responsibilities of each committee are described below. Members will serve on these committees until their resignation or until otherwise determined by our board of directors. The inclusion of our website address in this prospectus does not incorporate by reference the information on or accessible through our website into this prospectus.

***Audit committee***

Our audit committee consists of Steinar J. Engelsen, William G. Harris and William James Alexander, each of whom satisfies the independence requirements under NASDAQ listing standards and Rule 10A-3(b)(1) of the Securities Exchange Act of 1934, as amended, or the Exchange Act. The chairperson of our audit committee is Mr. Harris. Each member of our audit committee can read and understand fundamental financial statements in accordance with audit committee requirements. In arriving at this determination, our board of

directors has examined each audit committee member's scope of experience and the nature of their employment in the corporate finance sector.

Our audit committee oversees our corporate accounting and financial reporting process and assists our board of directors in oversight of the integrity of our financial statements, our compliance with legal and regulatory requirements, our independent auditor's qualifications, independence and performance and our internal accounting and financial controls. Our audit committee is responsible for the appointment, compensation, retention and oversight of our independent auditors. Our board of directors has determined that Dr. Engelsen and Mr. Harris are audit committee financial experts, as defined by the rules promulgated by the SEC.

Following the closing of this offering, the charter of the audit committee will be available on our website at *www.capnia.com*. The inclusion of our website address in this prospectus does not include or incorporate by reference into this prospectus the information on or accessible through our website.

***Compensation committee***

Our compensation committee consists of Steinar J. Engelsen, William G. Harris and Stephen Kirnon each of whom our board of directors has determined to be independent under NASDAQ listing standards, a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act, and an "outside director" as that term is defined in Section 162(m) of the Code. The chairperson of our compensation committee is Dr. Engelsen.

Our compensation committee oversees our compensation policies, plans and benefits programs and assists our board of directors in meeting its responsibilities with regard to oversight and determination of executive compensation. In addition, our compensation committee reviews and makes recommendations to our board of directors with respect to our major compensation plans, policies and programs and assesses whether our compensation structure establishes appropriate incentives for officers and employees.

Following the closing of this offering, the charter of the compensation committee will be available on our website at *www.capnia.com*. The inclusion of our website address in this prospectus does not include or incorporate by reference into this prospectus the information on or accessible through our website.

***Nominating and corporate governance committee***

Our nominating and corporate governance committee consists of Steinar J. Engelsen, Stephen Kirnon and William James Alexander, each of whom our board of directors has determined to be independent under NASDAQ listing standards. The chairperson of our nominating and corporate governance committee is Dr. Kirnon.

Our nominating and corporate governance committee is responsible for making recommendations to our board of directors regarding candidates for directorships and the size and composition of the board of directors and its committees. In addition, our nominating and corporate governance committee is responsible for reviewing and making recommendations to our board of directors on matters concerning corporate governance and conflicts of interest.

Following the closing of this offering, the charter of the nominating and corporate governance committee will be available on our website at *www.capnia.com*. The inclusion of our website address in this prospectus does not include or incorporate by reference into this prospectus the information on or accessible through our website.

**Role in Risk Oversight**

Our board of directors oversees an enterprise-wide approach to risk management, designed to support the achievement of business objectives, including organizational and strategic objectives, to improve long-term organizational performance and enhance stockholder value. The involvement of our board of directors in setting

our business strategy is a key part of its assessment of management's plans for risk management and its determination of what constitutes an appropriate level of risk for our company. The participation of our board of directors in our risk oversight process includes receiving regular reports from members of senior management on areas of material risk to our company, including operational, financial, legal and regulatory, and strategic and reputational risks.

While our board of directors has the ultimate responsibility for the risk management process, senior management and various committees of our board of directors will also have responsibility for certain areas of risk management.

Our senior management team is responsible for day-to-day risk management and regularly reports on risks to our full board of directors or a relevant committee. Our finance and regulatory personnel serve as the primary monitoring and evaluation function for company-wide policies and procedures, and manage the day-to-day oversight of the risk management strategy for our ongoing business. This oversight includes identifying, evaluating, and addressing potential risks that may exist at the enterprise, strategic, financial, operational, compliance and reporting levels.

Our audit committee will focus on monitoring and discussing our major financial risk exposures and the steps management has taken to monitor and control such exposures, including our risk assessment and risk management policies. As appropriate, the audit committee will provide reports to and receive direction from the full board of directors regarding our risk management policies and guidelines, as well as the audit committee's risk oversight activities.

In addition, our compensation committee will assess our compensation policies to confirm that the compensation policies and practices do not encourage unnecessary risk taking. The compensation committee will review and discuss the relationship between risk management policies and practices, corporate strategy and senior executive compensation and, when appropriate, report on the findings from the discussions to our board of directors. Our compensation committee intends to set performance metrics that will create incentives for our senior executives that encourage an appropriate level of risk-taking that is commensurate with our short-term and long-term strategies.

**Code of Business Conduct and Ethics**

Upon the closing of this offering, we will adopt a code of business conduct and ethics that applies to all of our employees, officers and directors, including those officers responsible for financial reporting. Following the closing of this offering, the code of business conduct and ethics will be available on our website at *www.capnia.com*. We intend to disclose any amendments to the code, or any waivers of its requirements, on our website to the extent required by the applicable rules and exchange requirements. The inclusion of our website address in this prospectus does not incorporate by reference the information on or accessible through our website into this prospectus.

**Compensation Committee Interlocks and Insider Participation**

None of the members of our compensation committee has ever been an officer or employee of the company. None of our executive officers serve, or have served during the last fiscal year, as a member of a board of directors, compensation committee or other board committee performing equivalent functions of any entity that has one or more executive officers serving on our board directors or on our compensation committee.

**Non-Employee Director Compensation**

Directors who are employees do not receive any additional compensation for their service on our board of directors. We reimburse our non-employee directors for their reasonable out-of-pocket costs and travel expenses in connection with their attendance at board of directors and committee meetings. In 2013, certain of our non-employee directors received cash compensation as set forth below.

The following table sets forth information regarding compensation earned by our non-employee directors during the fiscal year ended December 31, 2013.

| Name | Cash Compensation | Option Awards(1) | Other Compensation | Total |
|---|---|---|---|---|
| Edgar G. Engleman | — | — | — | — |
| Steinar J. Engelsen | — | — | — | — |
| Stephen Kirnon | — | — | — | — |
| William James Alexander | — | — | — | — |

(1) The amounts in this column reflect the aggregate grant date fair value of each option award granted during the fiscal year, computed in accordance with FASB ASC Topic 718. The valuation assumptions used in determining such amounts are described in Note 6 and Note 9 to our financial statements included in this prospectus. The table below lists the aggregate number of shares and additional information with respect to the outstanding option awards held by each of our non-employee directors.

| Name | Equity Award Grant Date | Number of Shares Subject to Outstanding Options as of December 31, 2013 | Option Exercise Price(5) | Option Expiration Date |
|---|---|---|---|---|
| Edgar G. Engleman(1) | — | — | — | — |
| Steinar J. Engelsen(2) | — | — | — | — |
| Stephen Kirnon(3) | 6/21/2005 | 21,875 | $ 0.48 | 6/21/2015 |
| Stephen Kirnon(3) | 6/27/2008 | 20,000 | $ 0.29 | 9/25/2018 |
| Stephen Kirnon(3) | 10/15/2008 | 10,000 | $ 0.29 | 10/15/2018 |
| William James Alexander(4) | 9/25/2008 | 20,000 | $ 0.29 | 9/25/2018 |
| William James Alexander(4) | 10/15/2008 | 10,000 | $ 0.29 | 10/15/2018 |

(1) Dr. Engleman joined our board of directors in June 2001.
(2) Dr. Engelsen joined our board of directors in April 2004.
(3) Dr. Kirnon joined our board of directors in July 2002.
(4) Dr. Alexander joined our board of directors in June 2008.
(5) The grant date fair market value of the common stock underlying these option awards is equal to the option exercise price on the date of grant.

Our board of directors has adopted a non-employee director compensation policy, which will be effective for all of our non-employee directors upon the closing of this offering, pursuant to which we will compensate our non-employee directors with a combination of cash and equity. Each such director will receive an annual base cash retainer of $35,000 for such service, to be paid quarterly. The policy also provides that we compensate certain members of our board of directors for service on our committees as follows:

- The chair or executive chair of our board of directors will receive an annual cash retainer of $25,000 for such service, paid quarterly;
- The chairperson of our audit committee will receive an annual cash retainer of $10,000 for such service, paid quarterly;
- The chairperson of our compensation committee will receive an annual cash retainer of $10,000 for such service, paid quarterly; and
- The chairperson of our nominating and corporate governance committee will receive an annual cash retainer of $10,000 for such service, paid quarterly.

The policy further provides for the grant of equity awards for each new director that joins our board of directors after the closing of this offering and all of our current directors upon completion of this offering, an initial stock option grant to purchase shares of our common stock, vesting annually over four years.

We intend to retain an outside consulting firm to evaluate compensation parameters for our non-executive directors after the completion of this offering.

Each of these options will be granted with an exercise price equal to the fair market value of our common stock on the date of such grant.

## EXECUTIVE COMPENSATION

As an emerging growth company, we have opted to comply with the executive compensation disclosure rules applicable to "smaller reporting companies," as such term is defined in the rules promulgated under the Securities Act of 1933, as amended, or the Securities Act, which require compensation disclosure for our principal executive officer and the two most highly compensated executive officers other than our principal executive officer. Our named executive officers for the year ended December 31, 2013 are:

- Ernest Mario, Ph.D., our Chairman and Former Chief Executive Officer;
- Anish Bhatnagar, M.D. our Chief Executive Officer, President and Chief Operating Officer;
- Anthony Wondka, our Vice President, Research & Development; and
- Antoun Nabhan, J.D., our Vice President of Corporate Development.

Throughout this section, we refer to these four officers as our named executive officers.

The Summary Compensation Table below sets forth information regarding the compensation awarded to or earned by our named executive officers during the year ended December 31, 2013.

**2013 Summary compensation table**

| Name and principal position | Year | Salary | Option awards(1) | Non-equity incentive plan compensation | All Other Compensation | Total |
|---|---|---|---|---|---|---|
| Ernest Mario(2)<br>Chairman (was Chief Executive Officer as of December 31, 2013) | 2013 | $ — | $ — | $ — | $ — | $ — |
| Anish Bhatnagar(3)<br>Chief Executive Officer, President and Chief Operating Officer (was President and Chief Operating Officer as of December 31, 2013) | 2013 | $374,063 | $ — | $ — | $ — | $374,063 |
| Anthony Wondka<br>Vice President, Research & Development | 2013 | $125,333 | $ — | $ — | $ — | $125,333 |
| Antoun Nabhan(4)<br>Vice President of Corporate Development | 2013 | $ — | — | — | $ 4,000 | $ 4,000 |

(1) The amounts in this column reflect the aggregate grant date fair value of each option award granted during the fiscal year ended December 31, 2013, computed in accordance with FASB ASC Topic 718. The valuation assumptions used in determining such amounts are described in Note 6 and Note 9 to our financial statements included in this prospectus.

(2) Dr. Mario was our Chief Executive Officer as of December 31, 2013. On February 6, 2014. Dr. Mario was appointed as our Executive Chairman, and subsequently our Chairman, and Dr. Bhatnagar succeeded him as our Chief Executive Officer.

(3) Dr. Bhatnagar was our President and Chief Operating Officer as of December 31, 2013. On February 6, 2014, Dr. Bhatnagar was appointed as our Chief Executive Officer following Dr. Mario's appointment as our Executive Chairman.

(4) Mr. Nabhan served as a consultant upon joining our company in 2013. Accordingly, Mr. Nabhan did not receive any base salary for 2013, but received payment of consulting fees for services rendered to our company during 2013.

**Employment offer letters**

We have entered into employment offer letters with each of our named executive officers. The offer letters provide for "at-will" employment and set forth the terms and conditions of employment, including annual base salary, target bonus opportunity, equity compensation, severance benefits and eligibility to participate in our employee benefit plans and programs. In connection with their employment, our named executive officers were each also required to execute our standard proprietary information and inventions agreement. The material terms of these offer letters are summarized below. These summaries are qualified in their entirety by reference to the actual text of the offer letters, which are filed as exhibits to the registration statement of which this prospectus is a part.

***Agreement with Ernest Mario***

We entered into an offer letter with Dr. Mario, dated June 22, 2007, pursuant to which Dr. Mario served as our Chief Executive Officer. The agreement provided for "at-will" employment and sets forth certain agreed upon terms and conditions of employment.

***Agreement with Anish Bhatnagar***

We entered into an employment agreement with Dr. Bhatnagar, dated April 26, 2010, pursuant to which Dr. Bhatnagar serves as our President and Chief Executive Officer. The agreement provides for "at-will" employment and sets forth certain agreed upon terms and conditions of employment. Dr. Bhatnagar's current annual base salary is $393,750.

***Agreement with Anthony Wondka***

We entered into an offer letter with Mr. Wondka, dated May 29, 2013, pursuant to which Mr. Wondka serves as our Vice President of Research and Development. The agreement provides for "at-will" employment and sets forth certain agreed upon terms and conditions of employment. Mr. Wondka's current annual base salary is $235,000.

***Agreement with Antoun Nabhan***

We entered into an offer letter with Mr. Nabhan, dated April 17, 2014, pursuant to which Mr. Nabhan serves as our Vice President of Corporate Development. The agreement provides for "at-will" employment and sets forth certain agreed upon terms and conditions of employment. Mr. Nabhan's current annual base salary is $225,000.

**Potential payments and benefits upon termination or change of control**

***Dr. Bhatnagar***. Pursuant to Dr. Bhatnagar's employment agreement, if Dr. Bhatnagar's employment is terminated without Cause by us (or our successor company) apart from a Change of Control (as defined in Dr. Bhatnagar's employment agreement) within two months prior to a Change of Control or within twelve months following a Change of Control, and if he executes and does not revoke a release of claims within 60 days following the date of his termination, Dr. Bhatnagar will be entitled to: (a) a lump sum severance payment equal to twelve months' of Dr. Bhatnagar's then current base salary; and (b) reimbursement for the cost of Dr. Bhatnagar's continued coverage under our employee benefit plans for a period ending on the earlier of twelve months following the date of the termination of his employment or the date on which he becomes eligible for coverage under similar employee benefit plans. In addition, pursuant to Dr. Bhatnagar's employment agreement, if, in the event of a Change of Control, Dr. Bhatnagar's employment is terminated without cause by us (or our successor company) or Dr. Bhatnagar resigns for Good Reason (as defined in Dr. Bhatnagar's employment agreement), and if he executes and does not revoke a release of claims within 60 days following the date of his

termination, Dr. Bhatnagar will be entitled to: (i) a lump sum severance payment equal to eighteen months' of Dr. Bhatnagar's then current base salary; (ii) a lump sum payment equal to the pro-rated portion of Dr. Bhatnagar's target bonus for the year of his termination; and (c) reimbursement for the cost of Dr. Bhatnagar's continued coverage under our employee benefit plans for a period ending on the earlier of eighteen months following the date of the termination of his employment or the date on which he becomes eligible for coverage under similar employee benefit plans.

**Outstanding equity awards at December 31, 2013**

The following table provides information regarding outstanding equity awards held by our named executive officers as of December 31, 2013.

| Name | Grant date | Number of Securities Underlying Unexercised Options | | Option Exercise Price | Option Expiration Date |
|---|---|---|---|---|---|
| | | Exercisable | Unexercisable | | |
| Anish Bhatnagar | 6/8/2006 | 62,500(1)(3) | — | $ 0.29 | 6/8/2016 |
| Anish Bhatnagar | 3/14/2007 | 50,000(1)(2) | — | $ 0.88 | 3/14/2017 |
| Anish Bhatnagar | 9/25/2007 | 12,500(1)(3) | — | $ 0.88 | 9/25/2017 |
| Anish Bhatnagar | 6/27/2008 | 140,000(1)(3) | — | $ 0.88 | 9/25/2018 |
| Anish Bhatnagar | 10/15/2008 | 100,000(1)(3) | — | $ 0.29 | 10/15/2018 |
| Anish Bhatnagar | 6/3/2010 | 701,030(1)(3) | — | $ 0.10 | 6/3/2020 |
| Anthony Wondka | — | — | — | $ — | — |
| Antoun Nabhan | — | — | — | $ — | — |

(1) The options listed are fully vested or are subject to an early exercise right and may be exercised in full prior to vesting of the shares underlying such options. Vesting of all options is subject to continued service on each vesting date.

(2) The shares subject to the stock option vest over a four-year period as follows: 25% of the shares underlying the options vest on the one-year anniversary of the vesting commencement date and thereafter 1/48th of the shares vest each month, subject to the continued service with us through each vesting date.

(3) The shares subject to the stock option vest over a four-year period as follows: 1/48th of the shares vest each month, subject to the continued service with us through each vesting date.

**Employee Benefits and Stock Plans**

***2014 Equity Incentive Plan***

Our board of directors intends to adopt our 2014 Equity Incentive Plan, or the 2014 Plan before the completion of this offering, and we also expect our stockholders will approve it before the completion of this offering. Subject to stockholder approval, the 2014 Plan will be effective immediately before the completion of this offering and is not expected to be utilized until after the completion of this offering. Our 2014 Plan will provide for the grant of incentive stock options (within the meaning of Section 422 of the Code to our employees and any of our parent and subsidiary corporations' employees, and for the grant of nonstatutory stock options, or NSOs, restricted stock, restricted stock units, stock appreciation rights, performance units and performance shares to our employees, directors and consultants, and our parent and subsidiary corporations' employees and consultants.

***Authorized Shares***. A total of 8,125,000 shares of our common stock will be reserved for issuance pursuant to the 2014 Plan, of which no awards are issued and outstanding. In addition, the shares reserved for issuance under our 2014 Plan will also include: (a) those shares reserved but unissued under our 2010 Plan (as defined below) as of the effective date described above; and (b) shares returned to our 1999 Plan and 2010 Plan as the result of expiration or termination of options (provided that the maximum number of shares that may be added to the 2014 Plan pursuant to (a) and (b) is 4,373,382 shares). The number of shares available for issuance under the 2014 Plan will also include an annual increase on the first day of each year beginning in 2015, equal to the least of:

- shares;

- 4.0% of the outstanding shares of common stock as of the last day of our immediately preceding year; or
- such other amount as our board of directors may determine.

Our compensation committee will administer our 2014 Plan after the completion of this offering. In the case of options intended to qualify as "performance-based compensation" within the meaning of Section 162(m) of the Code, the committee will consist of two or more "outside directors" within the meaning of Section 162(m) of the Code.

***Plan Administration***. Subject to the provisions of our 2014 Plan, the administrator will have the power to determine the terms of the awards, including the exercise price, the number of shares subject to each such award, the exercisability of the awards, and the form of consideration, if any, payable upon exercise. The administrator also will have the authority to amend existing awards to reduce their exercise price, to allow participants the opportunity to transfer outstanding awards to a financial institution or other person or entity selected by the administrator and to institute an exchange program by which outstanding awards may be surrendered in exchange for awards with a higher or lower exercise price.

***Stock Options***. The exercise price of options granted under our 2014 Plan must at least be equal to the fair market value of our common stock on the date of grant. The term of an incentive stock option may not exceed ten years, except that with respect to any participant who owns more than 10% of the voting power of all classes of our outstanding stock, the term must not exceed five years and the exercise price must equal at least 110% of the fair market value on the grant date. Subject to the provisions of our 2014 Plan, the administrator will determines the term of all other options.

After the termination of service of an employee, director or consultant, he or she may exercise his or her option or stock appreciation right for the period of time stated in his or her award agreement. Generally, if termination is due to death or disability, the option or stock appreciation right will remain exercisable for twelve months. In all other cases, the option or stock appreciation right will generally remain exercisable for three months following the termination of service. However, in no event may an option be exercised later than the expiration of its term.

***Stock Appreciation Rights***. Stock appreciation rights may be granted under our 2014 Plan. Stock appreciation rights allow the recipient to receive the appreciation in the fair market value of our common stock between the exercise date and the date of grant. Subject to the provisions of our 2014 Plan, the administrator will determine the terms of stock appreciation rights, including when such rights become exercisable and whether to pay any increased appreciation in cash or with shares of our common stock, or a combination thereof, except that the per share exercise price for the shares to be issued pursuant to the exercise of a stock appreciation right will be no less than 100% of the fair market value per share on the date of grant.

***Restricted Stock***. Restricted stock may be granted under our 2014 Plan. Restricted stock awards are grants of shares of our common stock that vest in accordance with terms and conditions established by the administrator. The administrator will determine the number of shares of restricted stock granted and may impose whatever conditions to vesting it determines to be appropriate (for example, the administrator may set restrictions based on the achievement of specific performance goals or continued service to us). The administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. Shares of restricted stock that do not vest are subject to our right of repurchase or forfeiture.

***Restricted Stock Units***. Restricted stock units may be granted under our 2014 Plan. Restricted stock units are bookkeeping entries representing an amount equal to the fair market value of one share of our common stock. The administrator will determine the terms and conditions of restricted stock units, including the number of units granted, the vesting criteria (which may include accomplishing specified performance criteria or continued service to us), and the form and timing of payment. The administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed.

***Performance Units and Performance Shares***. Performance units and performance shares may be granted under our 2014 Plan Performance units and performance shares are awards that will result in a payment to a participant only if performance goals established by the administrator are achieved or the awards otherwise vest. The administrator will establish organizational or individual performance goals in its discretion, which, depending on the extent to which they are met, will determine the number or the value of performance units and performance shares to be paid out to participants. After the grant of a performance unit or performance share, the administrator, in its sole discretion, may reduce or waive any performance objectives or other vesting provisions for such performance units or performance shares. The administrator, in its sole discretion, may pay earned performance units or performance shares in the form of cash, in shares, or in some combination thereof.

***Non-Employee Directors***. Our 2014 Plan will provide that all non-employee directors will be eligible to receive all types of awards (except for ISOs) under the 2014 Plan. Please see the description of our non-employee director compensation above under "Management—Non-Employee Director Compensation."

***Non-Transferability of Awards***. Unless the administrator provides otherwise, our 2014 Plan generally will not allow for the transfer of awards, and only the recipient of an award may exercise an award during his or her lifetime.

***Certain Adjustments***. In the event of certain changes in our capitalization, to prevent diminution or enlargement of the benefits or potential benefits available under the 2014 Plan, the administrator will adjust the number and class of shares that may be delivered under the 2014 Plan or the number, class and price of shares covered by each outstanding award, and the numerical share limits set forth in the 2014 Plan.

***Merger or Change in Control***. Our 2014 Plan will provide that in the event of a merger or change in control, as defined in the 2014 Plan, each outstanding award will be treated as the administrator determines, including that the successor corporation or its parent or subsidiary will assume or substitute an equivalent award for each outstanding award. The administrator will not be required to treat all awards similarly. If there is no assumption or substitution of outstanding awards, the awards will fully vest, all restrictions will lapse, all performance goals or other vesting criteria will be deemed achieved at 100% of target levels and the awards will become fully exercisable.

***Option Grant Commitments***

In May 2014, our board of directors approved granting stock options to certain of our executive officers and directors, pursuant to our 2014 Plan, contingent and effective upon the closing of this offering. Each recipient will receive an option to purchase that number of shares of the our common stock sufficient to constitute that percentage of the Company's total fully-diluted equity capitalization then outstanding, including previously granted equity, as shown alongside the name of each individual as follows:

| | |
|---|---|
| Ernest Mario | 1.0% |
| Anish Bhatnagar | 4.0% |
| Anthony Wondka | 0.6% |
| Antoun Nabhan | 0.5% |

Each of these options shall vest over a four-year period. The exercise price for these option grants shall be the offering price of our shares of common stock underlying the units sold in this offering.

***2014 Employee Stock Purchase Plan***

Our board of directors intends to adopt the 2014 Employee Stock Purchase Plan, or the ESPP before the completion of this offering, and we also expect our stockholders will approve it before the completion of this

offering. Subject to stockholder approval, the ESPP will be effective immediately prior to the completion of this and with our board of directors implementing offers thereunder its discretion after the completion of this offering.

***Authorized Shares***. A total of shares of our common stock will be made available for sale under the ESPP. In addition, our ESPP will provide for annual increases in the number of shares available for issuance under the plan on the first day of each year beginning in the year following the initial date that our board of directors authorizes commencement, equal to the least of:

- % of the outstanding shares of our common stock on the first day of such year;
- shares; or
- such amount as determined by our board of directors.

***Plan Administration***. Our compensation committee will administer the ESPP, and will have full and exclusive authority to interpret the terms of the plan and determine eligibility to participate, subject to the conditions of the plan as described below.

***Eligibility***. Generally, all of our employees will be eligible to participate if they are employed by us, or any participating subsidiary, for at least 20 hours per week and more than five months in any calendar year. However, an employee may not be granted rights to purchase stock under the ESPP if such employee:

- immediately after the grant would own stock possessing 5% or more of the total combined voting power or value of all classes of our capital stock; or
- hold rights to purchase stock under all of our employee stock purchase plans that accrue at a rate that exceeds $25,000 worth of stock for each calendar year.

***Offering Periods***. Our ESPP is intended to qualify under Section 423 of the Code. Each offering period includes purchase periods, which will be the approximately six months commencing with one exercise date and ending with the next exercise date. The offering periods are scheduled to start on the first trading day on or after and of each year, except for the first offering period, which will commence on the first trading day on or after completion of this offering and will end on the first trading day on or after , 2014.

Our ESPP will permit participants to purchase shares of common stock through payroll deductions of up to % of their eligible compensation. A participant may purchase a maximum of shares during a six-month period.

***Exercise of Purchase Right***. Amounts deducted and accumulated by the participant will be used to purchase shares of our common stock at the end of each six month purchase period. The purchase price of the shares will be % of the lower of the fair market value of our common stock on the first trading day of each offering period or on the exercise date. If the fair market value of our common stock on the exercise date is less than the fair market value on the first trading day of the offering period, participants will be withdrawn from the current offering period following their purchase of shares on the purchase date and will be automatically re-enrolled in a new offering period. Participants may end their participation at any time during an offering period and will be paid their accrued contributions that have not yet been used to purchase shares of common stock. Participation ends automatically upon termination of employment with us.

***Non-Transferability***. A participant may not transfer rights granted under the ESPP. If the compensation committee permits the transfer of rights, it may only be done by will, the laws of descent and distribution, or as otherwise provided under the ESPP.

***Merger or Change in Control***. In the event of our merger or change in control, as defined under the ESPP, a successor corporation may assume or substitute each outstanding purchase right. If the successor

corporation refuses to assume or substitute for the outstanding purchase right, the offering period then in progress will be shortened, and a new exercise date will be set. The administrator will notify each participant that the exercise date has been changed and that the participant's option will be exercised automatically on the new exercise date unless prior to such date the participant has withdrawn from the offering period.

***Certain Adjustments***. In the event of certain changes in our capitalization, to prevent dilution or enlargement of the benefits or potential benefits available under the ESPP, the administrator will adjust the number and class of shares that may be delivered under the ESPP, the purchase price per share and the number of shares covered by each option and the numerical share limits set forth in the ESPP.

***Amendment; Termination***. Our ESPP will automatically terminate in 2034, unless we terminate it sooner. Our board of directors has the authority to amend, suspend, or terminate our ESPP, except that, subject to certain exceptions described in the ESPP, no such action may adversely affect any outstanding rights to purchase stock under our ESPP.

***Employee benefit plans***

Our named executive officers are eligible to participate in our employee benefit plans, including our medical, dental, vision, group life, and accidental death and dismemberment insurance plans, in each case, on the same basis as all of our other employees. We maintain a 401(k) plan for the benefit of our eligible employees, including our named executive officers, as discussed in the section below entitled "Employee benefit plans—401(k) Plan."

***1999 Stock Plan***

Our board of directors and stockholders adopted our 1999 Incentive Stock Plan, or the 1999 Plan, in October 1999. Our 1999 Plan provided for the grant of nonstatutory stock options, or NSOs, and stock purchase rights to employees and consultants of ours or any parent or subsidiary of ours and to our directors. Our 1999 Plan also provided for the grant of incentive stock options, or ISOs (within the meaning of Section 422 of the Code), to employees of ours or any parent or subsidiary of ours. Our 1999 Stock Plan expired by its terms on October 5, 2009 and, accordingly, no further grants will be made under our 1999 Stock Plan. However, any outstanding awards granted under our 1999 Plan will remain outstanding, subject to the terms of our 1999 Plan and the applicable award agreements, until such awards are exercised or otherwise terminate or expire by their terms.

***Authorized shares***. Prior to the expiration of the 1999 Plan, the maximum number of shares of our common stock reserved for issuance under our 1999 Plan was 2,231,962 shares, measured on a pre-forward stock split basis. As of June 30, 2014, options to purchase 1,850,020 shares of our common stock remained outstanding under the 1999 Plan.

Shares issued under our 1999 Plan included any authorized but unissued or reacquired shares of our common stock.

***Plan administration***. Our board of directors, or a duly authorized committee of our board of directors, may administer our 1999 Plan. Subject to the terms of our 1999 Plan, the administrator has the authority to determine the terms of awards, including recipients, the exercise or purchase price of the awards (if any), the number of shares subject to awards, the vesting schedule applicable to the awards, and any transfer restrictions or rights of repurchase. Additionally, the administrator has the authority to determine the fair market value of our common stock, to determine whether and under what circumstances an option may be settled in cash instead of common stock, to reduce the exercise price of an option to the then-current fair market value of our common stock, to initiate an option exchange program whereby outstanding options are exchanged for options with a lower exercise price, and to allow optionees to satisfy withholding tax obligations by electing to have us withhold otherwise deliverable shares. The administrator also has the authority to prescribe, amend, and rescind rules and

regulations relating to the 1999 Plan and to construe and interpret the terms of the 1999 Plan and awards granted pursuant to the 1999 Plan. All decisions, interpretations and other actions of our board of directors will be final and binding.

***Stock Options***. Stock options could be granted under the 1999 Plan. The exercise price of nonstatutory stock options granted under our 1999 Plan must at least be equal to 85% of the fair market value of our common stock on the date of grant, and the exercise price of incentive stock options granted under our 1999 Plan must at least be equal to the fair market value of our common stock on the date of grant, except that with respect to any participant who owns more than 10% of the voting power of all classes of our outstanding stock, the exercise price of any option must equal at least 110% of the fair market value on the grant date. The term of a stock option may not exceed 10 years, except that with respect to any participant who owns more than 10% of the voting power of all classes of our outstanding stock, the term of an incentive stock option must not exceed 5 years. The administrator will determine the methods of payment of the exercise price of an option, which may include cash, shares or other property acceptable to the administrator, as well as other types of consideration permitted by applicable law. After the termination of service of an employee, director or consultant, he or she may exercise his or her option for the period of time stated in his or her option agreement. Generally, if termination is due to death or disability, the option will remain exercisable for 12 months. In all other cases, the option will generally remain exercisable for three months following the termination of service. However, in no event may an option be exercised later than the expiration of its term. Subject to the provisions of our 1999 Plan, the administrator determined the other terms of options.

***Stock Purchase Rights***. Restricted stock could be issued pursuant to the exercise or stock purchase rights granted under our 1999 Plan. Restricted stock consists of shares of our common stock that vest in accordance with terms and conditions established by the administrator. The administrator determined the number of shares of restricted stock granted to any employee, director or consultant and, subject to the provisions of our 1999 Plan, determined the terms and conditions of such awards. The administrator could impose whatever conditions to vesting it determined to be appropriate (for example, the administrator may have set restrictions based on the achievement of specific performance goals or continued service to us); provided, however, that the administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. Holders of restricted stock generally have voting and dividend rights with respect to such shares upon issuance without regard to vesting, unless the administrator provided otherwise. Shares of restricted stock that do not vest are subject to our right of repurchase or forfeiture.

***Non-Transferability of Awards***. Our 1999 Plan does not allow for the transfer of awards, and only the recipient of an award may exercise an award during his or her lifetime.

***Certain Adjustments.*** In the event of certain changes in our capitalization, to prevent diminution or enlargement of the benefits or potential benefits available under the 1999 Plan, the administrator will adjust the number and class of shares that may be delivered under the 1999 Plan or the number, class and price of shares covered by each outstanding award.

***Dissolution or Liquidation***. In the event of our proposed dissolution or liquidation, the administrator will notify participants as soon as practicable. The administrator may allow for awards to be exercised until 15 days prior to such transaction as to all of the shares subject to such awards, including shares which would not otherwise be exercisable. In addition, the administrator may provide that any repurchase option of ours will lapse, so long as the proposed dissolution or liquidation takes place at the time and in the manner contemplated. All awards will terminate immediately prior to the consummation of such proposed transaction.

***Merger or Asset Sale***. Our 1999 Plan provides that in the event of a merger or sale of substantially all of the assets of our company, each outstanding award will be assumed or an equivalent award will be substituted by the successor corporation or its parent or subsidiary. If the successor corporation or its parent or subsidiary does not assume or substitute an equivalent award for any outstanding award, then such award will fully vest, and the

administrator will notify the holder of the award that such award will be fully exercisable for a period of 15 days from the date of such notice. The award will then terminate upon the expiration of the specified period of time.

***Plan amendment or termination***. Our board of directors has the authority to amend our 1999 Plan, provided that such action does not impair the existing rights of any participant without such participant's written consent.

***2010 Stock Plan***

Our board of directors and stockholders adopted our 2010 Plan in May 2010. Our 2010 Plan provides for the grant of NSOs, stock appreciation rights, restricted stock, and restricted stock units to employees and consultants of ours or any parent or subsidiary of ours and to our directors. Our 2010 Plan also provides for the grant of ISOs (within the meaning of Section 422 of the Code) to employees of ours or any parent or subsidiary of ours. Our 2010 Stock Plan will be terminated in connection with our initial public offering, and accordingly, no further grants will be made under our 2010 Plan. However, any outstanding awards granted under our 2010 Plan will remain outstanding, subject to the terms of our 2010 Plan and the applicable award agreements, until such awards are exercised or otherwise terminate or expire by their terms.

***Authorized shares***. Prior to the termination of the 2010 Plan, the maximum number of shares of our common stock reserved for issuance under our 2010 Plan is 2,523,362 shares. As of June 30, 2014, options to purchase 989,230 shares of our common stock remain outstanding.

Shares issued under our 2010 Plan include any authorized but unissued or reacquired shares of our common stock.

***Plan administration***. Our board of directors, or a duly authorized committee of our board of directors, may administer our 2010 Plan. Subject to the terms of our 2010 Plan, the administrator will have the power to administer the 2010 Plan, including but not limited to the power to interpret the terms of the 2010 Plan and awards granted under it; to create, amend, and revoke rules relating to the 2010 Plan, including creating sub-plans; and to determine the terms of the awards, including the exercise price, the number of shares subject to each such award, the exercisability of the awards, and the form of consideration, if any, payable upon exercise. The administrator will also have the authority to amend existing awards to reduce or increase their exercise price, to allow participants the opportunity to transfer outstanding awards to a financial institution or other person or entity selected by the administrator, and to institute an exchange program by which outstanding awards may be surrendered in exchange for awards of the same type which may have a higher or lower exercise price or different terms, awards of a different type, or cash.

***Stock Options***. Stock options could be granted under the 2010 Plan. The exercise price of options granted under our 2010 Plan must at least be equal to the fair market value of our common stock on the date of grant. The term of a stock option may not exceed 10 years, except that with respect to an ISO granted to a participant who owns more than 10% of the voting power of all classes of our outstanding stock, the term must not exceed 5 years and the exercise price must equal at least 110% of the fair market value on the grant date. The administrator determined the methods of payment of the exercise price of an option, which may include cash, shares or other property acceptable to the administrator, as well as other types of consideration permitted by applicable law. After the termination of service of an employee, director or consultant, he or she may exercise his or her option for 30 days (or 6 months in the case of a termination due to death or disability) or such longer period of time stated in his or her option agreement. However, in no event may an option be exercised later than the expiration of its term. Subject to the provisions of our 2010 Plan, the administrator determines the other terms of options.

***Stock Appreciation Rights***. Stock appreciation rights could be granted under our 2010 Plan. Stock appreciation rights allow the recipient to receive the appreciation in the fair market value of our common stock between the exercise date and the date of grant. Stock appreciation rights may not have a term exceeding

10 years. After the termination of service of an employee, director or consultant, he or she may exercise his or her stock appreciation right for the period of time stated in his or her option agreement. However, in no event may a stock appreciation right be exercised later than the expiration of its term. Subject to the provisions of our 2010 Plan, the administrator determined the other terms of stock appreciation rights, including when such rights become exercisable and whether to pay any increased appreciation in cash or with shares of our common stock, or a combination thereof, except that the per share exercise price for the shares to be issued pursuant to the exercise of a stock appreciation right will be no less than 100% of the fair market value per share on the date of grant.

***Restricted Stock***. Restricted stock could be granted under our 2010 Plan. Restricted stock awards are grants of shares of our common stock that vest in accordance with terms and conditions established by the administrator. The administrator determines the number of shares of restricted stock granted to any employee, director or consultant and, subject to the provisions of our 2010 Plan, determined the terms and conditions of such awards. The administrator could impose whatever conditions to vesting it determined to be appropriate (for example, the administrator may have set restrictions based on the achievement of specific performance goals or continued service to us); provided, however, that the administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. Recipients of restricted stock awards generally have voting and dividend rights with respect to such shares upon grant without regard to vesting, unless the administrator provided otherwise. Shares of restricted stock that do not vest are subject to our right of repurchase or forfeiture.

***Restricted Stock Units***. Restricted stock units could be granted under our 2010 Plan. Restricted stock units are bookkeeping entries representing an amount equal to the fair market value of one share of our common stock. Subject to the provisions of our 2010 Plan, the administrator determined the terms and conditions of restricted stock units, including the vesting criteria (which may include accomplishing specified performance criteria or continued service to us) and the form and timing of payment. Notwithstanding the foregoing, the administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed.

***Non-Transferability of Awards***. Unless the administrator provided otherwise, our 2010 Plan generally does not allow for the transfer of awards and only the recipient of an award may exercise an award during his or her lifetime.

***Certain Adjustments***. In the event of certain changes in our capitalization, to prevent diminution or enlargement of the benefits or potential benefits available under the 2010 Plan, the administrator will adjust the number and class of shares that may be delivered under the Plan or the number, class, and price of shares covered by each outstanding award, and the numerical share limits set forth in the 2010 Plan. In the event of our proposed liquidation or dissolution, the administrator will notify participants as soon as practicable and all awards will terminate immediately prior to the consummation of such proposed transaction.

***Dissolution or Liquidation***. In the event of our proposed dissolution or liquidation, the administrator will notify participants as soon as practicable, and all awards will terminate immediately prior to the consummation of such proposed transaction.

***Change in control***. Our 2010 Plan provides that in the event of a change in control, as defined under our 2010 Plan, each outstanding award will be treated as the administrator determines, except that if a successor corporation or its parent or subsidiary does not assume or substitute an equivalent award for any outstanding award, then such award will fully vest, all restrictions on such award will lapse, all performance goals or other vesting criteria applicable to such award will be deemed achieved at 100% of target levels and such award will become fully exercisable, if applicable, for a specified period prior to the transaction. The award will then terminate upon the expiration of the specified period of time.

***Plan amendment or termination***. Our board of directors has the authority to amend our 2010 Plan, provided that such action does not impair the existing rights of any participant without such participant's written consent.

***401(k) plan***

We maintain a retirement savings plan, or 401(k) plan, that provides eligible U.S. employees with an opportunity to save for retirement on a tax advantaged basis. Under our 401(k) plan, eligible employees may defer eligible compensation subject to applicable annual contribution limits imposed by the Code. Employees' pre-tax contributions are allocated to each participant's individual account. Participants are immediately and fully vested in their contributions. We do not currently provide an employer match on employee contributions. The 401(k) plan is intended to be qualified under Section 401(a) of the Code with the 401(k) plan's related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan and earnings on those contributions are not taxable to the employees until distributed from the 401(k) plan.

**Limitation on Liability and Indemnification Matters**

Our amended and restated certificate of incorporation and amended and restated bylaws, each to be effective upon the completion of this offering, will provide that we will indemnify our directors and officers, and may indemnify our employees and other agents, to the fullest extent permitted by the Delaware General Corporation Law, which prohibits our amended and restated certificate of incorporation from limiting the liability of our directors for the following:

- any breach of the director's duty of loyalty to the corporation or its stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions; or
- any transaction from which the director derived an improper personal benefit.

If Delaware law is amended to authorize corporate action further eliminating or limiting the personal liability of a director, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law, as so amended. Our amended and restated certificate of incorporation does not eliminate a director's duty of care and in appropriate circumstances, equitable remedies, such as injunctive or other forms of non-monetary relief, remain available under Delaware law. This provision also does not affect a director's responsibilities under any other laws, such as the federal securities laws or other state or federal laws. Under our amended and restated bylaws, we will also be empowered to purchase insurance on behalf of any person whom we are required or permitted to indemnify.

In addition to the indemnification required in our amended and restated certificate of incorporation and amended and restated bylaws, we plan to enter into indemnification agreements with each of our current directors and officers before the completion of this offering. These agreements will provide indemnification for certain expenses and liabilities incurred in connection with any action, suit, proceeding, or alternative dispute resolution mechanism, or hearing, inquiry, or investigation that may lead to the foregoing, to which they are a party, or are threatened to be made a party, by reason of the fact that they are or were a director, officer, employee, agent, or fiduciary of our company, or any of our subsidiaries, by reason of any action or inaction by them while serving as an officer, director, agent, or fiduciary, or by reason of the fact that they were serving at our request as a director, officer, employee, agent, or fiduciary of another entity. In the case of an action or proceeding by, or in the right of, our company or any of our subsidiaries, no indemnification will be provided for any claim where a court determines that the indemnified party is prohibited from receiving indemnification. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers. We also maintain directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. A stockholder's investment may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions. Insofar as we may provide indemnification for liabilities arising under the Securities Act to our directors, officers, and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable. There is no pending litigation or proceeding naming any of our directors or officers as to which indemnification is being sought, nor are we aware of any pending or threatened litigation that may result in claims for indemnification by any director or officer.

## CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Other than compensation arrangements, we describe below transactions and series of similar transactions, since January 1, 2011, to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed $120,000; and
- any of our directors, executive officers, or holders of more than 5% of our capital stock, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest.

Compensation arrangements for our directors and named executive officers are described elsewhere in this prospectus.

**Private Placement Financings**

Over the past three years, following board and stockholder approval, we sold securities to certain private investors, including our directors and 5% stockholders and persons or entities associated with them.

In 2012, we sold convertible promissory notes in the initial and extension closings of a note and warrant financing with certain of our stockholders and their affiliates, in the aggregate original principal amount of approximately $5.0 million. Prior to our April 2014 convertible note and warrant financing, the notes we sold in 2012 have accrued simple interest at the rate 12% per annum, which amounts remain unpaid and, following the amendment of the notes in April 2014, unless earlier converted, two times the principal amount of the notes, together with accrued unpaid interest thereon, are due and payable on demand by the holders of two-thirds of the total principal amounts of the notes. In addition: (i) upon the occurrence of a convertible preferred stock financing which results in gross proceeds to us of at least $1.5 million (excluding the conversion of the notes), the notes are convertible into the series of convertible preferred stock sold in that financing at a price per share equal to 75% of the price per share paid by other investors in that financing; or (ii) if no such preferred stock financing which results in gross proceeds to us of at least $1.5 million (excluding conversion of the notes) occurs prior to the maturity date of the notes, the notes may be converted, at the election of each note holder, into either (1) shares of the series of securities sold in our next equity financing at a price per share equal to 75% of the price per share paid by other investors in that financing, or (2) shares of our Series C convertible preferred stock, at a price per share of $1.35 per share, in each case following the maturity date of the notes. Finally, pursuant to the terms of the 2012 note and warrant purchase agreement, as amended, that we entered into with the note holders, the note holders are also entitled to receive, upon conversion of the 2012 notes, warrants to purchase the number of shares equal to 25% of the aggregate principal value of such note, divided by the note conversion price per share. The warrants have a term of the earlier of (1) ten years, (2) a Change of Control (as defined in the notes), or (3) immediately prior to the closing of a Qualified IPO (as defined in our amended and restated certificate of incorporation). These 2012 convertible promissory notes and warrants associated therewith were subsequently amended in May 2014 to provide for the conversion of these notes into shares of our common stock in connection with this offering, at a discount of 25% of the public offering price of the common stock, and exercise of the associated warrants for shares of our common stock with an exercise price of 75% of the public offering price of the common stock.

In April 2014, we sold convertible promissory notes to certain of our existing stockholders and their affiliates, in the aggregate original principal amount of approximately $1.8 million. The maturity date of these notes is September 30, 2015 or upon an occurrence of demand, made after September 30, 2015, by the holders of two-thirds of the total principal amounts of the notes. The notes are unsecured and bear interest as follows: (i) if this offering is completed, simple interest at the rate of 2% per annum; or (ii) if a convertible preferred stock financing occurs before the completion of this offering, or if neither this offering nor a convertible preferred stock financing is completed before the maturity date of the notes, at the rate of 12% per annum. The notes are convertible as follows: (i) if this offering is completed, the notes will automatically convert into units at a

discount of 30% of the public offering price of the units; or (ii) (A) if a convertible preferred stock financing which results in gross proceeds to us of at least $1.5 million (excluding the conversion of the notes) occurs prior to this offering being completed, the notes will automatically convert into the series of stock sold in that financing at a price per share equal to 75% of the price per share paid by other investors in that financing, or (B) if no such equity financing results in gross proceeds to us of at least $1.5 million (excluding conversion of the notes) occurs prior the maturity date of the notes, the notes may be converted, at the election of each note holder, into either (1) shares of the series of convertible preferred stock sold in our next preferred stock financing at a price per share equal to 75% of the price per share paid by other investors in such financing, or (2) shares of our Series C convertible preferred stock, at a price per share of $1.35 per share, in each case following the maturity date of the notes. Finally, pursuant to the terms of the 2014 note and warrant purchase agreement that we entered into with the note holders, the note holders are also entitled to receive, upon any conversion of the 2014 convertible promissory notes other than in connection with this offering, warrants to purchase the number of shares equal to 25% of the aggregate principal value of such note, divided by the note conversion price per share. The warrants have a term of the earlier of (1) ten years, (2) a Change of Control (as defined in the notes), or (3) immediately prior to the closing of a Qualified IPO (as defined in our amended and restated certificate of incorporation, but excluding this offering).

The following table summarizes purchases since January 1, 2011 of our convertible promissory notes by our executive officers, directors and holders of more than 5% of our capital stock:

| Stockholder | Aggregate principal amount of promissory notes purchased | Aggregate exercise price of warrants |
|---|---|---|
| Entities Associated with Vivo Ventures Fund V, L.P.(1) | $ 3,220,761.75 | |
| Entities Associated with Teknoinvest VIII KS(2) | $ 4,270.97 | |
| Ernest Mario, Ph.D.(3) | $ 426,957.58 | |

(1) The purchasers were (a) BDF IV Annex Fund, L.P., which purchased notes with an aggregate value of $15,901.41, (b) Biotechnology Development Fund IV, L.P. which purchased notes with an aggregate value of $3,795.62, (c) Biotechnology Development Fund IV Affiliates, L.P. which purchased notes with an aggregate value of $70.00, (d) Vivo Ventures Fund V, L.P. which purchased notes with an aggregate value of $3,163,863.39 and (e) Vivo Ventures Fund Affiliates V, LP which purchased notes with an aggregate value of $37,131.33. Edgar Engleman, M.D., a member of our board of directors is affiliated with BDF IV Annex Fund, L.P., Biotechnology Development Fund IV, L.P, Biotechnology Development Fund IV Affiliates, Vivo Ventures Fund V, L.P. and Vivo Ventures Fund Affiliates V, LP.

(2) The purchaser was Steinar J. Engelsen, a member of our board of directors who is affiliated with Teknoinvest VIII KS.

(3) The purchaser was Mario Family Partners LP. Ernest Mario, a member of our board of directors is affiliated with Mario Family Partners L.P.

**Investor Rights Agreement**

We are party to an investor rights agreement that provides holders of our convertible preferred stock, including certain holders of 5% of our capital stock and entities affiliated with certain of our directors, with certain registration rights, including the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we are otherwise filing. The investor rights agreement also provides for a right of first refusal in favor of certain holders of our stock with regard to certain issuances of our capital stock. The rights of first refusal will not apply to, and will terminate upon, the closing of this offering. For a more detailed description of these registration rights, see the section of this prospectus entitled “Description of Securities—Registration Rights.”

**Voting Agreement**

We are party to a voting agreement under which certain holders of our capital stock, including certain holders of 5% of our capital stock and entities affiliated with certain of our directors, have agreed to vote in a

certain way on certain matters, including with respect to the election of directors. Upon the closing of this offering, the voting agreement will terminate, and none of our stockholders will have any special rights regarding the election or designation of members of our board of directors.

**Right of First Refusal and Co-Sale Agreement**

We are party to a right of first refusal and co-sale agreement with holders of our convertible preferred stock and our founders, including certain holders of 5% of our capital stock and entities affiliated with certain of our directors, pursuant to which the holders of convertible preferred stock have a right of first refusal and co-sale in respect of certain sales of securities by our founders. Upon the closing of this offering, the right of first refusal and co-sale agreement will terminate.

**Indemnification Agreements**

Our amended and restated certificate of incorporation, which will be effective upon the closing of this offering, will contain provisions limiting the liability of directors and our amended and restated bylaws will provide that we will indemnify each of our directors to the fullest extent permitted under Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws also will provide our board of directors with discretion to indemnify our officers and employees when determined appropriate by our board of directors. In addition, we have entered and expect to continue to enter into agreements to indemnify our directors and executive officers. For more information regarding these agreements, see the section of this prospectus entitled “Executive compensation—Limitations on liability and indemnification matters.”

**Change in Control Arrangements**

We have entered into change in control severance benefits arrangements with certain of our executive officers, as described in greater detail in the section of this prospectus titled “Executive compensation—Potential payments and benefits upon termination or change of control.”

**Stock Option Grants to Executive Officers**

We have granted stock options and committed to grant additional stock options to our executive officers and certain of our directors. For a description of the options that are currently outstanding, see “Executive Compensation— Outstanding equity awards at December 31, 2013,” “Executive Compensation—Employee Benefits and Stock Plans” and “Management—Non-Employee Director compensation.”

**Offer Letters**

We have entered into employment agreements or offer letters and other arrangements containing compensation, termination and change of control provisions, among others, with certain of our executive officers as described under the caption “Executive Compensation—Employee Offer Letters” above.

Other than as described above, there has not been, nor is there any currently proposed, transactions or series of similar transactions to which we have been or will be a party other than compensation arrangements, which are described where required under “Executive Compensation.”

**Consulting Services Provided by Antoun Nabhan**

Antoun Nabhan was a consultant to us from October 2013 to April 2014 and has been our Vice President of Corporate Development since April 2014. Consulting fees have been paid to Mr. Nabhan in consideration of certain business and financial consulting services provided by Mr. Nabhan. During the fiscal year ended December 31, 2013, we incurred cash consulting fees to Mr. Nabhan in the amount of $4,000. This consulting agreement has been superseded by our employment offer letter with Mr. Nabhan.

**Consulting Services Provided by Anthony Wondka**

Anthony Wondka was a consultant to us from May 2011 to June 2013 and has been our Vice President of Research and Development since June 2013. Consulting fees have been paid to Mr. Wondka in consideration of certain scientific consulting services provided by Mr. Wondka. During the fiscal years ended December 31, 2011, 2012, and 2013, we incurred cash consulting fees to Mr. Wondka in the amount of $127,794, $271,060 and $122,605, respectively. This consulting agreement has been superseded by our employment offer letter with Mr. Wondka.

**Policies and Procedures for Related Party Transactions**

Our board of directors will adopt a policy, effective upon the closing of this offering, that our executive officers, directors, nominees for election as a director, beneficial owners of more than 5% of any class of our common stock and any members of the immediate family of any of the foregoing persons are not permitted to enter into a related person transaction with us without the prior consent of our audit committee. Any request for us to enter into a transaction with an executive officer, director, nominee for election as a director, beneficial owner of more than 5% of any class of our common stock or any member of the immediate family of any of the foregoing persons in which the amount involved exceeds $120,000 and such person would have a direct or indirect interest must first be presented to our audit committee for review, consideration and approval. In approving or rejecting any such proposal, our audit committee is to consider the material facts of the transaction, including, but not limited to, whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related person's interest in the transaction. We did not have a formal review and approval policy for related party transactions at the time of any of the transactions described above. However, all of the transactions described above were entered into after presentation, consideration and approval by our board of directors, except as noted above.

## SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information with respect to the beneficial ownership of our common stock at June 30, 2014 and as adjusted to reflect the sale of common stock in this offering, for:

- each of our directors;
- each of our named executive officers;
- all of our current directors and executive officers as a group; and
- each person, or group of affiliated persons, who beneficially owned more than 5% of our common stock.

We have determined beneficial ownership in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Except as indicated by the footnotes below, we believe, based on information furnished to us, that the persons and entities named in the table below have sole voting and sole investment power with respect to all shares of common stock that they beneficially owned, subject to applicable community property laws.

Applicable percentage ownership is based on 16,814,111 shares of common stock outstanding at June 30, 2014 assuming the conversion of our convertible preferred stock into common stock. In computing the number of shares of common stock beneficially owned by a person and the percentage ownership of such person, we deemed to be outstanding all shares of common stock subject to options held by the person that are currently exercisable or exercisable within 60 days of June 30, 2014. However, we did not deem such shares outstanding for the purpose of computing the percentage ownership of any other person. In computing the number of shares of common stock beneficially owned by a person and the percentage ownership of such person, we included shares owned by a spouse, minor children and relatives sharing the same home, as well as other entities owned or controlled by the named person.

Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Capnia, Inc., 3 Twin Dolphin Drive, Suite 160, Redwood City, CA 94065.

| | Shares Beneficially Owned Prior to the Offering | | Shares Beneficially Owned After the Offering | |
|---|---|---|---|---|
| **Name of Beneficial Owner** | **Number of Shares** | **%** | **Number of Shares** | **%** |
| **5% Stockholders** | | | | |
| Entities Associated with Vivo Ventures Fund V, L.P.(1) | 6,656,742 | 39.59% | | |
| Entities Associated with Teknoinvest VIII KS(2) | 2,434,680 | 14.44% | | |
| Ernest Mario(3) | 1,796,627 | 10.11% | | |
| Asset Management Partners(4) | 1,089,323 | 6.48% | | |
| Anish Bhatnagar(5) | 1,066,030 | 5.96% | | |
| **Named Executive Officers and Directors:** | | | | |
| Ernest Mario(3) | 1,796,627 | 10.11% | | |
| Anish Bhatnagar(5) | 1,066,030 | 5.96% | | |
| Anthony Wondka(6) | 38,208 | * | | |
| Antoun Nabhan | — | * | | |
| Edgar G. Engleman(1)(7) | 6,717,267 | 39.81% | | |
| Steinar J. Engelsen(2)(8) | 2,443,574 | 14.49% | | |
| Stephen Kirnon(9) | 60,000 | * | | |
| William James Alexander(10) | 30,000 | * | | |
| William G. Harris | — | * | | |
| All current directors and executive officers as a group (9 Persons) | 12,151,706 | 71.13% | | |

* Represents beneficial ownership of less than one percent (1%).

(1) Represents: (a) 1,647,333 shares of common stock held by Vivo Ventures Fund, V, L.P.; (b) 19,333 shares of common stock held by Vivo Ventures V Affiliates Fund, LP.; (c) 2,388,490 shares of common stock held by BDF IV Annex Fund, L.P.; (d) 680,950 shares of common stock held by Biotechnology Development Fund II, L.P.; (e) 1,920,636 shares of common stock held by Biotechnology Development Fund IV, L.P., and (f) 35,495 shares of common stock held by Biotechnology Development Fund IV Affiliates, L.P. Vivo Ventures V LLC (Vivo V LLC), is the sole general partner of both of Vivo Ventures Fund V, L.P. and Vivo Ventures V Affiliates Fund, L.P. (Vivo V Funds), and may be deemed to beneficially own the Common Stock of Capnia owned by the Vivo V Funds. Vivo V LLC disclaims beneficial ownership of the shares of Capnia held by each of the Vivo V Funds, except to the extent of its pecuniary interest therein. BioAsia Investments IV, LLC (BAI IV), is the sole general partner of Biotechnology Development Fund IV , LP, Biotechnology Development Fund IV Affiliates , L.P., BDF IV Annex Fund, L.P. (BDF IV Funds) and may be deemed to beneficially own the Common Stock of Capnia owned by the BDF IV Funds. BAI IV disclaims beneficial ownership of the shares of Capnia held by each of the BDF IV Funds, except to the extent of its pecuniary interest therein. BioAsia Management, LLC (BAM), is the sole general partner of Biotechnology Development Fund II, L.P., (BDF II) may be deemed to beneficially own the Common Stock of Capnia owned by the BDF II. BAM disclaims beneficial ownership of the shares of Capnia held by each of the BDF II Funds, except to the extent of its pecuniary interest therein. Edgar G. Engleman M.D. is one of the managing members in Vivo V LLC, BAI IV and BAM and has the shared voting power with other managing members. The address for this stockholder is 575 High Street, Suite 201, Palo Alto, CA 94301.

(2) Represents: (a) 1,300,941 shares of common stock and 30,875 shares subject to options that are immediately exercisable or exercisable within 60 days of June 30, 2014 held by Teknoinvest VIII KS; and (b)1,081,864 shares of common stock and 21,0000 shares subject to options that are immediately exercisable or exercisable within 60 days of June 30, 2014 held by Teknoinvest VIII B (GP) AS. Steiner J. Engelsen is a Partner of Teknoinvest AS, that advises Teknoinvest VIII KS and Teknoinvest VIII B (GP) AS, and may be deemed to hold voting and dispositive control over the shares of Teknoinvest VIII KS and Teknoinvest VIII B (GP) AS.

(3) Represents 836,627 shares of common stock, 960,000 shares subject to options that are immediately exercisable or exercisable within 60 days of June 30, 2014 held by Dr. Mario.

(4) Represents 1,089,323 shares of common stock held by Asset Management Partners. The address for this stockholder is 2100 Geng Road, Palo Alto, CA 94303

(5) Represents 1,066,030 shares subject to option held by Dr. Bhatnagar that are immediately exercisable or exercisable within 60 days of June 30, 2014.

(6) Represents 38,208 shares subject to option held by Mr. Wondka that are immediately exercisable or exercisable within 60 days of June 30, 2014.

(7) Represents 60,000 shares subject to option held by Dr. Engleman that are immediately exercisable or exercisable within 60 days of June 30, 2014.

(8) Represents 8,894 shares of common stock held by Mr. Engelsen.

(9) Represents 60,000 shares subject to options held by Dr. Kirnon that are immediately exercisable or exercisable within 60 days of June 30, 2014.

(10) Represents 30,000 shares subject to options held by Dr. Alexander that are immediately exercisable or exercisable within 60 days of June 30, 2014.

## DESCRIPTION OF SECURITIES

### General

Upon the closing of this offering and the filing of our amended and restated certificate of incorporation, our authorized capital stock will consist of shares, all with a par value of $0.001 per share, all of which shall be designated as common stock.

The following description of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws that will be in effect upon the closing of this offering. Copies of these documents will be filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part. The descriptions of our capital stock reflect changes to our capital structure that will occur upon the closing of this offering.

As of June 30, 2014, we had outstanding 10,385,395 shares of convertible preferred stock, all of which will be converted into 10,385,395 shares of our common stock immediately prior to the closing of this offering, and 6,428,716 shares of our common stock. Our outstanding capital stock was held by 83 stockholders of record as of June 30, 2014. As of June 30, 2014, we also had outstanding options to acquire 2,891,125 shares of common stock held by employees, directors and consultants pursuant to our 1999 Plan, 2010 Plan, and certain stand-alone option agreements, having a weighted-average exercise price of $0.27358 per share, and warrants to purchase 111,111 shares of our convertible preferred stock. In addition, there are warrants outstanding that were issued in connection with our 2010/2012 convertible promissory notes that will be exercisable, following this offering, for shares of our common stock with an exercise price of 75% of the price of the common stock underlying the units sold in this offering.

### Units

Each unit consists of one share of common stock and a warrant to purchase one share of common stock. The units will automatically separate and each of the common stock and warrants will trade separately on the closing date of the initial public offering.

### Common Stock

As of June 30, 2014, there were 6,428,716 shares of common stock issued and outstanding that were held of record by 54 stockholders.

Holders of common stock are entitled to one vote per share on matters on which our stockholders vote. There are no cumulative voting rights. Subject to any preferential dividend rights of any outstanding shares of preferred stock, holders of common stock are entitled to receive dividends, if declared by our Board of Directors, out of funds that we may legally use to pay dividends. If we liquidate or dissolve, holders of common stock are entitled to share ratably in our assets once our debts and any liquidation preference owed to any then-outstanding preferred stockholders are paid. Our certificate of incorporation does not provide the common stock with any redemption, conversion or preemptive rights. All shares of common stock that are outstanding as of the date of this prospectus and, upon issuance and sale, all shares we are selling in this offering, will be fully-paid and nonassessable.

### Warrants Issued as Part of the Units

Each warrant entitles the holder to purchase one share of our common stock at an initial exercise price of $ (which is equal to 110% of the offering price of the common stock underlying the units). Each warrant will become exercisable immediately following issuance and will expire on , 2019.

The warrants will be represented issued in registered form, in each case pursuant to a warrant agreement between , as warrant agent, and us.

The exercise price and number of shares issuable upon exercise of the warrants may be adjusted upon the occurrence of certain events, including but not limited to any stock split, stock dividend, recapitalization, reorganization, merger or consolidation. However, the warrants will not be adjusted for issuances of common stock or securities convertible or exercisable into common stock at a price below the then current exercise price of the warrants.

The warrants may be exercised, at the option of each holder, in whole or in part, upon surrender of the warrant certificate on or prior to the expiration date at the offices of the warrant agent, with the exercise form on the reverse side of the warrant certificate completed and executed as indicated, accompanied by full payment of the exercise price for the number of shares of our common stock purchased upon such exercise, by certified check payable to us or by wire transfer of immediately available funds to an account designated by us. Subject to applicable laws, the warrants may be transferred at the option of the holders upon surrender of the warrants to us together with the appropriate instruments of transfer.

The warrant holders do not have the rights or privileges of holders of common stock and any voting rights until they exercise their warrants and receive shares of common stock. After the issuance of shares of common stock upon exercise of the warrants, each holder will be entitled to one vote for each share of common stock held of record on all matters to be voted on by stockholders.

No warrants will be exercisable unless at the time of exercise a prospectus relating to common stock issuable upon exercise of the warrants is current and the common stock has been registered or qualified or deemed to be exempt under the securities laws of the state of residence of the holder of the warrants. Under the terms of the warrant agreement, we have agreed to meet these conditions and use our best efforts to maintain a current prospectus relating to common stock issuable upon exercise of the warrants until the expiration of the warrants. However, we cannot assure you that we will be able to do so, and if we do not maintain a current prospectus related to the common stock issuable upon exercise of the warrants, holders will be unable to exercise their warrants and we will not be required to settle any such warrant exercise. If the prospectus relating to the common stock issuable upon the exercise of the warrants is not current or if the common stock is not qualified or exempt from qualification in the jurisdictions in which the holders of the warrants reside, we will not be required to net cash settle or cash settle the warrant exercise, the warrants may have no value, the market for the warrants may be limited and the warrants may expire worthless.

**Preferred Stock**

Our amended and restated certificate of incorporation, which will be effective upon the completion of this offering, will not provide for any shares of preferred stock.

**Other Warrants Outstanding Following the Offering**

As of June 30, 2014, we had outstanding warrants to purchase an aggregate of 111,111 shares of our Series C convertible preferred stock with an exercise price of $1.80 per share. In lieu of the warrant being exercised, the warrant may instead be net exercised into a number of shares of Series C convertible preferred stock determined by dividing: (a) the aggregate fair market value of the Series C convertible preferred stock issuable upon exercise of the warrant minus the aggregate warrant exercise price of such shares of Series C convertible preferred stock; by (b) the fair market value of one share of Series C convertible preferred stock. Unless earlier exercised, this warrant will expire on January 28, 2019; provided that if the holder of the warrant does not notify us of the holder intent to exercise or not to exercise the warrant prior to the expiration date, and the fair market value of the underlying shares on the expiration date is greater than the exercise price, then the holder will be deemed to have net exercised the warrant immediately prior to the expiration date. These warrants will automatically convert into warrants to purchase common stock immediately prior to the completion of this offering.

In addition, there are warrants outstanding that were issued in connection with our 2010/2012 convertible promissory notes that will be exercisable, following this offering, for shares of our common stock with an exercise price of 75% of the price of the common stock underlying the units sold in this offering.

**Registration Rights**

***Stockholder registration rights***

We are party to an investor rights agreement which provides that holders of shares of our convertible preferred stock have certain registration rights, as set forth below. The investor rights agreement has been amended or restated from time to time in connection with our preferred stock financings, most recently as of March 20, 2008. The registration of shares of our common stock pursuant to the exercise of registration rights described below would enable the holders to sell these shares without restriction under the Securities Act, when the applicable registration statement is declared effective. We will pay the registration expenses, other than underwriting discounts and commissions, of the shares registered pursuant to the demand, piggyback and Form S-3 registrations described below.

Generally, in an underwritten offering, the managing underwriter, if any, has the right, subject to specified conditions, to limit, or exclude entirely, the number of shares such holders may include. The demand, piggyback and Form S-3 registration rights described below terminate upon the earliest to occur of: (i) the date that is four years after the closing of this offering; (ii) with respect to each holder of convertible preferred stock, at such time as all such shares can be sold in a three-month period without registration in compliance with Rule 144; (iii) with respect to each stockholder, the date that the stockholder no longer holds any shares that carry these registration rights; or (iv) following termination of the investor rights agreement.

***Demand registration rights***

As of June 30, 2014, the holders of an aggregate of 10,496,506 shares of our common stock, issuable upon the conversion of outstanding convertible preferred stock and shares of convertible preferred stock currently subject to outstanding warrants will be entitled to certain demand registration rights. At any time beginning six months after the closing of our initial public offering, the holders of a majority of these shares may, on not more than two occasions, request that we file a registration statement having an aggregate offering price to the public of not less than $7,500,000 (net of underwriting discounts and commissions) to register all or a portion of their shares.

***Piggyback registration rights***

As of June 30, 2014, the holders of an aggregate of 10,496,506 shares of our common stock, issuable upon the conversion of outstanding convertible preferred stock and shares of convertible preferred stock currently subject to outstanding warrants were entitled to, and the necessary percentage of holders waived, their rights to include their shares of registrable securities in this offering. In the event that we propose to register any of our securities under the Securities Act, either for our own account or for the account of other security holders, the holders of these shares will be entitled to certain "piggyback" registration rights allowing them to include their shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act, including a registration statement on Form S-3 as discussed below, other than with respect to a demand registration or a registration statement on Forms S-4 or S-8, the holders of these shares are entitled to notice of the registration and have the right, subject to limitations that the underwriters may impose on the number of shares included in the registration, to include their shares in the registration. However, in no event shall the amount of securities of the selling stockholders included in the offering be reduced below thirty percent of the total amount of securities included in such offering, unless the offering is the initial public offering of our securities, in which case all shares may be excluded entirely.

***Form S-3 registration rights***

As of June 30, 2014, the holders of an aggregate of 10,496,506 shares of our common stock, issuable upon the conversion of outstanding convertible preferred stock and shares of convertible preferred stock currently subject to certain outstanding warrants, will be entitled to certain Form S-3 registration rights, provided that we have not already effected one such registration within the twelve-month period preceding the date of such request. Such holders may make a request that we register their shares on Form S-3 if we are qualified to file a registration statement on Form S-3. Such request for registration on Form S-3 must cover securities the aggregate offering price of which, net of underwriting discounts and commissions, is at least $1,000,000.

**Anti-takeover provisions**

***Certificate of incorporation and bylaws to be in effect upon the closing of this offering***

Our amended and restated certificate of incorporation to be in effect upon the completion of this offering will provide for our board of directors to be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, our stockholders holding a majority of the voting power of our shares of common stock outstanding will be able to elect all of our directors. The directors may be removed by the stockholders only for cause upon the vote of holders of a majority of the shares then entitled to vote at an election of directors. Furthermore, the authorized number of directors may be changed only by resolution of our board of directors, and vacancies and newly created directorships on our board of directors may, except as otherwise required by law or determined by our board, only be filled by a majority vote of the directors then serving on our board of directors, even though less than a quorum. Our amended and restated certificate of incorporation and amended and restated bylaws will provide that all stockholder actions must be effected at a duly called meeting of stockholders and not by a consent in writing. A special meeting of stockholders may be called only by a majority of our whole board of directors, the chair of our board of directors, our chief executive officer or our president. Our amended and restated bylaws also will provide that stockholders seeking to present proposals before a meeting of stockholders to nominate candidates for election as directors at a meeting of stockholders must provide timely advance notice in writing, and will specify requirements as to the form and content of a stockholder's notice.

Our amended and restated certificate of incorporation will further provide that, immediately after this offering, the affirmative vote of holders of at least 66 2/3% of the voting power of all of the then outstanding shares of voting stock, voting as a single class, will be required to amend certain provisions of our certificate of incorporation, including provisions relating to the structure of our board of directors, the size of our board of directors, removal of directors, special meetings of stockholders, actions by written consent and cumulative voting. The affirmative vote of holders of at least 66 2/3% of the voting power of all of the then outstanding shares of voting stock, voting as a single class, will be required to amend or repeal our bylaws, although our bylaws may be amended by a simple majority vote of our board of directors; provided that any bylaw amendment adopted by our stockholders that specifies the votes necessary for the election of directors will not be further amended or repealed by our board of directors.

The foregoing provisions will make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of our company by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change the control of our company.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage certain types of transactions that may involve an actual or threatened acquisition of our company. These provisions are also designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy rights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of deterring hostile takeovers or delaying changes in control of our company or our management. As a consequence, these provisions also may inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts.

***Section 203 of the Delaware General Corporation Law***

We are subject to Section 203 of the Delaware General Corporation Law, or Section 203, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, our board of directors approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

- upon closing of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least eighty-five percent (85%) of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned by: (i) persons who are directors and also officers; and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

- on or after such date, the business combination is approved by our board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 2⁄3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines business combination to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;

- any sale, transfer, pledge or other disposition of ten percent (10%) or more of the assets of the corporation involving the interested stockholder;

- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;

- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or

- the receipt by the interested stockholder of the benefit of any loss, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an “interested stockholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, fifteen percent (15%) or more of the outstanding voting stock of the corporation.

***Limitations of liability and indemnification***

See the section of this prospectus entitled "Executive Compensation—Limitation on liability and indemnification matters."

**Listing**

We have applied to list the units, the common stock and the warrants on the NASDAQ Capital Market, subject to notice of issuance, under the trading symbols "CAPNU," "CAPN" and "CAPNW," respectively.

**Transfer agent and registrar**

Upon the closing of this offering, the transfer agent and registrar for our common stock will be American Stock Transfer & Trust Company.

## SHARES ELIGIBLE FOR FUTURE TRADING

Prior to this offering, there has been no public market for shares of our common stock and we cannot assure you that a liquid trading market for the shares of our common stock will develop or be sustained after this offering. Future sales of substantial amounts of shares of common stock, including shares issued upon the exercise of outstanding options, in the public market after this offering, or the possibility of these sales occurring, could adversely affect the prevailing market price for our common stock or impair our ability to raise equity capital.

Based on the number of shares outstanding as of , 2014, upon the closing of this offering, shares of our common stock will be outstanding, assuming no exercise of the underwriters' option to purchase additional shares of common stock (through the purchase of additional units) and no exercise of outstanding options or warrants. Of the outstanding shares, all of the shares sold in this offering will be freely tradable, except that any shares held by our affiliates, as that term is defined in Rule 144 under the Securities Act, may only be sold in compliance with the limitations described below.

The remaining outstanding shares of our common stock will be deemed "restricted securities" as defined in Rule 144. Restricted securities may be sold in the public market only if they are registered or if they qualify for an exemption from registration under Rule 144 or Rule 701 under the Securities Act, which rules are summarized below. In addition, holders of substantially all of our equity securities are subject to market stand-off agreements or have entered into lock-up agreements with the underwriters under which they have agreed, subject to specific exceptions, not to sell any of our stock for at least 180 days following the date of this prospectus, as described below. As a result of these agreements and the provisions of our amended and restated investors' rights agreement described above under "Description of Capital Stock—Registration Rights," subject to the provisions of Rule 144 or Rule 701, following the expiration of the lock-up period, all shares subject to such provisions and agreements will be available for sale in the public market only if registered or pursuant to an exemption from registration under Rule 144 or Rule 701 under the Securities Act.

**Rule 144**

In general, a person who has beneficially owned restricted shares of our common stock for at least six months would be entitled to sell their securities provided that: (i) such person is not deemed to have been one of our affiliates at the time of, or at any time during the 90 days preceding a sale; and (ii) we are subject to the periodic reporting requirements of the Exchange Act, for at least 90 days before the sale. Persons who have beneficially owned restricted shares of our common stock for at least six months but who are our affiliates at the time of, or any time during the 90 days preceding, a sale, would be subject to additional restrictions, by which such person would be entitled to sell within any three-month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares of our common stock outstanding after this offering, which will equal approximately shares immediately after the closing of this offering, based on the number of common stock outstanding as of , 2014 and assuming no exercise of the underwriters' option to purchase additional shares of our common stock; or

- the average weekly trading volume of our common stock on NASDAQ during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale;

provided, in each case, that we are subject to the periodic reporting requirements the Exchange Act for at least 90 days before the sale. Such sales both by affiliates and by non-affiliates must also comply with the manner of sale, current public information and notice provisions of Rule 144.

**Rule 701**

Rule 701, as currently in effect, generally allows a stockholder who purchased shares of our common stock pursuant to a written compensatory plan or contract and who is not deemed to have been an affiliate of our company during the immediately preceding 90 days to sell these shares (subject to the requirements of the lock-up agreements, as described below) in reliance upon Rule 144, but without being required to comply with the public information, holding period, volume limitation, or notice provisions of Rule 144. Rule 701 also permits affiliates of our company to sell their Rule 701 shares under Rule 144 without complying with the holding period requirements of Rule 144. However, all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus (or until such later date that is required by the lock-up agreements, as described below) before selling such shares pursuant to Rule 701.

**Lock-Up Agreements**

We, our directors and officers, and the holders of 1% or more of our common stock have agreed with the underwriters that for a period of 180 days following the date of this prospectus, subject to certain exceptions, we will not offer, sell, assign, transfer, pledge, contract to sell or otherwise dispose of or hedge any shares of our common stock or any securities convertible into or exchangeable for shares of our common stock, subject to specified exceptions. Maxim Group LLC may, in its sole discretion, at any time, release all or any portion of the shares from the restrictions in this agreement.

**Registration Rights**

The holders of our convertible preferred stock and certain warrants to purchase shares of our convertible preferred stock, or their transferees, are entitled to certain rights with respect to the registration of those shares under the Securities. For a description of these registration rights, see the section of this prospectus entitled “Description of Securities—Registration Rights.” If these shares are registered, they will be freely tradable without restriction under the Securities Act.

**Registration Statements on Form S-8**

Upon the completion of this offering, we intend to file a registration statement on Form S-8 under the Securities Act to register all of the shares of common stock issued or reserved for issuance under our stock option plans. Shares covered by this registration statement will be eligible for sale in the public market, upon the expiration or release from the terms of the lock-up agreements and subject to vesting of such shares.

## UNDERWRITING

Subject to the terms and conditions of the underwriting agreement, the underwriters named below, through their representative, Maxim Group LLC, referred to herein as Maxim, have severally agreed to purchase from us on a firm commitment basis the following respective number of units at a public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus:

| Name | Number of Units |
|---|---|
| Maxim Group LLC | |
| Cantor Fitzgerald & Co. | |
| Total: | |

The underwriting agreement provides that the obligation of the underwriters to purchase all of the units being offered to the public is subject to specific conditions, including the absence of any material adverse change in our business or in the financial markets and the receipt of certain legal opinions, certificates and letters from us, our counsel and the independent auditors. Subject to the terms of the underwriting agreement, the underwriters will purchase all of the units being offered to the public, other than those covered by the over-allotment option described below, if any of these units are purchased.

**Over-Allotment Option**

We have granted to the underwriters an option, exercisable not later than 45 days after the effective date of the registration statement, to purchase up to additional units at the public offering price less the underwriting discounts and commissions set forth on the cover of this prospectus. The underwriters may exercise this option only to cover over-allotments made in connection with the sale of the units offered by this prospectus. To the extent that the underwriters exercise this option, each of the underwriters will become obligated, subject to conditions, to purchase approximately the same percentage of these additional units as the number of units to be purchased by it in the above table bears to the total number of units offered by this prospectus. We will be obligated, pursuant to the option, to sell these additional units to the underwriters to the extent the option is exercised. If any additional units are purchased, the underwriters will offer the additional units on the same terms as those on which the other units are being offered hereunder. Prior to separation of the units, any exercise of the over-allotment will be settled in units, and subsequent to the separation of the units will be settled in shares of common stock and warrants, as applicable.

**Commissions and Expenses**

The underwriting discounts and commissions are 7% of the initial public offering price, except with respect to the first $2.5 million of units purchased by our shareholders and convertible promissory noteholders as of March 19, 2014 on which the underwriting discount and commission shall be 3.5%. We have agreed to pay the underwriters the discounts and commissions set forth below, assuming either no exercise or full exercise by the underwriters of the underwriters' over-allotment option. In addition, we have agreed to reimburse the underwriters for certain expenses incurred in connection with this offering, including but not limited to road show expenses, in an amount not to exceed $150,000 for all expenses.

We have been advised by the representative of the underwriters that the underwriters propose to offer the units to the public at the public offering price set forth on the cover of this prospectus and to dealers at a price that represents a concession not in excess of $ per unit under the public offering price of $ per unit. The underwriters may allow, and these dealers may re-allow, a concession of not more than $ per unit to other dealers. After the initial public offering, the representative of the underwriters may change the offering price and other selling terms.

The following table shows the per share and total public offering price, underwriting discounts and commissions, and proceeds before expenses to us. These amounts are shown assuming both no exercise and full exercise of the underwriters' over-allotment option.

| | | Total | |
|---|---|---|---|
| | Per share | No exercise | Full exercise |
| Public offering price | $ | $ | $ |
| Underwriting discounts and commissions paid by us | $ | $ | $ |
| Proceeds, before expenses, to us | $ | $ | $ |

The estimated offering expenses payable by us, exclusive of underwriting discounts and commissions, are approximately $ .

**Underwriter Compensation Warrants**

We have also agreed to issue to Maxim warrants to purchase a number of our units equal to an aggregate of 5% of the units sold in this offering, including in connection with the exercise by the underwriters of the over-allotment option. The warrants will have an exercise price equal to 110% of the offering price of the common stock underlying the units sold in this offering and may be exercised on a cashless basis. The warrants are exercisable commencing 180 days after the effective date of the registration statement related to this offering, and will be exercisable for four and a half years thereafter. The warrants are not redeemable by us. The warrants also provide for one demand registration of the shares of common stock underlying the warrants at our expense, an additional demand at the warrant holder's expense and unlimited "piggyback" registration rights at our expense with respect to the underlying shares of common stock during the five year period commencing six months after the closing date. The warrants and the units (including the shares of common stock and warrants underlying the units), have been deemed compensation by FINRA and are therefore subject to a 180-day lock-up pursuant to Rule 5110(g)(1) of FINRA. Maxim (or permitted assignees under Rule 5110(g)(1) of FINRA) may not sell, transfer, assign, pledge, or hypothecate the warrants or the securities underlying the warrants, nor will it engage in any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of the warrants or the underlying securities for a period of 180 days from the date on which the Registration Statement on Form S-1 of which this prospectus forms a part is declared effective by the SEC, except to any FINRA member participating in the offering and their bona fide officers or partners. The warrants will provide for adjustment in the number and price of such warrants (and the shares of common stock and warrants underlying such warrants) in the event of recapitalization, merger or other structural transaction to prevent mechanical dilution.

**Lock-Up Agreements**

Prior to the completion of this offering, we and each of our officers, directors, and 1.0% or greater stockholders will agree, subject to certain exceptions, not to sell, offer, agree to sell, contract to sell, hypothecate, pledge, grant any option to purchase, make any short sale of, or otherwise dispose of or hedge, directly or indirectly, any units, shares of common stock or warrants, or any securities convertible into or exercisable or exchangeable for units, shares of common stock or warrants, whether any such transaction described above is to be settled by delivery of units, shares of common stock or warrants, in cash or otherwise, for a period of 180 days after the date of the final prospectus relating to this offering without the prior written consent of Maxim. This 180-day restricted period will be automatically extended if: (1) during the last 17 days of the 180-day restricted period we issue an earnings release or announce material news or a material event relating to us occurs; or (2) prior to the expiration of the 180-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 180-day period, in which case the restrictions described in the preceding sentence will continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the announcement of the material news or material event.

**Pricing of this Offering**

Prior to this offering, there has not been a public market for our securities and the public offering price for our units will be determined through negotiations between us and the underwriter. Among the factors to be considered in these negotiations will be prevailing market conditions, our financial information, market valuations of other companies that we and the underwriter believe to be comparable to us, estimates of our business potential, the present state of our development and other factors deemed relevant.

We offer no assurances that the initial public offering price will correspond to the price at which our units, common stock or warrants will trade in the public market subsequent to this offering or that an active trading market for our units, common stock or warrants will develop and continue after this offering.

**Indemnification**

The underwriting agreement provides that we will indemnify the underwriter against certain liabilities that may be incurred in connection with this offering, including liabilities under the Securities Act, or to contribute payments that the underwriter may be required to make in respect thereof.

**Listing**

We have applied to list the units, common stock and warrants on the NASDAQ Capital Market, subject to notice of issuance, under the trading symbols “CAPNU”, “CAPN” and “CAPNW”, respectively.

**Electronic Distribution**

A prospectus in electronic format may be made available on websites or through other online services maintained by the underwriter of this offering, or by its affiliates. Other than the prospectus in electronic format, the information on the underwriter’s website and any information contained in any other website maintained by an underwriter is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or the underwriter in its capacity as underwriter, and should not be relied upon by investors.

**Price Stabilization, Short Positions and Penalty Bids**

In connection with the offering, the underwriters may engage in stabilizing transactions, over-allotment transactions, syndicate covering transactions and penalty bids in accordance with Regulation M under the Exchange Act:

- Stabilizing transactions permit bids to purchase securities so long as the stabilizing bids do not exceed a specified maximum.

- Over-allotment involves sales by the underwriters of securities in excess of the number of securities the underwriters are obligated to purchase, which creates a syndicate short position. The short position may be either a covered short position or a naked short position. In a covered short position, the number of securities over-allotted by the underwriters is not greater than the number of securities that it may purchase in the over-allotment option. In a naked short position, the number of securities involved is greater than the number of securities in the over-allotment option. The underwriters may close out any covered short position by either exercising the over-allotment option and/or purchasing securities in the open market.

- Syndicate covering transactions involve purchases of securities in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the

source of securities to close out the short position, the underwriters will consider, among other things, the price of securities available for purchase in the open market as compared to the price at which it may purchase securities through the over-allotment option. If the underwriters sell more securities than could be covered by the over-allotment option, a naked short position, the position can only be closed out by buying securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there could be downward pressure on the price of the securities in the open market after pricing that could adversely affect investors who purchase in the offering.

- Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our securities or preventing or retarding a decline in the market price of our securities. As a result, the price of our securities may be higher than the price that might otherwise exist in the open market. Neither we nor the underwriters makes any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our securities. In addition, neither we nor the underwriters makes any representations that the underwriters will engage in these stabilizing transactions or that any transaction, once commenced, will not be discontinued without notice.

**Other Terms**

In addition, we have agreed to grant to Maxim, upon the consummation of this offering, a right of first refusal to act as lead managing underwriter and lead bookrunner and/or lead placement agent for any and all future public and private equity, equity-linked or debt offerings by us for a period of twelve (12) months from the effective date of the registration statement related to this offering. We shall give Maxim written notice of its intention to enter into such a proposed transaction and shall offer Maxim compensation no less favorable, as a proportion of the total offering amount, than that offered to Maxim in this offering. If Maxim fails to accept such engagement within five (5) business days after receipt of such written notice from us, then we will be free to pursue alternative underwriters for such proposed transaction.

**Affiliations**

The underwriters and their respective affiliates may in the future provide, various investment banking and other financial services for us for which services they may in the future receive, customary fees. Except for services provided in connection with this offering, none of the underwriters have provided any investment banking or other financial services to us and we do not expect to retain the underwriter to perform any investment banking or other financial services to us for at least 90 days after the date of this prospectus.

## LEGAL MATTERS

Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, CA, will pass upon the validity of the shares of common stock offered hereby. The underwriters are being represented by Loeb & Loeb LLP, New York, NY, in connection with the offering. Certain members of, and investment partnerships comprised of members of, and persons associated with, Wilson Sonsini Goodrich & Rosati own an interest representing less than 0.5% of our common stock.

## EXPERTS

The financial statements of Capnia, Inc. as of December 31, 2012 and 2013, and for each of the two years in the period ended December 31, 2013 and for the period from inception until December 31, 2013, included in this prospectus have been so included in reliance on the report of Marcum LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

## WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act in connection with this offering of our common stock. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement, some items of which are contained in exhibits to the registration statement as permitted by the rules and regulations of the SEC. For further information with respect to us and our common stock, we refer you to the registration statement, including the exhibits and the financial statements and notes filed as a part of the registration statement. Statements contained in this prospectus concerning the contents of any contract or any other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, please see the copy of the contract or document that has been filed. Each statement in this prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit. The exhibits to the registration statement should be referenced for the complete contents of these contracts and documents. A copy of the registration statement and the exhibits filed therewith may be inspected without charge at the public reference room of the SEC, located at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may obtain information on the operation of the public reference rooms by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet website that contains reports, proxy statements, and other information about issuers, like us, that file electronically with the SEC. The address of that website is *www.sec.gov*.

As a result of this offering, we will become subject to the information and reporting requirements of the Exchange Act and, in accordance with this law, we will file periodic reports, proxy statements, and other information with the SEC. These periodic reports, proxy statements, and other information will be available for inspection and copying at the SEC's public reference facilities and the website of the SEC referred to above. We also maintain a website at *www.capnia.com*. After the closing of this offering, you may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website (*www.capnia.com*) as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not incorporated by reference into this prospectus.

**CAPNIA, INC.**

**INDEX TO FINANCIAL STATEMENTS**

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Audit Committee of the
Board of Directors and Shareholders
of Capnia, Inc.

We have audited the accompanying balance sheets of Capnia, Inc. (the "Company") as of December 31, 2013 and 2012, and the related statements of operations and comprehensive loss, convertible preferred stock and stockholders' deficit and cash flows for the years then ended and for the period from August 25, 1999 (inception) to December 31, 2013. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Capnia, Inc., as of December 31, 2013 and 2012, and the results of its operations and its cash flows for the years then ended and the period from August 25, 1999 (inception) to December 31, 2013 in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements – Nature of Business and Management's Plans Regarding Financing of Future Operations, the Company's recurring losses from operations and its need for additional capital raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1 – Nature of Business and Management's Plans Regarding Financing of Future Operations. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ Marcum LLP
New York, NY
May 7, 2014

**CAPNIA, INC.**

**BALANCE SHEETS**

| | As of December 31, | | As of March 31, | Pro Forma As of March 31, |
|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2014 |
| | | | | (unaudited) |
| ASSETS | | | | |
| Current assets | | | | |
| Cash and cash equivalents | $ 2,155,262 | $ 1,268,770 | $ 763,911 | |
| Restricted cash | 20,000 | 20,000 | 20,000 | |
| Accounts receivable | — | 149,605 | 41,192 | |
| Other receivables | 150,782 | — | — | |
| Prepaid expenses and other current assets | 61,503 | 85,149 | 161,881 | |
| Total current assets | 2,387,547 | 1,523,524 | 986,984 | — |
| Property and equipment, net | 105,453 | 63,167 | 44,171 | |
| Other assets | 21,089 | — | — | |
| Total assets | $ 2,514,089 | $ 1,586,691 | $ 1,031,155 | $ — |
| LIABILITIES, CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT | | | | |
| Current liabilities | | | | |
| Accounts payable | $ 219,524 | $ 57,721 | $ 88,844 | |
| Accrued expenses and other current liabilities | 191,007 | 128,651 | 222,448 | |
| Convertible promissory notes and accrued interest | 11,131,590 | 13,991,857 | 14,379,407 | |
| Total current liabilities | 11,542,121 | 14,178,229 | 14,690,699 | |
| Convertible preferred stock warrant liability | 1,359,557 | 1,464,877 | 1,219,244 | $ — |
| Commitments and contingencies | | | | |
| Convertible Preferred Stock | | | | |
| Series A convertible preferred stock, $0.001 par value, 459,375 shares authorized, 375,000 shares issued and outstanding at December 31, 2012 and 2013 and March 31, 2014 (unaudited); zero shares issued and outstanding, pro forma (aggregate liquidation preference of $1,500,000) | 1,500,000 | 1,500,000 | 1,500,000 | — |
| Series B convertible preferred stock, $0.001 par value, 3,743,053 shares authorized, 1,429,779 shares issued and outstanding at December 31, 2012 and 2013 and March 31, 2014 (unaudited); zero shares issued and outstanding, pro forma; (aggregate liquidation preference of $6,862,939) | 6,862,939 | 6,862,939 | 6,862,939 | — |
| Series C convertible preferred stock, $0.001 par value, 17,500,000 shares authorized, 8,580,616 shares issued and outstanding at December 31, 2012 and 2013 and March 31, 2014 (unaudited); zero shares issued and outstanding, pro forma; (aggregate liquidation preference of $15,445,109) | 15,445,109 | 15,445,109 | 15,445,109 | — |
| Stockholders' Deficit | | | | |
| Common stock, $0.001 par value, 29,500,000 shares authorized, 6,268,811, 6,428,716 and 6,428,716 shares issued and outstanding at December 31, 2012 and 2013 and March 31, 2014 (unaudited), respectively; 16,814,111 shares issued and outstanding, pro forma | 6,269 | 6,429 | 6,429 | 16,814 |
| Additional paid-in capital | 19,191,362 | 19,229,619 | 19,241,111 | 43,038,773 |
| Deficit accumulated during development stage | (53,393,268) | (57,100,511) | (57,934,376) | (57,934,376) |
| Total stockholders' deficit | (34,195,637) | (37,864,463) | (38,686,836) | $ (14,878,789) |
| Total liabilities and stockholders' deficit | $ 2,514,089 | $ 1,586,691 | $ 1,031,155 | |

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

**CAPNIA, INC.**

**STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)**

| | Year Ended December 31, | | Three Months Ended March 31, | | Period from August 25, 1999 (Inception) through December 31, 2013 | Period from August 25, 1999 (Inception) through March 31, 2014 |
|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2013 | 2014 | | |
| | | | (unaudited) | | | (unaudited) |
| Revenue | $ — | $ 3,000,000 | $ 3,000,000 | $ — | $ 3,000,000 | $ 3,000,000 |
| Expenses | | | | | | |
| Research and development | 2,469,913 | 2,379,832 | 702,920 | 372,054 | 36,652,458 | 37,024,512 |
| General and administrative | 1,127,193 | 1,466,951 | 415,857 | 312,434 | 15,959,784 | 16,272,218 |
| Total expenses | 3,597,106 | 3,846,783 | 1,118,777 | 684,488 | 52,612,242 | 53,296,730 |
| Operating income (loss) | (3,597,106) | (846,783) | 1,881,223 | (684,488) | (49,612,242) | (50,296,730) |
| Therapeutic discovery grant proceeds | — | — | — | — | 733,437 | 733,437 |
| Interest and other income (expense) | | | | | | |
| Interest income | 3,096 | 1,772 | 479 | 275 | 814,273 | 814,548 |
| Interest expense | (2,865,463) | (2,860,267) | (944,717) | (387,550) | (9,720,841) | (10,108,391) |
| Other income (expense), net | (22,411) | (1,965) | 77,025 | 237,898 | 684,862 | 922,760 |
| Net income (loss) and comprehensive income (loss) | $ (6,481,884) | $ (3,707,243) | $ 1,014,010 | $ (833,865) | $ (57,100,511) | $ (57,934,376) |
| Weighted average common shares outstanding | | | | | | |
| Basic | 6,244,230 | 6,428,278 | 6,426,939 | 6,428,716 | | |
| Diluted | 6,244,230 | 6,428,278 | 27,067,245 | 6,428,716 | | |
| Net income (loss) per share | | | | | | |
| Basic | $ (1.04) | $ (0.58) | $ 0.16 | $ (0.13) | | |
| Diluted | $ (1.04) | $ (0.58) | $ 0.05 | $ (0.13) | | |

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

## CAPNIA, INC.

## STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT

| | Series A Convertible Preferred Stock | | Series B Convertible Preferred Stock | | Series C Convertible Preferred Stock | | Common Stock | | Additional Paid-In Capital | Deficit Accumulated During Development Stage | Total Stockholders' Equity (Deficit) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Shares | Amount | Shares | Amount | Shares | Amount | Shares | Amount | | | |
| Balances at August 25, 1999 (Inception) | — | $ — | — | $ — | — | $ — | — | $ — | $ — | $ — | $ — |
| Issuance of restricted common stock to founders in consideration for intellectual property assigned to the Company | — | — | — | — | — | — | 625,000 | 625 | 4,375 | — | 5,000 |
| Net loss and comprehensive loss | — | — | — | — | — | — | — | — | — | (7,447) | (7,447) |
| Balances at December 31, 1999 | — | — | — | — | — | — | 625,000 | 625 | 4,375 | (7,447) | (2,447) |
| Net loss | — | — | — | — | — | — | — | — | — | (75,378) | (75,378) |
| Balances at December 31, 2000 | — | — | — | — | — | — | 625,000 | 625 | 4,375 | (82,825) | (77,825) |
| Issuance of Series A convertible preferred stock for cash and conversion of convertible notes | 459,375 | 1,837,500 | — | — | — | — | — | — | — | — | — |
| Issuance of common stock upon exercise of options | — | — | — | — | — | — | 975 | 1 | 77 | — | 78 |
| Net loss | — | — | — | — | — | — | — | — | — | (833,441) | (833,441) |
| Balances at December 31, 2001 | 459,375 | 1,837,500 | — | — | — | — | 625,975 | 626 | 4,452 | (916,266) | (911,188) |
| Issuance of warrants in connection with convertible notes | — | — | — | — | — | — | — | — | 21,926 | — | 21,926 |
| Issuance of common stock upon exercise of warrants | — | — | — | — | — | — | 51,562 | 52 | 20,574 | — | 20,626 |
| Net loss | — | — | — | — | — | — | — | — | — | (1,479,582) | (1,479,582) |
| Balances at December 31, 2002 | 459,375 | 1,837,500 | — | — | — | — | 677,537 | 678 | 46,952 | (2,395,848) | (2,348,218) |
| Issuance of common stock upon exercise of options | — | — | — | — | — | — | 10,154 | 10 | 2,046 | — | 2,056 |
| Issuance of warrants in connection with convertible notes | — | — | — | — | — | — | — | — | 4,911 | — | 4,911 |
| Net loss | — | — | — | — | — | — | — | — | — | (2,218,360) | (2,218,360) |
| Balances at December 31, 2003 | 459,375 | 1,837,500 | — | — | — | — | 687,691 | 688 | 53,909 | (4,614,208) | (4,559,611) |
| Issuance of restricted common stock | — | — | — | — | — | — | 6,250 | 6 | 2,494 | — | 2,500 |
| Issuance of warrants in connection with convertible notes | — | — | — | — | — | — | — | — | 449,194 | — | 449,194 |
| Issuance of Series B convertible preferred stock for cash and conversion of convertible notes | — | — | 2,504,363 | 12,020,942 | — | — | — | — | — | — | — |
| Issuance of common stock upon exercise of options | — | — | — | — | — | — | 846 | 1 | 337 | — | 338 |
| Net loss | — | — | — | — | — | — | — | — | — | (3,721,611) | (3,721,611) |

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

**CAPNIA, INC.**

**STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT (CONTINUED)**

| | Series A Convertible Preferred Stock | | Series B Convertible Preferred Stock | | Series C Convertible Preferred Stock | | Common Stock | | Additional Paid-In Capital | Deficit Accumulated During Development Stage | Total Stockholders' Equity (Deficit) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Shares | Amount | Shares | Amount | Shares | Amount | Shares | Amount | | | |
| Balances at December 31, 2004 | 459,375 | 1,837,500 | 2,504,363 | 12,020,942 | — | — | 694,787 | 695 | 505,934 | (8,335,819) | (7,829,190) |
| Net loss and comprehensive loss | — | — | — | — | — | — | — | — | — | (3,444,465) | (3,444,465) |
| Balances at December 31, 2005 | 459,375 | 1,837,500 | 2,504,363 | 12,020,942 | — | — | 694,787 | 695 | 505,934 | (11,780,284) | (11,273,655) |
| Issuance of Series B convertible preferred stock | — | — | 1,093,638 | 5,249,463 | — | — | — | — | — | — | — |
| Issuance of common stock upon exercise of options | — | — | — | — | — | — | 26,852 | 27 | 11,962 | — | 11,989 |
| Stock-based compensation | — | — | — | — | — | — | — | — | 19,235 | — | 19,235 |
| Reclassification of preferred stock warrants upon adoption of new accounting policy | — | — | — | — | — | — | — | — | (428,194) | — | (428,194) |
| Net loss | — | — | — | — | — | — | — | — | — | (3,364,419) | (3,364,419) |
| Balances at December 31, 2006 | 459,375 | $ 1,837,500 | 3,598,001 | 17,270,405 | — | — | 721,639 | 722 | 108,937 | (15,144,703) | (15,035,044) |
| Stock-based compensation | — | — | — | — | — | — | — | — | 127,948 | — | 127,948 |
| Issuance of common stock upon exercise of options | — | — | — | — | — | — | 331,453 | 331 | 131,622 | — | 131,953 |
| Issuance of common stock, net of issuance costs | — | — | — | — | — | — | 617,608 | 618 | 531,215 | — | 531,833 |
| Net loss | — | — | — | — | — | — | — | — | — | (5,806,829) | (5,806,829) |
| Balances at December 31, 2007 | 459,375 | 1,837,500 | 3,598,001 | 17,270,405 | — | — | 1,670,700 | 1,671 | 899,722 | (20,951,532) | (20,050,139) |
| Issuance of common stock upon exercise of options | — | — | — | — | — | — | 9,749 | 10 | 3,470 | — | 3,480 |
| Issuance of common stock upon exercise of warrants | — | — | — | — | — | — | 13,019 | 13 | 5,195 | — | 5,208 |
| Issuance of Series C convertible preferred stock for cash and conversion of notes | — | — | — | — | 10,694,189 | 19,249,540 | — | — | — | — | — |
| Stock-based compensation | — | — | — | — | — | — | — | — | 105,929 | — | 105,929 |
| Net loss | — | — | — | — | — | — | — | — | — | (11,436,431) | (11,436,431) |
| Balances at December 31, 2008 | 459,375 | 1,837,500 | 3,598,001 | 17,270,405 | 10,694,189 | 19,249,540 | 1,693,468 | 1,694 | 1,014,316 | (32,387,963) | (31,371,953) |
| Stock-based compensation | — | — | — | — | — | — | — | — | 100,508 | — | 100,508 |
| Net loss | — | — | — | — | — | — | | | | (5,830,528) | (5,830,528) |

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

**CAPNIA, INC.**

**STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT (CONTINUED)**

| | Series A Convertible Preferred Stock | | Series B Convertible Preferred Stock | | Series C Convertible Preferred Stock | | Common Stock | | Additional Paid-In Capital | Deficit Accumulated During Development Stage | Total Stockholders' Equity (Deficit) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Shares | Amount | Shares | Amount | Shares | Amount | Shares | Amount | | | |
| Balances at December 31, 2009 | 459,375 | 1,837,500 | 3,598,001 | 17,270,405 | 10,694,189 | 19,249,540 | 1,693,468 | 1,694 | 1,114,824 | (38,218,491) | (37,101,973) |
| Conversion of convertible preferred stock to common stock | (84,375) | (337,500) | (2,168,222) | (10,407,466) | (2,113,573) | (3,804,431) | 4,366,147 | 4,365 | 14,545,032 | | 14,549,397 |
| Beneficial conversion feature in connection with related party convertible promissory notes | — | — | — | — | — | — | — | — | 1,074,387 | — | 1,074,387 |
| Issuance of restricted common stock in exchange for intellectual property | — | — | — | — | — | — | 159,905 | 160 | 15,831 | — | 15,991 |
| Issuance of common stock upon exercise of stock options | — | — | — | — | — | — | 8,500 | 9 | 2,457 | — | 2,466 |
| Stock-based compensation | — | — | — | — | — | — | — | — | 63,383 | — | 63,383 |
| Net loss | | | | | | | | | | (4,118,336) | (4,118,336) |
| Balances at December 31, 2010 | 375,000 | 1,500,000 | 1,429,779 | 6,862,939 | 8,580,616 | 15,445,109 | 6,228,020 | 6,228 | 16,815,914 | (42,336,827) | (25,514,685) |
| Stock-based compensation expense | — | — | — | — | — | — | — | — | 23,757 | — | 23,757 |
| Net loss and comprehensive loss | | | | | | | | | | (4,574,557) | (4,574,557) |
| Balances at December 31, 2011 | 375,000 | 1,500,000 | 1,429,779 | 6,862,939 | 8,580,616 | 15,445,109 | 6,228,020 | 6,228 | 16,839,671 | (46,911,384) | (30,065,485) |
| Issuance of common stock upon exercise of options | — | — | — | — | — | — | 40,791 | 41 | 27,614 | — | 27,655 |
| Beneficial conversion feature in connection with related party convertible promissory notes | — | — | — | — | — | — | — | — | 2,299,662 | — | 2,299,662 |
| Stock-based compensation | — | — | — | — | — | — | — | — | 24,415 | — | 24,415 |
| Net loss | | | | | | | | | | (6,481,884) | (6,481,884) |
| Balances at December 31, 2012 | 375,000 | 1,500,000 | 1,429,779 | 6,862,939 | 8,580,616 | 15,445,109 | 6,268,811 | 6,269 | 19,191,362 | (53,393,268) | (34,195,637) |
| Vesting of restricted common stock | — | — | — | — | — | — | 159,905 | 160 | 23,826 | — | 23,986 |
| Stock-based compensation | — | — | — | — | — | — | | — | 14,431 | — | 14,431 |
| Net loss | — | — | — | — | — | — | | — | — | (3,707,243) | (3,707,243) |
| Balances at December 31, 2013 | 375,000 | $ 1,500,000 | 1,429,779 | $ 6,862,939 | 8,580,616 | $ 15,445,109 | 6,428,716 | $ 6,429 | $19,229,619 | $(57,100,511) | $ (37,864,463) |
| Stock-based compensation (unaudited) | — | — | — | — | — | — | — | — | 11,492 | | 11,492 |
| Net loss (unaudited) | — | — | — | — | — | — | — | — | — | (833,865) | (833,865) |
| Balances at March 31, 2014 (unaudited) | 375,000 | $ 1,500,000 | 1,429,779 | $ 6,862,939 | 8,580,616 | $ 15,445,109 | 6,428,716 | $ 6,429 | $19,241,111 | $(57,934,376) | $ (38,686,836) |

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

## CAPNIA, INC.

## STATEMENTS OF CASH FLOWS

| | Year Ended December 31, | | Three Months Ended March 31, | | Period from August 25, 1999 (Inception) through December 31, 2013 | Period from August 25, 1999 (Inception) through March 31, 2014 |
|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2013 | 2014 | | |
| | | | (Unaudited) | | | (Unaudited) |
| Cash flows from operating activities | | | | | | |
| Net income (loss) | $(6,481,884) | $(3,707,243) | $1,014,010 | $ (833,865) | $ (57,100,511) | $ (57,934,376) |
| Adjustments to reconcile net income (loss) to net cash used in operating activities: | | | | | | |
| Depreciation and amortization | 43,788 | 42,114 | 10,794 | 6,761 | 304,071 | 310,832 |
| Loss on disposition of property and equipment | — | 1,446 | — | 7,735 | 1,446 | 9,181 |
| Change in fair value of preferred stock warrants | 22,411 | 105,320 | 26,330 | (245,633) | (470,838) | (716,471) |
| Stock-based compensation | 24,415 | 38,417 | 27,594 | 11,492 | 479,606 | 491,098 |
| Non-cash interest expense related to warrants and convertible promissory notes | 2,865,961 | 2,860,267 | 944,717 | 387,550 | 9,577,541 | 9,965,091 |
| Cumulative effect of change in accounting principle | — | — | — | — | — | — |
| Changes in operating assets and liabilities: | | | | | | |
| Accounts receivable | — | (149,605) | — | 149,605 | (149,605) | — |
| Other receivables | (72,336) | 150,782 | 37,254 | (41,192) | — | (41,192) |
| Prepaid expenses and other assets | 29,673 | (2,557) | 3,709 | (76,733) | (85,149) | (161,882) |
| Accounts payable | 45,470 | (161,803) | 14,559 | 31,123 | 57,721 | 88,844 |
| Accrued expenses | 26,070 | (62,356) | 5,928 | 93,798 | 128,650 | 222,448 |
| Net cash provided by (used in) operating activities | (3,496,432) | (885,218) | 2,084,895 | (509,359) | (47,257,068) | (47,766,427) |
| Cash flows from investing activities | | | | | | |
| Purchase of property and equipment | (2,490) | (1,274) | (1,274) | — | (368,684) | (368,684) |
| Restricted cash | — | — | — | — | (20,000) | (20,000) |
| Net cash used in investing activities | (2,490) | (1,274) | (1,274) | — | (388,684) | (388,684) |
| Cash flows from financing activities | | | | | | |
| Proceeds from sale of property, plant and equipment | — | — | — | 4,500 | — | 4,500 |
| Proceeds from issuance of convertible preferred stock | — | — | — | — | 31,657,269 | 31,657,269 |
| Proceeds from issuance of common stock, net | — | — | — | — | 531,833 | 531,833 |
| Proceeds from issuance of common stock upon exercise of stock options | 27,655 | — | — | — | 180,015 | 180,015 |
| Proceeds from issuance of restricted common stock | — | — | — | — | 2,500 | 2,500 |
| Proceeds from exercise and issuance of warrants | — | — | — | — | 25,834 | 25,834 |
| Proceeds from issuance of convertible notes payable | 4,999,243 | — | — | — | 16,517,071 | 16,517,071 |
| Net cash provided by financing activities | 5,026,898 | — | — | 4,500 | 48,914,522 | 48,919,022 |
| Net increase (decrease) in cash and cash equivalents | $ 1,527,976 | $ (886,492) | $2,083,621 | $ (504,859) | $ 1,268,770 | $ 763,911 |
| Cash and cash equivalents, beginning of period | 627,286 | 2,155,262 | 2,155,262 | 1,268,770 | — | — |
| Cash and cash equivalents, end of period | $ 2,155,262 | $ 1,268,770 | $4,238,883 | $ 763,911 | $ 1,268,770 | $ 763,911 |
| Supplemental disclosures of cash flow information | | | | | | |
| Cash paid for interest expense | $ 800 | $ — | $ — | $ — | $ 23,403 | $ 23,403 |
| Supplemental schedule of non-cash financing activities | | | | | | |
| Issuance of warrants for the purchase of convertible preferred stock in connection with notes payable | $ 633,248 | $ — | $ — | $ — | $ 1,707,635 | $ 1,707,635 |
| Beneficial conversion feature related to the warrants to purchase shares of convertible preferred stock in connection with convertible promissory notes | $ 2,299,662 | $ — | $ — | $ — | $ 3,374,049 | $ 3,374,049 |
| Issuance of warrants for the purchase of 111,111 shares of Series C convertible preferred stock in connection with note payable | $ — | $ — | $ — | $ — | $ 163,778 | $ 163,778 |
| Conversion of convertible promissory notes and accrued interest into shares of convertible preferred stock upon the adoption of new accounting policy | $ — | $ — | $ — | $ — | $ 6,700,176 | $ 6,700,176 |
| Issuance of restricted common stock in exchange for intellectual property | $ — | $ 23,986 | $ — | $ — | $ 44,977 | $ 44,977 |

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

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**

## 1. Nature of Business and Management's Plans Regarding Financing of Future Operations

***Formation and Business of the Company***

Capnia, Inc. (a development stage enterprise) (the "Company") was incorporated in the State of Delaware on August 25, 1999 (inception date), and is located in Redwood City, California. The Company develops diagnostics and therapeutics based on its proprietary technology for precision metering of gas flow.

The Company's first product, CoSense, aids in diagnosis of excessive hemolysis in neonates, a dangerous condition in which red blood cells degrade rapidly, which can lead to long-term developmental disability. CoSense received initial 510(k) clearance for sale in the U.S. in the fourth quarter of 2012, with a more specific Indication for Use related to hemolysis issued in the first quarter of 2014, and received CE Mark approval for sale in the E.U. in the third quarter of 2013. The Company is preparing to commercialize CoSense using its own sales efforts. In addition, the Company is applying its research and development efforts to additional diagnostic products based on its Sensalyze Technology Platform, a portfolio of proprietary methods and devices which enables CoSense and can be applied to detect a variety of analytes in exhaled breath.

The Company has also obtained CE Mark approval in the E.U. for Serenz, a therapeutic product candidate for the treatment of symptoms related to allergic rhinitis. The Company out licensed Serenz to Block Drug Company, a wholly-owned subsidiary of GlaxoSmithKline ("GSK") in 2013, realizing revenue in the form of a non-refundable up-front payment of $3.0 million. In June 2014, the GSK agreement terminated and the licensed rights to Serenz were returned to the Company.

***Management's Plans Regarding Financing of Future Operations***

The Company has experienced losses since its inception and, as of March 31, 2014 (unaudited), has an accumulated deficit of approximately $57.9 million and cash and cash equivalents of approximately $0.8 million. Through the date of the independent auditors' report, the Company has received payments totaling approximately $3.0 million pursuant to the license agreement with GSK pertaining to Serenz. This agreement terminated in June 2014, and the Company does not expect additional revenue to result from it. The Company plans to commercialize Serenz in the E.U. via distributorship arrangements. In the U.S., the Company intends to determine the regulatory approval pathway for Serenz in dialogue with the FDA, and subsequently to seek partnership or distributorship arrangements for commercialization. The Company therefore expects to continue to incur losses from costs related to the continuation of research and development and administrative activities.

The Company intends to commercialize CoSense starting in 2014, and will likely achieve profitability only if it can generate sufficient revenue from sales of the Company's CoSense instruments and consumables, or from license fees, milestone payments, and research and development payments in connection with potential future strategic partnerships. Although management has been successful in raising capital in the past, most recently in April 2014 (See Note 14), there can be no assurance that the Company will be successful, or that any needed financing will be available in the future at terms acceptable to the Company.

The inability to obtain additional financing could adversely affect the Company's short and long-term ability to achieve its intended business objectives. These uncertainties raise substantial doubt as to the Company's ability to continue as a going concern. The financial statements do not include any adjustments that might be necessary if the Company were unable to continue as a going concern.

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

**2. Summary of Significant Accounting Policies**

***Basis of Presentation***

From inception through March 31, 2014, the Company has devoted substantially all of its efforts to research, product development, raising capital, and building infrastructure. The Company has not generated significant revenues from its planned principal operations. Accordingly, the Company is considered to be in the development stage.

***Unaudited Interim Financial Statements***

The accompanying interim balance sheet as of March 31, 2014, the related interim statement of operations, and cash flows for the three month periods ended March 31, 2013 and 2014 and for the cumulative period from August 25, 1999 (date of inception) to March 31, 2014, the statement of stockholders' equity (deficit) for the three month period ended March 30, 2014 and the related footnote disclosures are unaudited. These unaudited interim financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). In management's opinion, the unaudited interim financial statements have been prepared on the same basis as the annual financial statements and include all adjustments, which include only normal recurring adjustments, necessary for the fair presentation of the Company's financial position as of March 31, 2014 and its results of operations and cash flows for the three month periods ended March 31, 2013 and 2014 and for the cumulative period from August 25, 1999 (date of inception) to March 31, 2014. The results for the three month period ended March 31, 2014 are not necessarily indicative of the results expected for the full calendar year.

***Use of Estimates***

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities, and reported amounts of expenses in the financial statements and accompanying notes. Actual results could differ from those estimates. Key estimates included in the financial statements include the valuation of deferred income tax assets and valuation of debt and equity instruments and stock-based compensation.

***Unaudited Pro Forma Balance Sheet***

Upon the consummation of the initial public offering contemplated by us, all of the outstanding shares of convertible preferred stock will automatically convert into shares of common stock. The March 31, 2014 unaudited pro forma balance sheet data has been prepared assuming the conversion of the convertible preferred stock outstanding into 10,385,395 shares of common stock in connection with the completion of the offering referred to in this prospectus.

***Cash and Cash Equivalents***

The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. The Company's cash and cash equivalents are held in institutions in the U.S. and include deposits in a money market fund which was unrestricted as to withdrawal or use.

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

***Restricted Cash***

Restricted cash consists primarily of funds held in an interest bearing escrow account held to secure the Company's credit card facility with a financial institution.

***Business Concentration***

In 2013, 100% of the Company's revenue was generated pursuant to a license agreement with GSK. The Company had accounts receivable of approximately $150,000 from GSK at December 31, 2013 and approximately $41,000 as of March 31, 2014 (unaudited).

***Concentration of Credit Risk***

Financial instruments that potentially subject the Company to a concentration of credit risk consist of cash and cash equivalents at two commercial banks that management believes are of high credit quality. Cash and cash equivalents deposited with these commercial banks exceeded the Federal Deposit Insurance Corporation insurable limit at December 31, 2012 and 2013, and as of March 31, 2014 (unaudited). The Company expects this to continue.

***Segments***

The Company operates in one segment. Management uses one measurement of profitability and does not segregate its business for internal reporting, making operating decisions, and assessing financial performance. All long-lived assets are maintained in the United States of America.

***Risk and Uncertainties***

The Company's future results of operations involve a number of risks and uncertainties. Factors that could affect the Company's future operating results and cause actual results to vary materially from expectations include, but are not limited to, uncertainty of results of clinical trials and reaching milestones, uncertainty of regulatory approval of the Company's potential future products, uncertainty of market acceptance of the Company's products, competition from substitute products and larger companies, securing and protecting proprietary technology, strategic relationships and dependence on key individuals and sole source suppliers.

Products developed by the Company require clearances from the FDA or other international regulatory agencies prior to commercial sales. There can be no assurance that the products will receive the necessary clearances. If the Company was denied clearance, clearance was delayed or the Company was unable to maintain clearance, it could have a materially adverse impact on the Company.

The Company expects to incur substantial operating losses for the next several years and may, if it cannot generate sufficient product revenue or expands research and development into subsequent planned products, require additional financing. There can be no assurance that such financing will be available or will be at terms acceptable by the Company.

***Accounts Receivable***

Accounts receivable as of December 31, 2013 and March 31, 2014 (unaudited) consist of balances due from GSK pursuant to the license agreement executed in 2013. The Company did not record an allowance for doubtful accounts as this balance was deemed fully collectible as of each balance sheet date.

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

***Other Receivables***

Other receivables as of December 31, 2012 consist of balances due for subcontracting services unrelated to the Company's core business operations. The Company did not record an allowance for doubtful accounts as this balance was deemed fully collectible as of December 31, 2012. There were no other receivables as of December 31, 2013 or March 31, 2014 (unaudited).

***Prepaid Expenses and Other Current Assets***

Prepaid expenses and other current assets consist of payments primarily related to insurance and short-term deposits. Prepaid expenses are initially recorded upon payment and are expensed as goods or services are received.

***Property and Equipment, Net***

Property and equipment are stated at cost and depreciated using the straight-line method over the estimated useful lives of the assets, generally between three and five years. Leasehold improvements are amortized on a straight-line basis over the lesser of their useful life or the term of the lease. Maintenance and repairs are charged to expense as incurred, and improvements are capitalized. When assets are retired or otherwise disposed of, the cost and accumulated depreciation are removed from the balance sheet and any resulting gain or loss is reflected in operations in the period realized.

***Impairment of Long-Lived Assets***

The Company reviews its long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets held and used is measured by comparison of the carrying amount of an asset to future net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Assets to be disposed of are reported at the lower of their carrying cost or fair value less cost to sell. The Company has not recognized losses related to impairment since inception.

***Related-Party Convertible Promissory Notes***

The Company has issued convertible promissory notes pursuant to a number of private placements since 2010. These convertible promissory notes were issued with separate warrants to purchase the Company's convertible preferred stock. These warrants are treated as liabilities. The convertible promissory notes and accrued interest is convertible into the Company's capital stock or, for promissory notes issued in 2014, units to be sold in this offering. The fair value of the warrants was determined using a Monte Carlo simulation and allocated as a debt discount using the intrinsic value allocation method. The discount has been amortized using the effective interest method over the term of the related convertible promissory notes.

The Company applies the accounting standards for derivatives and hedging and for distinguishing liabilities from equity when accounting for hybrid contracts that feature conversion options. The Company accounts for convertible debt instruments when the Company has determined that the embedded conversion options should not be bifurcated from their host instruments in accordance with ASC 470-20 *"Debt with Conversion and Other Options"*. The Company records, when necessary, discounts to convertible notes for the

intrinsic value of conversion options embedded in debt instruments based upon the differences between the fair value of the underlying stock at the commitment date of the note transaction and the effective conversion price embedded in the note. Debt discounts under these arrangements are amortized over the term of the related debt (see Note 5).

***Convertible Preferred Stock Warrant Liability***

The Company has issued freestanding warrants to purchase shares of its convertible preferred stock. The Company has classified the fair value of these warrants as liabilities on the balance sheet as they correspond to the treatment of the preferred stock as temporary equity. The Company accounts for the warrants as a derivative instrument. Changes in the fair value of the warrants are presented separately as changes in warrant liability in the Company's statements of operations for each reporting period. The Company uses the Monte Carlo simulation model to determine the fair value of the warrants. As a result, the valuation of this derivative instrument is subjective because the option-valuation model requires the input of highly subjective assumptions, including the expected stock price volatility and the probability of a future occurrence of a fundamental transaction. Changes in these assumptions can materially affect the fair value estimate and, such impacts can, in turn, result in material non-cash charges or credits, and related impacts on earnings or loss per share, in the statements of operations. The Company will continue to adjust the liability for changes in fair value until the earlier of the expiration of the warrants or their exercise, at which time the liability will be reclassified into stockholders' deficit. The Company records any change in fair value as a component of other income or expense.

***Convertible Preferred Stock***

Upon the occurrence of certain change in control events that are outside of the control of the Company, including sale or transfer of control of the Company, holders of the convertible preferred stock can force the Company to redeem these shares. The holders of convertible preferred stock are entitled to require the Company to redeem their shares upon the approval of at least two thirds of the holders of shares of the convertible preferred stock then outstanding. Accordingly, these shares are considered contingently redeemable and are classified as temporary equity on the accompanying balance sheets.

***Revenue Recognition***

The Company recognized revenue during the year ended December 31, 2013 pursuant to its license agreement with GSK. The revenue was recognized because there was persuasive evidence of an arrangement, the price was fixed or determinable, and collectability was reasonably assured. The up-front payment for revenue recognized in 2013 was received prior to December 31, 2013 and was nonrefundable. No revenue was recognized during the three months ended March 31, 2014 (unaudited). The agreement was terminated in the second quarter of 2014, and the Company does not have any further monetary obligations with respect to this agreement.

***Research and Development***

Research and development costs are charged to operations as incurred. Research and development costs consist primarily of salaries and benefits, consultant fees, prototype expenses, certain facility costs and other costs associated with clinical trials, net of reimbursed amounts.

Costs to acquire technologies to be used in research and development that have not reached technological feasibility and have no alternative future use are expensed to research and development costs when incurred.

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

***Income Taxes***

The Company accounts for income taxes using the asset and liability method. Under this method, deferred income tax assets and liabilities are recorded based on the estimated future tax effects of differences between the amounts at which assets and liabilities are recorded for financial reporting purposes and the amounts recorded for income tax purposes. Deferred income taxes are classified as current or non-current, based on the classifications of the related assets and liabilities giving rise to the temporary differences. A valuation allowance is provided against the Company's deferred income tax assets when their realization is not reasonably assured.

The Company assesses all material positions taken in any income tax return, including all significant uncertain positions, in all tax years that are still subject to assessment or challenge by relevant taxing authorities. Assessing an uncertain tax position begins with the initial determination of the position's sustainability and is measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon ultimate settlement. As of each balance sheet date, unresolved uncertain tax positions must be reassessed, and the Company will determine whether (i) the factors underlying the sustainability assertion have changed and (ii) the amount of the recognized tax benefit is still appropriate. The recognition and measurement of tax benefits requires significant judgment. Judgments concerning the recognition and measurement of a tax benefit might change as new information becomes available.

***Stock-Based Compensation***

For stock options granted to employees, the Company recognizes compensation expense for all stock-based awards based on the estimated fair value on the date of grant. The value of the portion of the award that is ultimately expected to vest is recognized as expense ratably over the requisite service period. The fair value of stock options is determined using the Black-Scholes option pricing model. The determination of fair value for stock-based awards on the date of grant using an option pricing model requires management to make certain assumptions regarding a number of complex and subjective variables.

Stock-based compensation expense related to stock options granted to non-employees is recognized based on the fair value of the stock options, determined using the Black-Scholes option pricing model, as they are earned. The awards generally vest over the time period the Company expects to receive services from the non-employee.

***Comprehensive Income (Loss)***

Comprehensive income (loss) is defined as a change in equity of a business enterprise during a period, resulting from transactions from non-owner sources. There have been no items qualifying as other comprehensive income (loss) and, therefore, for all periods presented, the Company's comprehensive income (loss) was the same as its reported net income (loss).

***Net Income (Loss) per Share of Common Stock***

Basic net income (loss) per common share is calculated by dividing the net income (loss) attributable to common stockholders by the weighted-average number of common stock outstanding during the period, without consideration for potentially dilutive securities. Diluted net income (loss) per share is computed by dividing the net income (loss) attributable to common stockholders by the weighted-average number of common stock and potentially dilutive securities outstanding for the period.

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

For purposes of the diluted net income (loss) per share calculation, convertible preferred stock, convertible promissory notes, stock options and convertible preferred stock warrants are considered to be potentially dilutive securities. Because the Company has reported a net loss for the years ended December 31, 2012 and 2013 and for the three months ended March 31, 2014 (unaudited), diluted net loss per common share is the same as basic net loss per common share for those periods.

***Government Grants***

In 2010, the Company received three grants from the federal government. Proceeds of $733,437 related to the grants are presented on the accompanying statements of operations as non-operating income. There were no such grants in 2012, 2013, or 2014.

***Recent Accounting Pronouncements***

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board, or FASB, or other standard setting bodies and adopted by us as of the specified effective date. Unless otherwise discussed, the impact of recently issued standards that are not yet effective will not have a material impact on the Company's financial position or results of operations upon adoption.

In July 2013, the FASB issued Accounting Standards Update (ASU) 2013-11, *Presentation of an Unrecognized Tax Benefit when a Net Operating Loss Carryforward, a Similar Tax Loss, or a Tax Credit Carryforward Exists (a consensus of the FASB Emerging Issues Task Force)*. The amendments in this ASU provide guidance on the financial statements presentation of an unrecognized tax benefit when a net operating loss carryforward, a similar tax loss, or a tax credit carryforward exists. An unrecognized tax benefit should be presented in the financial statements as a reduction to a deferred tax asset for a net operating loss carryforward, a similar tax loss, or a tax credit carryforward with certain exceptions, in which case such an unrecognized tax benefit should be presented in the financial statements as a liability. The amendments in this ASU do not require new recurring disclosures and are effective for fiscal years, and interim periods within those years, beginning after December 15, 2013. The Company is currently assessing the impact of this ASU on its financial statements.

The Company has considered all other recently issued accounting pronouncements and does not believe the adoption of such pronouncements will have a material impact on its consolidated financial statements.

**3. Property and Equipment, Net**

Property and equipment consisted of the following:

| | December 31, | | March 31, |
|---|---|---|---|
| | 2012 | 2013 | 2014 |
| | | | (unaudited) |
| Furniture and fixtures | $ 195,531 | $ 180,238 | $ 139,695 |
| Computer hardware | 115,373 | 27,555 | 27,555 |
| Leasehold improvements | 10,726 | 10,726 | 10,726 |
| | $ 321,630 | $ 218,519 | $ 177,976 |
| Less accumulated depreciation and amortization | (216,177) | (155,352) | (133,805) |
| Total | $ 105,453 | $ 63,167 | $ 44,171 |

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

Depreciation expense for the years ended December 31, 2012 and 2013, was $43,788 and $42,114, respectively and $10,794 and $6,761 for the three months ended March 31, 2013 and 2014 (unaudited), respectively. Depreciation expense for the periods from August 25, 1999 (date of inception) to December 31, 2013 and March 31, 2014 (unaudited) was $304,071 and $310,832, respectively.

**4. Fair Value Measurements**

***Fair Value of Financial Instruments***

The carrying value of the Company's cash and cash equivalents, other receivable, prepaid expenses and other current assets, accounts payable, accrued liabilities, and convertible promissory notes approximate fair value due to the short-term nature of these items. Convertible preferred stock call option liability and convertible preferred stock warrant liability are carried at fair value. Based on the borrowing rates currently available to the Company for debt with similar terms and consideration of default and credit risk, the carrying value of the convertible promissory notes approximates their fair value.

Fair value is defined as the exchange price that would be received for an asset or an exit price paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs.

The fair value hierarchy defines a three-level valuation hierarchy for disclosure of fair value measurements as follows:

- Level I — Unadjusted quoted prices in active markets for identical assets or liabilities;
- Level II — Inputs other than quoted prices included within Level I that are observable, unadjusted quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the related assets or liabilities; and
- Level III — Unobservable inputs that are supported by little or no market activity for the related assets or liabilities.

The categorization of a financial instrument within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

The following table sets forth the Company's financial instruments that were measured at fair value on a recurring basis by level within the fair value hierarchy:

| | Fair Value Measurements at December 31, 2012 | | | |
|---|---|---|---|---|
| | Total | Level 1 | Level 2 | Level 3 |
| **Assets** | | | | |
| Money market fund | $ 2,120,389 | $ 2,120,389 | $ — | $ — |
| **Liabilities** | | | | |
| Convertible preferred stock warrant liability | $ 1,359,557 | $ — | $ — | $ 1,359,557 |

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

| | Fair Value Measurements at December 31, 2013 | | | |
|---|---|---|---|---|
| | Total | Level 1 | Level 2 | Level 3 |
| **Assets** | | | | |
| Money market fund | $ 1,256,752 | $ 1,256,752 | $ — | $ — |
| **Liabilities** | | | | |
| Convertible preferred stock warrant liability | $ 1,464,877 | $ — | $ — | $ 1,464,877 |

| | Fair Value Measurements at March 31, 2014 (unaudited) | | | |
|---|---|---|---|---|
| | Total | Level 1 | Level 2 | Level 3 |
| **Assets** | | | | |
| Money market fund | $ 660,802 | $ 660,802 | $ — | $ — |
| **Liabilities** | | | | |
| Convertible preferred stock warrant liability | $ 1,219,244 | $ — | $ — | $ 1,219,244 |

The fair value measurement of the convertible preferred stock warrant liability is based on significant inputs not observed in the market and thus represents a Level 3 measurement. The Company's estimated fair value of the convertible preferred stock warrant liability is calculated using a Monte Carlo simulation and key assumptions including the probabilities of settlement scenarios, enterprise value, time to liquidity, risk-free interest rates, discount for lack of marketability and volatility (see Note 6). The estimates are based, in part, on subjective assumptions and could differ materially in the future. Generally, increases or decreases in the fair value of the underlying convertible preferred stock would result in a directionally similar impact in the fair value measurement of the warrant liability.

During the periods presented, the Company has not changed the manner in which it values liabilities that are measured at fair value using Level 3 inputs. The Company recognizes transfers between levels of the fair value hierarchy as of the end of the reporting period. There were no transfers within the hierarchy during the years ended December 31, 2012 or 2013 and during the three months ended March 31, 2014 (unaudited).

The following table sets forth a summary of the changes in the fair value of the Company's Level 3 financial instruments as follows:

| | Convertible preferred stock warrant liability |
|---|---|
| Balance at January 1, 2012 | $ 703,898 |
| Issuance of convertible preferred stock warrants | 633,248 |
| Change in fair value recorded in other income (expense), net | 22,411 |
| Balance at December 31, 2012 | 1,359,557 |
| Change in fair value recorded in other income (expense), net | 105,320 |
| Balance at December 31, 2013 | $ 1,464,877 |
| Change in fair value recorded in other income (expense), net (unaudited) | (245,633) |
| Balance at March 31, 2014 (unaudited) | $ 1,219,244 |

The change in fair value recorded in other income (expense) for the period from August 25, 1999 (inception) through March 31, 2014 (unaudited) was $255,205.

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

**5. Related Party Convertible Promissory Notes**

***Convertible Promissory Notes Previously Converted to Preferred Stock***

During 2000, the Company issued convertible promissory notes to certain stockholders with an interest rate of 8.00% per annum for cash of $87,500. During 2001, these notes were converted into Series A convertible preferred stock (See Note 8).

During 2002 and 2003, the Company issued convertible promissory notes to certain stockholders with an interest rate of 8.00% per annum in exchange for $2,785,000. In March 2003, the Company issued convertible promissory notes to certain stockholders with an interest rate of 6% per annum in exchange for $250,000 in cash. In April 2004, the convertible promissory notes issued in 2002, 2003 and 2004, and accrued interest related to these notes totaling $3,327,971, were converted into Series B convertible preferred stock (See Note 8).

During 2007, the Company issued convertible promissory notes to certain stockholders in the amount of $1,694,158, with an interest rate of 8.50% per annum. During 2008, the Company issued convertible promissory notes to certain stockholders in the amount of $1,500,000, with an interest rate of 8.5% per annum. In March 2008, the convertible promissory notes and accrued interest related to these notes totaling $3,284,705, were converted into shares of Series C convertible preferred stock (see Note 8).

***2010 Convertible Promissory Notes***

In February and March 2010, the Company entered into convertible promissory notes with various investors for a total principal amount of $3,308,896. These notes are collateralized by substantially all of the assets of the Company and bear interest at a compounded rate of 12% per annum with a maturity date in February 2011. At December 31, 2012, December 31, 2013 and March 31, 2014 (unaudited), accrued interest for these convertible promissory notes totaled $1,363,859, $1,956,479 and $2,113,816, respectively. In April 2014, the Company amended these convertible promissory note agreements to extend the maturity date to September 30, 2015 (see Note 14). The outstanding principal and interest is convertible into the type of equity sold by the Company in the next round of equity financing under certain conditions. The number of shares issued from the conversion was to be determined by dividing the unpaid principal and accrued interest by 75% of the price per share of preferred stock issued in such financing, which would result in $1.35 per share if converted into the Series C preferred stock.

In connection with the February and March 2010 convertible notes, the Company issued a warrant for the purchase of preferred stock. The number of shares issued for the warrant is to be determined by dividing unpaid principal and accrued interest by (a) 75% of the price per share of the equity securities issued in the next round of equity financing under certain conditions or (b) if converting into Series C preferred stock, $1.35 per share. The exercise price for the warrant is 75% of the price per share of common stock issued in such financing or $1.35 per share if converted into the Series C preferred stock. The warrants are immediately exercisable and will expire 10 years from the original issuance date. The estimated fair value of the warrants at issuance was determined to be $686,446, which was recorded as a debt discount and amortized using the effective interest rate method over the term of the convertible notes.

After allocating $686,446 to the warrants issued in connection with the February and March 2010 notes as detailed above, the Company determined the fair value of the conversion option to be $686,446, which was recorded as a debt discount to the convertible notes and within additional paid-in capital. The debt discount was amortized using the effective interest rate method over the term of the convertible notes. The discount to convertible notes for the intrinsic value of conversion options embedded in debt instruments is based upon the

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

differences between the fair value of the underlying preferred stock at the commitment date of the note transaction and the effective conversion price embedded in the note.

In November 2010, the Company entered into convertible promissory notes with various investors for a total principal amount of $1,892,274. These notes are collateralized by substantially all of the assets of the Company and bear interest at a compounded rate of 12% per annum with a maturity date in February 2012. At December 31, 2012, December 31, 2013 and March 31, 2014 (unaudited), accrued interest for these convertible promissory notes totaled $551,653, $861,605 and $943,896, respectively. In April, 2014, the Company amended the convertible note agreements to extend the maturity date to September 30, 2015 (see Note 14). The outstanding principal and interest is convertible into (1) the number of shares of the preferred stock sold by the Company in the next round of equity financing under certain conditions or (2) shares of Series C preferred stock. The number of shares issued from the conversion was to be determined by dividing the unpaid principal and accrued interest by 75% of the price per share of preferred stock issued in such financing, which would result in $1.35 per share if converted into the Series C preferred stock.

In connection with the November 2010 convertible notes, the Company issued a warrant for the purchase of preferred stock. The number of shares issued for the warrant is to be determined by dividing the unpaid principal and accrued interest by (a) 75% of the price per share of the equity securities issued in the next round of equity financing under certain conditions or (b) if converting into Series C preferred stock, $1.35 per share. The exercise price for the warrant is determined by dividing the unpaid principal by 75% of the price per share of common stock issued in such financing, or $1.35 per share if converted into the Series C preferred stock. The warrants are immediately exercisable and will expire 10 years from the original issuance date. The estimated fair value of the warrants at issuance was determined to be $387,941, which was recorded as a debt discount and amortized using the effective interest rate method over the term of the convertible notes.

After allocating $387,941 to the warrants issued in connection with the November 2010 convertible notes as detailed above, the Company determined the fair value of the conversion option to be $387,942, which was recorded as a debt discount to the convertible notes and within additional paid-in capital. The debt discount was amortized using the effective interest rate method over the term of the convertible notes. The discount to convertible notes for the intrinsic value of conversion options embedded in debt instruments is based upon the differences between the fair value of the underlying preferred stock at the commitment date of the note transaction and the effective conversion price embedded in the note.

As part of the November 2010 issuance, the Company amended the February and March 2010 convertible promissory notes to extend the maturity date from February 2011 to February 2012. The Company accounted for the amendment of the February and March convertible notes under the provision of debt modification accounting. The present value of the future cash flows, under the modified terms, did not exceed the present value of the future cash flows under the original terms by more than 10%. Subsequent to the modification, the Company determined the unamortized discount as of the amendment date should be amortized using the effective interest method over the extended maturity date of February 2012.

In relation to the 2010 convertible promissory notes, the Company recognized interest expense for the years ended December 31, 2012 and 2013, and for the period from August 25, 1999 (inception) through March 31, 2014 (unaudited) of $803,048, $902,570 and $3,057,712, respectively, which was included in the balance of convertible promissory notes and accrued interest on the accompanying balance sheets at December 31, 2012 and 2013 and March 31, 2014 (unaudited). Additionally, the Company recorded interest expense in connection with the amortization of the debt discount recorded for the years ended December 31, 2012 and 2013, and for the period

from August 25, 1999 (inception) through March 31, 2014 (unaudited) of $114,345, $0 and $2,148,774, respectively. The discounts to the convertible notes were fully amortized as of December 31, 2012.

***2012 Convertible Promissory Notes***

In January 2012, the Company entered into convertible promissory notes with various investors for a total principal amount of $1,893,012. These notes are collateralized by substantially all of the assets of the Company and bear interest at a non-compounded rate of 12% per annum with a maturity date in January 2013. At December 31, 2012 and 2013 and March 31, 2014 (unaudited), accrued interest for these convertible promissory notes totaled $217,204, $444,365 and $500,378, respectively. In April 2014, the Company amended the convertible note agreements to extend the maturity date to September 30, 2015 (see Note 14). The outstanding principal and interest is convertible into (1) the number of shares of the preferred stock sold by the Company in the next round of equity financing under certain conditions or (2) shares of Series C preferred stock. The number of shares issued from the conversion was to be determined by dividing the unpaid principal and accrued interest by 75% of the price per share of the equity securities issued in the next round of equity financing under certain conditions, which would result in $1.35 per share if converted into the Series C preferred stock.

In connection with the January 2012 convertible notes, the Company issued a warrant for the purchase of preferred stock. The number of shares issued for the warrant is to be determined by dividing the unpaid principal and accrued interest by (a) 75% of the price per share of the equity securities issued in the next round of equity financing under certain conditions or (b) if converting into Series C preferred stock, $1.35 per share. The exercise price for the warrant is 75% of the price per share of common stock issued in such financing, or $1.35 per share if converted into the Series C preferred stock. The warrants are immediately exercisable and will expire 10 years from the original issuance date. The estimated fair value of the warrants at issuance was determined to be $239,786, which was recorded as a debt discount and amortized using the effective interest rate method over the term of the convertible notes. The Company estimated the fair value of its preferred stock warrant liability at issuance utilizing a Monte Carlo simulation based on expected volatility of 73% to 80%, expected time to liquidity of event of 2.00 to 7.50 years and risk-free interest rate of 0.23% to 1.07%.

After allocating $239,786 to the warrants issued in connection with the January 2012 convertible notes as discussed above, the Company determined the fair value of the conversion option to be $870,790, which was recorded as a debt discount to the convertible notes and within additional paid-in capital. The debt discount was amortized using the effective interest rate method over the term of the convertible notes. The discount to convertible notes for the intrinsic value of conversion options embedded in debt instruments is based upon the differences between the fair value of the underlying preferred stock at the commitment date of the note transaction and the effective conversion price embedded in the note.

As part of the January 2012 issuance, the Company amended the 2010 convertible promissory notes to extend the maturity date from February 2012 to January 2013. The Company accounted for the amendment of the 2010 convertible notes under the provisions of debt modification accounting. The present value of the future cash flows, under the modified terms, did not exceed the present value of the future cash flows under the original terms by more than 10%. Subsequent to the modification, the Company determined the unamortized discount as of the amendment date should be amortized using the effective interest method over the extended maturity date of January 2013.

In July 2012, the Company entered into convertible promissory notes with various investors for a total principal amount of $3,106,230. The notes are collateralized by substantially all of the assets of the Company and

**CAPNIA, INC.**

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bear interest at a non-compounded rate of 12% per annum with a maturity date in July 2013. At December 31, 2012 and 2013 and March 31, 2014 (unaudited), accrued interest for these convertible promissory notes totaled $156,248, $528,996 and $620,906, respectively. In April, 2014, the Company amended the convertible note agreements to extend the maturity date to September 30, 2015 (see Note 14). The outstanding principal and interest is convertible into (1) the number of shares of the preferred stock sold by the Company in the next round of equity financing under certain conditions or (2) shares of Series C preferred stock. The number of shares issued from the conversion was to be determined by dividing the unpaid principal and accrued interest by (a) 75% of the price per share of the equity secuirites issued in the next round of equity financing under certain conditions or (b) if converting into Series C preferred stock, $1.35 per share if converted into the Series C preferred stock.

In connection with the July 2012 convertible notes, the Company issued a warrant for the purchase of preferred stock. The number of shares issued for the warrant is to be determined by dividing the unpaid principal and accrued interest by (a) 75% of the price per share of the equity securities issued in the next round of equity financing under certain conditions or (b) if converted into Series C preferred stock, $1.35 per share. The exercise price for the warrant is 75% of the price per share of common stock issued in such financing or $1.35 per share if converted into the Series C preferred stock. The warrants are immediately exercisable and will expire 10 years from the original issuance date. The estimated fair value of the warrants at issuance was determined to be $393,462, which was recorded as a debt discount and amortized using the effective interest rate method over the term of the convertible notes. The Company estimated the fair value of its preferred stock warrant liability at issuance utilizing a Monte Carlo simulation based on the expected volatility of 73% to 80%, expected time to liquidity of event of 2.00 to 7.50 years and risk-free interest rate of 0.23% to 1.07%.

After allocating $393,462 to the warrants issued in connection with the July 2012 convertible notes as discussed above, the Company determined the fair value of the conversion option to be $1,428,872, which was recorded as a debt discount to the convertible notes and within additional paid-in capital. The debt discount was amortized using the effective interest rate method over the term of the convertible notes. The discount to convertible notes for the intrinsic value of conversion options embedded in debt instruments is based upon the differences between the fair value of the underlying preferred stock at the commitment date of the note transaction and the effective conversion price embedded in the note.

As part of the July 2012 issuance, the Company amended the 2010 and January 2012 convertible promissory notes to extend the maturity date from January 2013 to July 2013. Additionally, the 2010 and January 2012 convertible promissory notes were amended such that the outstanding principal and interest is convertible into (1) the number of shares of the preferred stock sold by the Company in the next round of equity financing under certain conditions or (2) shares of Series C preferred stock. The number of shares issued from the conversion was to be determined by dividing the unpaid principal and accrued interest by (a) 75% of the price per share of the equity securities issued in the next round of equity financing under certain conditions or (b) if converting into Series C preferred stock, $1.35 per share. The exercise price for the warrant is 75% of the price per share of common stock issued in such financing, or $1.35 per share if converted into the Series C preferred stock. The warrants issued in conjunction with the 2010 and January 2012 convertible notes were amended such that the shares issued for the warrant is to be determined by dividing the unpaid principal and accrued interest by (a) 75% of the price per share of the equity securities issued in the next round of equity financing under certain conditions or (b) if converting into Series C preferred stock, $1.35 per share if converted into the Series C preferred stock.

The Company accounted for the amendment of the 2010 and January 2012 convertible notes under the provisions of debt modification accounting. The present value of the future cash flows, under the modified terms, did not exceed the present value of the future cash flows under the original terms by more than 10%. Subsequent

to the modification, the Company determined the unamortized discount as of the amendment date should be amortized using the effective interest method over the extended maturity date of July 2013.

In relation to the 2012 convertible notes payable, the Company recognized interest expense for the years ended December 31, 2012 and 2013, and for the period from August 25, 1999 (inception) through March 31, 2014 (unaudited) of $373,451, $599,909 and $147,923, respectively, which was included in the balance of convertible promissory notes and accrued interest on the accompanying balance sheets at December 31, 2012 and 2013 and March 31, 2014 (unaudited). Additionally, the Company recorded interest expense in connection with the amortization of the debt discount recorded for the years ended December 31, 2012 and 2013, and for the period from August 25, 1999 (inception) through March 31, 2014 (unaudited) of $1,575,123, $1,357,788 and $3,177,320, respectively. The discounts to the notes were fully amortized as of December 31, 2013. The Company recorded interest expense for the three months ended March 31, 2013 and 2014 (unaudited) of $185,096 and $128,553, respectively.

As of December 31, 2012 and 2013 and March 31, 2014 (unaudited), the entire amount of outstanding convertible notes and accrued interest was due to related parties consisting of investors and the Chairman of the Board of Directors.

As of December 31, 2013 and March 31, 2014 (unaudited), all the outstanding 2010 and 2012 convertible notes were in default as the original maturity date was in July 2013. In April 2014, the 2010 and 2012 notes were amended to extend the maturity date to September 2015 (see Note 14). Because the convertible promissory notes were technically in default as of December 31, 2013 and as of March 31, 2014 (unaudited), the amounts due have been classified as a short term liability on the Company's Balance Sheet.

**6. Convertible Preferred Stock Warrants**

In January 2009, the Company entered into a note payable agreement with a financial institution which allowed for initial borrowings of $500,000 with additional borrowings of $3,500,000 available based on the Company meeting specified business targets, with both tranches at an interest rate of 9.5% per annum. The Company borrowed $500,000 under the note and repaid the $500,000 when the agreement was terminated in July 2009.

In connection with the note payable, the Company issued a warrant for the purchase of 111,111 shares of Series C convertible preferred stock ("Series C") at $1.80 per share exercisable through March 2019. The Company determined the fair value of the warrant to be $163,778 using the Black-Scholes option pricing model with the following assumptions: contractual life of 10 years, risk-free interest rate of 2.52%, volatility of 80% and no dividends. The Company determined that using alternative valuation models, such as a Monte Carlo simulation model, would result in a *de minimus* difference. The Company recorded the fair value as a discount to the note payable and as a liability on the accompanying balance sheets. The Company amortized the entire discount to interest expense in 2009 in conjunction with the termination of the note payable agreement.

In 2010 and 2012, in conjunction with the related party convertible note financings described in Note 5, the Company issued preferred stock warrants. The Company re-measures the associated fair value of the convertible preferred stock warrant liability at each reporting period.

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As of December 31, 2012 and 2013 and as of March 31, 2014 (unaudited), the Company used a Monte Carlo simulation to calculate the fair value of its convertible preferred stock warrant liability using the following inputs:

| | December 31, | | March 31, |
|---|---|---|---|
| | 2012 | 2013 | 2014 |
| | | | (unaudited) |
| Volatility | 63% - 80% | 38% - 47% | 32% - 43% |
| Expected Term (years) | 1.50 – 7.00 | 0.75 – 2.00 | 0.50 – 1.75 |
| Expected dividend yield | 0.0% | 0.0% | 0.0% |
| Risk-free rate | 0.21% - 1.18% | 0.12% - 0.38% | 0.07% - 0.36% |

In addition to the assumptions above, the Company's estimated fair value of the convertible preferred stock warrant liability is calculated using other key assumptions including the probability and value of the next equity financing, enterprise value, and discount for lack of marketability. Management, with the assistance of an independent valuation firm, makes these subjective determinations based on all available current information; however, as such information changes, so might management's determinations and such changes could have a material impact of future operating results.

As of December 31, 2012 and 2013 and as of March 31, 2014 (unaudited), outstanding convertible preferred stock warrants consisted of:

| Issuance date | Contractual Term | Exercise price per share | Number of shares outstanding underlying warrant | Fair Value at December 31, 2012 | Fair Value at December 31, 2013 | Fair Value at March 31, 2014 |
|---|---|---|---|---|---|---|
| | | | | | | (unaudited) |
| January 2009 | 10 years | $ 1.80 | 111,111 | $ 43,247 | $ 42,444 | $ 24,444 |
| February and March 2010 | 10 years | Adjustable | Adjustable | 426,996 | 461,421 | 387,580 |
| November 2010 | 10 years | Adjustable | Adjustable | 244,188 | 263,875 | 221,647 |
| January 2012 | 10 years | Adjustable | Adjustable | 244,283 | 263,978 | 221,733 |
| July 2012 | 10 years | Adjustable | Adjustable | 400,843 | 433,159 | 363,840 |
| Total | | | | $ 1,359,557 | $ 1,464,877 | $ 1,219,244 |

For the above warrants issued between February 2010 and July 2012, the number of shares issued for the warrants are to be determined by dividing the unpaid principal by (a) 75% of the price per share of the equity securities issued in the next equity financing or (b) if converting into Series C preferred stock, $1.35 per share. The exercise price for these warrants is determined by dividing the unpaid principal and accrued interest by 75% of the price per share of common stock issued in such financing or $1.35 per share if converted into the Series C preferred stock.

As of December 31, 2012 and 2013 and as of March 31, 2014 (unaudited), all warrants issued from February 2010 through July 2012 by the Company were issued to related parties consisting of investors and the Chairman of the Board. No convertible preferred stock warrants expired or were exercised during 2012, 2013 or during the three months ended March 31, 2014 (unaudited).

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

**7. Commitments and Contingencies**

***Facility Leases***

The Company leases its headquarters facility under a non-cancelable operating lease agreement set to expire in May 2015. The Company previously leased two other facilities under non-cancelable operating lease agreements that expired in January 2014 and May 2014, respectively. Rent expense was $179,000 in 2012, $304,000 in 2013, and $78,000 and $57,000 during the three months ended March 31, 2013 and March 31, 2014 (unaudited), respectively.

At December 31, 2013, the Company's future minimum commitments under non-cancelable operating leases are $111,000 for the year ended December 31, 2014. As of March 31, 2014 (unaudited), the Company's future minimum commitments under non-cancelable operating leases are $22,000.

***Contingencies***

In the normal course of business, the Company enters into contracts and agreements that contain a variety of representations and warranties and provide for general indemnifications. The Company's exposure under these agreements is unknown because it involves claims that may be made against the Company in the future, but have not yet been made. The Company accrues a liability for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated.

In 2010 the Company entered into an asset purchase agreement with BioMedical Drug Development, Inc. Pursuant to the agreement, the Company made a payment of $150,000 for the acquisition of intellectual property which the Company used to develop its product, CoSense. As part of the terms of the agreement, the Company is contingently committed to make development and sales-related milestone payments of up to $200,000 under certain circumstances, as well as single-digit-percentage royalties relating to potential planned product sales of CoSense. The amount, timing and likelihood of these payments are unknown, as they are dependent on the occurrence of future events that may or may not occur. In 2013 and during the three months ended March 31, 2014 (unaudited), the Company made no payments and incurred no liabilities in connection with the agreement, and there are no outstanding payments due as of December 31, 2013 and as of March 31, 2014 (unaudited).

***Indemnification***

In accordance with the Company's amended and restated Certificate of Incorporation and amended and restated bylaws, the Company has indemnification obligations to its officers and directors for certain events or occurrences, subject to certain limits, while they are serving at the Company's request in such capacity. There have been no claims to date and the Company has a director and officer insurance policy that may enable it to recover a portion of any amounts paid for future claims.

***Litigation***

The Company may from time to time be involved in legal proceedings arising from the normal course of business. There are no pending or threatened legal proceedings as of December 31, 2013 and as of March 31, 2014 (unaudited).

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

**8. Capital Stock**

***Common Stock:***

The Company is authorized to issue 29,500,000 shares of common stock with a par value of $0.001 per share. As of December 31, 2012 and 2013 and as of March 31, 2014 (unaudited), the Company had 6,268,834, 6,428,716 and 6,428,716 shares of common stock issued and outstanding.

The terms of the convertible promissory notes issued in 2010 included a mandatory conversion of all outstanding shares of preferred stock into shares of common stock at a conversion ratio of 1-for-1 for all holders of preferred stock who did not participate in this financing for their full pro-rata share of the funds raised in this transaction. This was implemented pursuant to an exchange agreement and stockholder vote of more than 2/3 of the then-outstanding shares of preferred stock. As a result of non-participation of certain stockholders in this financing in 2010, the Company issued 4,366,170 shares of common stock, resulting in a decrease in convertible preferred stock of $14,549,397, an increase in common stock of $4,365, and an increase in additional paid-in capital of $14,545,032.

Each share of common stock is entitled to one vote. The holders of common stock are also entitled to receive dividends whenever funds are legally available and when and if declared by the Board of Directors, subject to the prior rights of all classes of stock outstanding. The holders of common stock, voting as a separate class, are entitled to elect one member of the Board of Directors.

***Convertible Preferred Stock:***

The Company is authorized to issue 21,702,428 shares of convertible preferred stock as follows at December 31, 2012 and 2013 and March 31, 2014 (unaudited):

| Series | Par Value | Shares Authorized | Shares Outstanding |
|---|---|---|---|
| A | $ 0.001 | 459,375 | 375,000 |
| B | 0.001 | 3,743,053 | 1,429,779 |
| C | 0.001 | 17,500,000 | 8,580,616 |
| | | 21,702,428 | 10,385,395 |

In 2001, the Company issued 459,375 shares of Series A convertible stock in exchange for cash proceeds of $1,750,000 and conversion of convertible notes of $87,500. In 2004, the Company issued 2,504,363 shares of Series B convertible stock in exchange for cash proceeds of $8,692,971 and conversion of convertible notes and accrued interest of $3,327,971. In 2006, the Company issued 1,093,638 shares of Series B convertible stock in exchange for cash proceeds of $5,249,463. In 2008, the Company issued 10,694,189 shares of Series C convertible stock in exchange for cash proceeds of $15,964,835 and conversion of convertible notes and accrued interest of $3,284,705.

**CAPNIA, INC.**

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The holders of Series A, Series B and Series C, have the rights, preferences, privileges and restrictions as follows:

*Voting:*

The holders of each share of Series A, Series B and Series C are entitled to voting rights equal to the number of shares of common stock into which each share of preferred stock could be converted. So long as at least 1,000,000 shares are outstanding, the holders of Series A, Series B and Series C, voting together as a single class, are entitled to elect three members of the Board of Directors. The holders of common stock, voting as a separate class, are entitled to elect one member of the Board of Directors. The holders of Series A, Series B, Series C and common stock, voting together as a single class on an as converted basis, are entitled to elect the remaining members of the Board of Directors.

Certain actions require the vote or written consent of at least two-thirds of the holders of preferred stock, including, but not limited to, the following: any amendment, alteration or appeal of the Certificate of Incorporation or the Bylaws of the Company that alters or changes the rights or restrictions of the preferred stock; any increase or decrease in the authorized number of shares of preferred stock; any distributions with respect to common stock or preferred stock; any agreement by the Company or its stockholders regarding asset transfer or acquisition; creation of any new class or series of shares having rights, preferences or privileges and voting rights for the Board of Directors, which are better than existing preferred stock.

*Dividends:*

The holders of Series A, Series B and Series C are entitled to receive non-cumulative dividends as adjusted for stock splits, dividends, reclassifications or the like, prior and in preference to any declaration or payment of any dividends to the holders of common stock, when and if declared by the Board of Directors, at a rate of $0.32, $0.384, and $0.144, respectively, per share, as adjusted, per annum. No dividends have been declared or paid as of and 2012.

*Conversion:*

Each share of Series A, Series B and Series C is convertible to common stock, at the option of the holder, at any time after the date of issuance. Each share of Series A, Series B and Series C converts into that number of shares of common stock determined in accordance with the conversion ratio (i) immediately prior to the closing of a public offering of common stock provided that the offering price per share is not less than $6.30 (adjusted for recapitalizations) and gross proceeds to the Company are not less than $30,000,000 or (ii) upon the written request by the Company from the holders of two thirds of the preferred stock outstanding. The initial conversion price is equal to the original issuance price of Series A, Series B and Series C, as adjusted. At December 31, 2012 and 2013 and March 31, 2014 (unaudited), the conversion price is $4.00, $4.80 and $1.80 per share, for Series A, Series B and Series C, respectively.

*Liquidation:*

In the event of any liquidation, dissolution, or winding up of the Company, either voluntary or involuntary, the holders of Series A, Series B and Series C are entitled to receive, prior to and in preference to holders of common stock, an amount per share equal to $4.00, $4.80 and $1.80, respectively, as adjusted for stock splits, stock dividends, reclassifications or the like. If, upon occurrence of such an event, the assets and

**CAPNIA, INC.**

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funds distributed among the holders of Series A, Series B and Series C are insufficient to permit the above payment to such holders, then the entire assets and funds of the Company legally available for distribution will be distributed ratably among the holders of Series A, Series B and Series C in proportion to the preferential amount each such holder is otherwise entitled to receive.

Following the above payments, the remaining assets and surplus funds of the Company, if any, will be distributed ratably among the holders of Series A, Series B, Series C and common stock based on the number of shares of common stock held on an as-if converted basis.

*Redemption:*

The holders of Series A, Series B and Series C are entitled to require the Company to redeem their shares, at any time after March 20, 2012, upon the approval of at least two thirds of the holders of shares of Series A, Series B and Series C then outstanding, voting together as a single class. The redemption will be effected in two annual payments beginning no later than 45 days after the Company receives the redemption notice. The redemption price is equal to $4.00, $4.80 and $1.80 per share for Series A, Series B and Series C, respectively, as adjusted, plus all declared or accrued but unpaid dividends. As of December 31, 2013 and as of March 31, 2014 (unaudited), the total redemption price for Series A, Series B and Series C shares outstanding was $23,808,048.

**9. Stock Option Compensation**

***Stock Option Plan***

The Company has adopted the 1999 Incentive Stock Plan, the 2010 Equity Incentive Plan, and the 2014 Equity Incentive Plan (together, the Plans). The 1999 Incentive Stock Plan expired in 2009, and the 2010 Equity Incentive Plan has been closed to new issuances. Therefore, the Company may issue options to purchase shares of common stock to employees, directors, and consultants only under the 2014 Equity Incentive Plan. Options granted under the 2010 Plan and 2014 Plan may be incentive stock options (“ISOs”) or nonqualified stock options (“NSOs”). ISOs may be granted only to Company employees and directors. NSOs may be granted to employees, directors, advisors, and consultants. The Board of Directors has the authority to determine to whom options will be granted, the number of options, the term, and the exercise price.

Options are to be granted at an exercise price not less than fair value for an ISO or 85% of fair value for an NSO. For individuals holding more than 10% of the voting rights of all classes of stock, the exercise price of an option will not be less than 110% of fair value. Fair value is determined by the Board of Directors. The vesting period is normally monthly over a period of four years from the vesting date. The term of an option is no longer than five years for ISOs for which the grantee owns greater than 10% of the voting power of all classes of stock and no longer than ten years for all other options.

The Company recognized stock-based compensation expense related to options granted to employees for the years ended December 31, 2012 and 2013, and for the period from August 25, 1999 (inception) through December 31, 2013 and through March 31, 2014 (unaudited) of $24,415, $14,431, $479,606 and $491,098, respectively. The compensation expense is allocated on a departmental basis, based on the classification of the option holder. No income tax benefits have been recognized in the statements of operations for stock-based compensation arrangements as of December 31, 2013 and March 31, 2014 (unaudited).

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The Company did not grant any stock options in 2012 or 2013. The Company granted 152,200 options to purchase common stock in February 2014. The fair value of each award granted was estimated on the date of grant using the Black-Scholes option pricing model with the following assumptions for the period from August 25, 1999 (inception) through March 31, 2014 (unaudited):

| | Three Months Ended March 31, 2014 | August 25, 1999 (inception) through March 31, 2014 |
|---|---|---|
| Expected life (years) | 6.08 | 6.02 - 6.25 |
| Risk-free interest rate | 1.80% | 1.9% - 4.9% |
| Volatility | 80% | 75% - 80% |
| Dividend rate | 0% | 0% |

The most recent independent third-party valuation of the Company's common stock found $0.63 to be the fair market value as of December 31, 2013 and $0.76 per share to be the fair market value as of March 31, 2014 (unaudited).

Expected volatility is based on volatilities of public companies operating in the Company's industry. The expected life of stock options represents the average of the contractual term of the options and the weighted-average vesting period, as permitted under the simplified method. The Company has elected to use the simplified method, as the Company does not have enough historical exercise experience to provide a reasonable basis upon which to estimate the expected term and the stock option grants are considered "plain vanilla" options. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant.

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The following table summarizes stock option transactions from August 25, 1999 (inception) through March 31, 2014 (unaudited) as issued under the Plans:

| | | Options Outstanding | |
|---|---|---|---|
| | Options Available | Number of Shares | Average Exercise Price |
| Balances, August 25, 1999 (inception) | — | — | $ — |
| Authorized | 4,755,324 | — | — |
| Granted | (4,868,192) | 4,868,192 | 0.37 |
| Exercised | — | (341,153) | 0.43 |
| Cancelled | 1,458,678 | (1,458,678) | 0.53 |
| Balances, December 31, 2010 | 1,345,810 | 3,068,361 | 0.29 |
| Granted | (115,000) | 115,000 | 0.15 |
| Cancelled | 100,000 | (100,000) | 0.22 |
| Balances, December 31, 2011 | 1,330,810 | 3,083,361 | 0.29 |
| Exercised | — | (40,791) | 0.68 |
| Cancelled | 85,520 | (85,520) | 0.31 |
| Balances, December 31, 2012 | 1,416,330 | 2,957,050 | $ 0.28 |
| Cancelled | 81,563 | (81,563) | 0.15 |
| Balances, December 31, 2013 | 1,497,893 | 2,875,487 | $ 0.28 |
| Granted (unaudited) | (152,200) | 152,200 | 0.63 |
| Exercised (unaudited) | — | — | — |
| Cancelled (unaudited) | 188,437 | (188,437) | 0.33 |
| Balances, March 31, 2014 (unaudited) | 1,534,130 | 2,839,250 | $ 0.28 |

At December 31, 2012 and 2013 and as March 31, 2014 (unaudited), there were 2,647,996, 2,787,625 and 2,634,110 shares, respectively, vested with a weighted-average exercise price of $0.30, $0.29 and $0.28 per share, respectively, and a weighted average contractual life of 5.94, 4.86 and 5.07 years, respectively.

Future stock-based compensation for unvested employee options granted and outstanding as of December 31, 2012 and 2013 and as March 31, 2014 (unaudited) is $26,082, $8,287 and $43,543, respectively, to be recognized over a remaining requisite service period of 1.39, 0.42 and 0.46 years, respectively.

The fair value of an equity award granted to a non-employee generally is determined in the same manner as an equity award granted to an employee. In most cases, the fair value of the equity securities granted is more reliably determinable than the fair value of the goods or services received. Stock-based compensation related to its grant of options to non-employees has not been material to date.

In 2009, the Company granted options to non-employees to purchase 51,875 shares of common stock at $0.29 per share. These options were not granted under either of the stock option plans. As such, they are not included in the above option table. The options vest ratably over 48 months and expire in March 2019. In 2009, the Company determined the value of these options to be $10,567 using the Black-Scholes option pricing model, assuming a contractual life of 6.25 years, risk free rate from 2.02%, volatility of 80%, and no dividends during the expected life. The Company recognized $2,642 of stock-based compensation in 2012, and no stock-based compensation expense in 2013 or the first three months of 2014 (unaudited). At December 31, 2013, all of the 51,875 shares were vested.

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**(Continued)**

***Restricted Stock***

In 2010, the Company granted 319,810 shares of restricted common stock to BDDI subject to an asset purchase agreement for intellectual property. Per the terms of the agreement, 50% of the shares were vested as of the effective date and the remaining 50% were to be released from the Company's repurchase option upon 510(k) clearance of CoSense. In late 2012, upon receiving 510(k) clearance for CoSense, this right of repurchase covering the remaining 50% of the shares lapsed, and in early 2013 the Company recorded the expense associated with this lapsing of the right of repurchase. Upon the issuance of 159,905 shares of common stock in 2010, the Company recognized $15,991 of compensation expense based on the fair value of common stock of $0.10 per share. Upon the issuance of 159,905 shares of common stock in 2013, the Company recognized compensation expense of $23,986 based on the fair value of common stock of $0.15 per share. The fair value of the common stock underlying stock-based awards was determined on each grant date by the Board of Directors, with input from management.

**10. GSK License Agreement**

In 2013, the Company entered into a license agreement with GSK in which GSK was to develop and commercialize the Company's product, Serenz, on a world-wide basis. In the first three months of 2013 (unaudited), the Company recognized license revenue of $3,000,000 due to a non-refundable payment upon execution of the agreement. In June 2014, the GSK agreement terminated and the licensed rights to Serenz were returned to the Company. Accordingly, the Company does not expect additional revenue to result from this agreement. Because the upfront payment was non-refundable, the Company is not obligated to return any of the funds as a result of the termination of the agreement. The Company does not have any continuing obligations under the GSK agreement.

**11. Income Taxes**

Due to net losses in each year, the Company had no material current, deferred, or total income tax expense in the years December 31, 2012 and 2013 and during the three months ended March 31, 2013 and 2014 (unaudited). A reconciliation of income tax expense with amounts determined by applying the statutory U.S. federal income tax rate to income before income taxes is as follows:

| | Years Ended December 31, | |
|---|---|---|
| | 2012 | 2013 |
| Tax on the loss before income tax expense computed at the federal statutory rate of 34% | $(2,203,569) | $(1,260,190) |
| Tax on the loss before income tax expense computed at the state statutory rate of 8.84% | (321,703) | 43,265 |
| Change in Valuation Allowance | 2,003,285 | 770,237 |
| Change in research and development credits | (71,856) | (71,856) |
| Other | 594,643 | 519,344 |
| Income tax expenses | $ 800 | $ 800 |
| Effective income tax rate | 0% | 0% |

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred tax assets and liabilities are as follows for the years ended December 31, 2012 and 2013:

| | Years Ended December 31, | |
|---|---|---|
| | 2012 | 2013 |
| Current Deferred Tax Assets: | | |
| Accruals | $ 55,822 | $ 36,571 |
| Non-Current Deferred Tax Assets: | | |
| Net Operating Loss Carryforwards | 19,440,979 | 20,124,059 |
| Research and development credits | 1,675,423 | 1,792,798 |
| Intangible Assets | 57,323 | 48,733 |
| Fixed Assets | 1,741 | (636) |
| Total Non-Current Deferred Tax Assets | 21,175,466 | 21,964,954 |
| Total Deferred Tax Assets | 21,231,288 | 22,001,525 |
| Valuation Allowance | (21,231,288) | (22,001,525) |
| Net Deferred Tax Assets | $ — | $ — |

The Company recorded an increase in the valuation allowance of $2,003,285, and $779,869, to fully reserve the net deferred tax assets in the years ended December 31, 2012 and 2013, respectively.

The Company has federal and state net operating loss carry-forwards for income tax purposes at December 31, 2012 of $48,898,325 and $48,257,731, respectively. The Company has federal and state net operating loss carry-forwards for income tax purposes at December 31, 2013 of $51,155,500 and $46,811,824, respectively, both of which expire beginning in 2019. At December 31, 2012 the Company had federal and state research and development tax credits totaling $1,152,002 and $793,062, respectively. Additionally, at December 31, 2013, the Company had federal and state research and development tax credits totaling $1,223,857 and $862,032, respectively. The federal tax credits may be carried forward until 2024. The state tax credits may be carried forward indefinitely.

Section 382 of the Internal Revenue Code limits the use of net operating loss and income tax credit carry-forwards in certain situations where changes occur in the stock ownership of a company. If the Company should have an ownership change of more than 50% of the value of the Company's capital stock, utilization of the carryforwards could be restricted. The Company is currently assessing the impact of Section 382 on the future utilization of these carryforwards and believes that a significant amount of the carryforwards may be subject to the restrictions. The Company has established a full valuation allowance against its deferred tax assets.

The Company files income tax returns in the U.S. federal jurisdiction and certain state jurisdictions. In the normal course of business, the Company is subject to examination by federal, state and local jurisdictions, where applicable. In the U.S. federal jurisdiction, tax years 1999 forward remain open to examination, and in the state tax jurisdiction, years 2004 forward remain open to examination.

As a result of the expiration of the Company's net operating loss carry-forwards, the Company has adopted the provisions set forth in FASB ASC Topic 740, to account for uncertainty in income taxes. In the preparation of income tax returns in federal and state jurisdictions, the Company asserts certain tax positions

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

based on its understanding and interpretation of the income tax law. The taxing authorities may challenge such positions, and the resolution of such matters could result in recognition of income tax expense in the Company's financial statements. Management believes it has used reasonable judgments and conclusions in the preparation of its income tax returns.

The Company uses the "more likely than not" criterion for recognizing the tax benefit of uncertain tax positions and to establish measurement criteria for income tax benefits. The Company has determined it has no material unrecognized assets or liabilities related to uncertain tax positions as of December 31, 2012 and 2013. The Company does not anticipate any significant changes in such uncertainties and judgments during the next 12 months. In the event the Company should need to recognize interest and penalties related to unrecognized tax liabilities, this amount will be recorded as a component of other expense.

**12. Defined Contribution Plan**

The Company sponsors a 401(k) Plan, which stipulates that eligible employees can elect to contribute to the 401(k) Plan, subject to certain limitations of eligible compensation. The Company may match employee contributions in amounts to be determined at the Company's sole discretion. To date, the Company has not made any matching contributions.

**13. Net income (loss) per share**

Basic net income (loss) per share is computed by dividing net income (loss) by the weighted-average number of common stock actually outstanding during the period. Diluted net income (loss) per share is computed by dividing net income (loss) by the weighted-average number of common stock outstanding and dilutive potential common stock that would be issued upon the conversion of preferred stock. For the years ended December 31, 2012 and 2013, and for the three months ended March 31, 2014 (unaudited), the effect of issuing the potential common stock is anti-dilutive due to the net losses in those period and the number of shares used to compute basic and diluted earnings per share are the same for each of those periods.

The following is a reconciliation of the number of shares used in the calculation of basic earnings per share and diluted earnings per share in the years ended December 31, 2012 and 2013 and during the three months ended March 31, 2013 and 2014 (unaudited):

| | December 31, | | March 31, | |
|---|---|---|---|---|
| | 2012 | 2013 | 2013 | 2014 |
| | | | (unaudited) | |
| Net income (loss) | $(6,481,884) | $(3,707,243) | $ 1,014,010 | $ (833,865) |
| Interest accrued on convertible notes | — | — | 378,441 | — |
| Net income (loss) as adjusted | $(6,481,884) | $(3,707,243) | $ 1,392,451 | $ (833,865) |
| Weighted-average shares outstanding: | | | | |
| Basic | 6,244,230 | 6,428,278 | 6,426,939 | 6,428,716 |
| Effect of dilutive common stock equivalents: | | | | |
| Dilutive effect of conversion of convertible preferred stock | — | — | 10,385,395 | — |
| Dilutive effect of options to purchase common stock | — | — | 386,202 | — |
| Dilutive effect of stock issuable upon conversion of convertible notes | — | — | 7,555,861 | — |
| Dilutive effect of warrants to purchase convertible preferred stock | — | — | 2,312,848 | — |
| Shares used in computing diluted net income (loss) per common share | 6,244,230 | 6,428,278 | 27,067,245 | 6,428,716 |
| Basic net income (loss) per common share | $ (1.04) | $ (0.58) | $ 0.16 | $ (0.13) |
| Diluted net income (loss) per common share | $ (1.04) | $ (0.58) | $ 0.05 | $ (0.13) |

**CAPNIA, INC.**

**NOTES TO FINANCIAL STATEMENTS**
**(Continued)**

The following are shares of common stock that would be issued if all options and warrants were exercised. These potential shares of common stock have not been included in the calculation of fully diluted shares outstanding, because the effect of including them would be anti-dilutive.

| | December 31, | | March 31, | |
|---|---|---|---|---|
| | 2012 | 2013 | 2013 | 2014 |
| | | | (unaudited) | |
| Convertible preferred stock | 10,385,395 | 10,385,395 | — | 10,385,395 |
| Options to purchase common stock | 2,957,050 | 2,927,362 | 2,000,020 | 2,989,250 |
| Warrants to purchase convertible preferred stock | 111,111 | 111,111 | 111,111 | 111,111 |
| | 13,453,556 | 13,423,868 | 2,111,131 | 13,485,756 |

**14. Subsequent Events (unaudited)**

The Company evaluated subsequent events through June 7, 2014, the date of the issuance of these financial statements.

In April 2014, the Company received cash proceeds of $1,750,000 in exchange for convertible promissory notes issued to existing investors and warrants to purchase convertible preferred stock. The notes bear interest at the rate of 2% per annum. The convertible notes principal amount plus any accrued interest thereon is due on September 30, 2015 following the occurrence of demand by two-thirds of the holders of the total principal amounts of convertible promissory notes outstanding. The convertible notes participate pari passu with the 2010 and 2012 convertible promissory notes (see Note 5) upon repayment of the outstanding convertible promissory notes. In conjunction with the April 2014 issuance of convertible promissory notes, the Company amended the 2010 and 2012 convertible notes to provide for the extension of the maturity date to September 30, 2015.

Also in April 2014, GSK gave notice of their intention to terminate the license agreement with the Company, which became effective in June 2014, following which the licensed rights to Serenz were returned to the Company.

Subsequent to May 7, 2014, the Company signed a sublease for an office in Redwood City, California. The agreement is for one year commencing June 1, 2014, with an option to renew to June 2018. The company prepaid rent for the last four months of the initial lease term. Minimum payments under the agreement are $199,089 in calendar 2014 and $18,099 in calendar 2015.

**Units, Each Consisting Of**
**One Share of Common Stock and a**
**Warrant to Purchase One Share of Common Stock**


*Sole Book-Running Manager*
**Maxim Group LLC**

*Co-Manager*
**Cantor Fitzgerald & Co.**

The date of this prospectus is , 2014.

## PART II

## INFORMATION NOT REQUIRED IN THE PROSPECTUS

### ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth all expenses to be paid by the Registrant, other than underwriting discounts and commissions, upon completion of this offering. All amounts shown are estimates except for the SEC registration fee and the FINRA filing fee.

| | Amount To Be Paid |
|---|---|
| SEC registration fee | $ 2,962.40 |
| FINRA filing fee | 3,950.00 |
| Nasdaq Capital Market listing fee | 5,000.00 |
| Printing and engraving | * |
| Legal fees and expenses | * |
| Accounting fees and expenses | * |
| Blue sky fees and expenses (including legal fees) | * |
| Transfer agent and registrar fees | * |
| Miscellaneous | * |
| Total | $ |

* To be filed by amendment.

### ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the General Corporation Law of the State of Delaware, or DGCL, provides for the indemnification of officers, directors, and other corporate agents in terms sufficiently broad to indemnify such persons under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act of 1933. Article of the Registrant's Restated Certificate of Incorporation (Exhibit 3.1(b) hereto), and Article of the Registrant's Amended and Restated Bylaws (Exhibit 3.2(b) hereto), provide for indemnification of the Registrant's directors, officers, employees and other agents to the extent and under the circumstances permitted by the DGCL. The Registrant has also entered into agreements with its directors and officers that will require the Registrant, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers to the fullest extent not prohibited by law.

The Underwriting Agreement (Exhibit 1.1 hereto) provides for indemnification by the Underwriters of us and our directors and officers for certain liabilities, including liabilities arising under the Securities Act of 1933, or Securities Act, and affords certain rights of contribution with respect thereto.

### ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES.

Since January 1, 2011, the Registrant has issued the following unregistered securities:

- On January 17, 2012, January 20, 2012, July 31, 2012 and August 6, 2012, the Registrant: (i) issued and sold convertible promissory notes in the aggregate principal amount of $4,999,152.80 to 18 of its existing stockholders or their affiliates; and (ii) issued and sold warrants to purchase shares of capital stock of the Registrant to such existing stockholders or their affiliates.

- On April 28, 2014, the Registrant also: (i) issued and sold convertible promissory notes in the aggregate principal amount of $1,749,429.14 to 18 of its existing stockholders or their affiliates; and (ii) issued and sold warrants to purchase shares of capital stock of the Registrant to such existing stockholders or their affiliates.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions or any public offering. The Registrant believes that these transactions were exempt from the registration requirements of the Securities Act under Section 4(2) of the Securities Act as transactions by an issuer not involving any public offering. The recipients of securities in each of these transactions represented their intention to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof and appropriate legends were affixed to the stock certificates and instruments issued in such transactions. All recipients had adequate access, through their relationships with us, to information about us.

- From January 1, 2011 to December 31, 2013, the Registrant granted to its officers, directors, employees, consultants and other service providers options to purchase an aggregate of 115,000 shares of common stock under its 2010 Equity Incentive Plan, each at an exercise price of $0.15 per share.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions or any public offering. The Registrant believes that these transactions were exempt from the registration requirements of the Securities Act under Rule 701 promulgated under the Securities Act as offers and sales of securities pursuant to certain compensatory benefit plans and contracts relating to compensation in compliance with Rule 701. The recipients of securities in these transactions represented their intention to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof and appropriate legends were affixed to the stock certificates and instruments issued in such transactions. All recipients had adequate access, through their relationships with us, to information about us.

**ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.**

***(a) Exhibits.***

We have filed the exhibits listed on the accompanying Exhibit Index of this Registration Statement, which is incorporated by reference herein.

***(b) Financial Statement Schedules.***

All financial statement schedules are omitted because the information called for is not required or is shown either in the consolidated financial statements or in the notes thereto.

**ITEM 17. UNDERTAKINGS.**

The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) If the Registrant is relying on Rule 430B (§230.430B of this chapter):

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

(ii) If the Registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability of the Registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned Registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this

registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

The undersigned Registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers, and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer, or controlling person of the Registrant in the successful defense of any action, suit, or proceeding) is asserted by such director, officer, or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Redwood City, State of California, on this 1st day of July, 2014.

**CAPNIA, INC.**

By: /s/ Anish Bhatnagar
Name: Anish Bhatnagar
Title: President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed below by the following persons in the capacities and on the dates indicated.

| Signature | Title | Date |
|---|---|---|
| /s/ Anish Bhatnagar<br>Anish Bhatnagar | President, Chief Executive Officer and Director<br>(Principal Executive Officer) | July 1, 2014 |
| /s/ Antoun Nabhan<br>Antoun Nabhan | Vice President of Corporate Development<br>(Principal Financing and Accounting Officer) | July 1, 2014 |
| *<br>Ernest Mario | Chairman | July 1, 2014 |
| *<br>Edgar G. Engleman | Director | July 1, 2014 |
| *<br>Steinar J. Engelsen | Director | July 1, 2014 |
| *<br>Stephen Kirnon | Director | July 1, 2014 |
| *<br>William James Alexander | Director | July 1, 2014 |
| *<br>William G. Harris | Director | July 1, 2014 |

*By: /s/ Anish Bhatnagar
Anish Bhatnagar
*Attorney-in-Fact*

Table of Contents

## EXHIBIT INDEX

| Exhibit Number | Description of Exhibit |
|---|---|
| 1.1* | Form of Underwriting Agreement. |
| 3.1 | Amended and Restated Certificate of Incorporation of the Registrant, as amended and currently in effect. |
| 3.2 | Form of Amended and Restated Certificate of Incorporation of the Registrant, to be in effect upon completion of the offering. |
| 3.3 | Bylaws of the Registrant, as currently in effect. |
| 3.4 | Form of Amended and Restated Bylaws of the Registrant, to be in effect upon completion of the offering. |
| 4.1* | Form of the Registrant's common stock certificate. |
| 4.2 | Amended And Restated Investors' Rights Agreement, dated March 20, 2008, by and among the Registrant and certain holders of the Registrant's capital stock named therein. |
| 4.3* | Form of Warrant Agreement. |
| 4.4* | Form of Warrant associated with item 4.3. |
| 4.5* | Form of Underwriter Compensation Warrant. |
| 4.6# | Form of Convertible Promissory Note issued in February 2010 and March 2010 in connection with the Registrant's 2010 convertible note financing. |
| 4.7# | Form of Warrant to Purchase Shares issued in February 2010 and March 2010 in connection with the Registrant's 2010 convertible note financing. |
| 4.8# | Form of Convertible Promissory Note issued in November 2010 in connection with the Registrant's 2010 convertible note financing. |
| 4.9# | Form of Warrant to Purchase Shares issued in November 2010 in connection with the Registrant's 2010 convertible note financing. |
| 4.10# | Form of Convertible Promissory Note issued in January 2012 in connection with the Registrant's 2012 convertible note financing. |
| 4.11# | Form of Warrant to Purchase Shares issued in January 2012 in connection with the Registrant's 2012 convertible note financing. |
| 4.12# | Form of Convertible Promissory Note issued in July 2012 and August 2012 in connection with the Registrant's 2012 convertible note financing. |
| 4.13# | Form of Warrant to Purchase Shares issued in July 2012 and August 2012 in connection with the Registrant's 2012 convertible note financing. |
| 4.14# | Form of Convertible Promissory Note issued in April 2014 in connection with the Registrant's 2014 convertible note financing. |
| 4.15# | Form of Warrant to Purchase Shares issued in April 2014 in connection with the Registrant's 2014 convertible note financing. |
| 5.1* | Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation. |
| 10.1# | Form of Indemnification Agreement between the Registrant and each of its directors and executive officers. |
| 10.2# | 1999 Incentive Stock Plan and forms of agreements thereunder. |
| 10.3# | 2010 Equity Incentive Plan and forms of agreements thereunder. |
| 10.4 | 2014 Equity Incentive Plan and forms of agreements thereunder. |
| 10.5 | 2014 Employee Stock Purchase Plan and forms of agreements thereunder. |
| 10.6# | Offer Letter, dated June 22, 2007, by and between the Registrant and Ernest Mario, Ph.D. |
| 10.7# | Employment Agreement, dated April 6, 2010, by and between the Registrant and Anish Bhatnagar. |
| 10.8# | Offer Letter, dated May 29, 2013, between the Registrant and Anthony Wondka. |
| 10.9# | Offer Letter, dated April 17, 2014, by and between the Registrant and Antoun Nabhan. |
| 10.10# | Asset Purchase Agreement dated May 11, 2010, by and between the Registrant and BioMedical Drug Development Inc. |
| 10.11# | Convertible Note and Warrant Purchase Agreement, dated February 10, 2010, by and among the Registrant and the investors named therein. |

| Exhibit Number | Description of Exhibit |
|---|---|
| 10.12# | Amendment No. 1 to Convertible Note and Warrant Purchase Agreement, Convertible Promissory Notes and Warrants to Purchase Shares, dated November 10, 2010, by and among the Registrant and the investors named therein. |
| 10.13# | Amendment No. 2 to Convertible Note and Warrant Purchase Agreement, Convertible Promissory Notes and Warrants to Purchase Shares, dated January 17, 2012, by and among the Registrant and the investors named therein. |
| 10.14# | Convertible Note and Warrant Purchase Agreement, dated January 16, 2012, by and among the Registrant and the investors named therein. |
| 10.15# | Omnibus Amendment to Convertible Note and Warrant Purchase Agreement, Convertible Promissory Notes and Warrants to Purchase Shares, dated July 31, 2012, by and among the Registrant and the investors named therein. |
| 10.16# | Omnibus Amendment to Convertible Promissory Notes and Warrants to Purchase Shares, dated April 28, 2014, by and among the Registrant and the investors named therein. |
| 10.17# | Convertible Note and Warrant Purchase Agreement, dated April 28, 2014, by and among the Registrant and the investors named therein. |
| 10.18# | Omnibus Amendment to Convertible Note and Warrant Purchase Agreement, Convertible Promissory Notes and Warrants to Purchase Shares, dated May 5, 2014, by and among the Registrant and the investors named therein. |
| 10.19 | Sublease, dated May 20, 2014, by and among the Registrant and Silicon Valley Finance Group. |
| 23.1* | Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibit 5.1). |
| 23.2 | Consent of Marcum LLP |
| 24.1# | Power of Attorney (included in the signature page of this Registration Statement). |

* To be filed by amendment.
\# Previously filed.

**Exhibit 3.1**

**AMENDED AND RESTATED**

**CERTIFICATE OF INCORPORATION OF**

**CAPNIA, INC.**

Capnia, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies that:

A. The name of the Corporation is Capnia, Inc. The Corporation's original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on August 25, 1999.

B. This Amended and Restated Certificate of Incorporation ("Restated Certificate") was duly adopted in accordance with Sections 242 and 245 of the General Corporation Law of the State of Delaware, and restates, integrates and further amends the provisions of the Corporation's Certificate of Incorporation.

C. The text of the Certificate of Incorporation is amended and restated to read as set forth in EXHIBIT A attached hereto.

IN WITNESS WHEREOF, Capnia, Inc. has caused this Restated Certificate to be signed by Ernest Mario, a duly authorized officer of the Corporation, on February 5, 2010.

/s/ Ernest Mario
Ernest Mario,
Chief Executive Officer

## ARTICLE I

The name of this Corporation is Capnia, Inc.

## ARTICLE II

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the DGCL.

## ARTICLE III

The Corporation is to have perpetual existence.

## ARTICLE IV

The address of the Corporation's registered office in the State of Delaware is 1209 Orange Street, City of Wilmington, County of New Castle, State of Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

## ARTICLE V

1. Authorized Capital. The Corporation is authorized to issue two classes of stock to be designated, respectively, "Common Stock" and "Preferred Stock." The total number of shares of Common Stock the Corporation shall have authority to issue is 29,500,000 with a par value of $0.001 per share. The total number of shares of Preferred Stock the Corporation shall have authority to issue is 21,702,428 with a par value of $0.001 per share, of which 459,375 shall be designated Series A Preferred Stock, 3,743,053 shall be designated Series B Preferred Stock and 17,500,000 shall be designated Series C Preferred Stock.

2. Dividends. The relative rights, preferences, privileges, limitations and restrictions granted to or imposed on the respective classes and/or series of the shares of capital stock or the holders thereof are as follows.

(A) Preferred Stock Preference. The holders of the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock shall be entitled to receive dividends, on a pari passu basis, out of any funds legally available therefor, prior and in preference to any declaration or payment of any dividend (payable other than in Common Stock or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly, additional shares of Common Stock (hereinafter referred to as "Common Stock Equivalents")) on the Corporation's Common Stock, at the rate of (i) in the case of the Series A Preferred Stock, 8% of the Series A Original Issue Price per annum, (ii) in the case of the Series B Preferred Stock, 8% of the Series B Original Issue Price per annum, and (iii) in the case of the Series C Preferred Stock, 8% of the Series C Original Issue Price per annum. Such dividends shall be payable when, as and if declared by the Corporation's Board of Directors (the "Board"), and shall not be cumulative.

(B) Additional Dividends. After the payment or setting aside for payment of the dividends described in Section 2(A), any additional dividends (other than Common Stock Equivalents) declared or paid in any fiscal year shall be declared or paid among the holders of the Preferred Stock and Common Stock then outstanding in proportion to the greatest whole number of shares of Common Stock which would be held by each such holder if all shares of Preferred Stock were converted at the then-effective Conversion Rate (as defined in Section 4(A) hereof).

3. Liquidation Preference. In the event of any liquidation, dissolution or winding up of the Corporation, either voluntary or involuntary, distributions to the Corporation's stockholders shall be made in the following manner:

(A) Preferred Stock Preference. The holders of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock shall be entitled to receive, on a pari passu basis, prior and in preference to any distribution of any of the Corporation's assets or surplus funds to the holders of the Corporation's Common Stock, an amount equal to (i) in the case of the Series A Preferred Stock, $4.00 per share (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations or similar events with respect to such share) (the "Series A Original Issue Price"), plus an additional amount equal to any dividends declared but unpaid on each such share, (ii) in the case of the Series B Preferred Stock, $4.80 per share (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations or similar events with respect to such share) (the "Series B Original Issue Price"), plus an additional amount equal to any dividends declared but unpaid on each such share, and (iii) in the case of the Series C Preferred Stock, $1.80 per share (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations or similar events with respect to such share) (the "Series C Original Issue Price"), plus an additional amount equal to any dividends declared but unpaid on each such share. If, upon such liquidation, dissolution or winding up of the Corporation, the assets and funds distributed are insufficient to permit the payment to each holder of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock of the full aforesaid preferential amount, the entire assets and funds legally available for distribution shall be distributed ratably among such holders in proportion to the preferential amount each such holder is otherwise entitled to receive. The Series A Original Issue Price, the Series B Original Issue Price and the Series C Original Issue Price are sometimes collectively referred to herein as the "Original Issue Price".

(B) Remaining Assets. Upon the completion of the distribution required by subsection (A) of this Section 3, the Corporation's remaining assets and funds available for distribution to stockholders shall be distributed ratably to the holders of Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock and Common Stock based on the number of shares of Common Stock held by each such holder (assuming full conversion into Common Stock of the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock).

(C) (1) Unless otherwise determined in writing by the holders of at least two-thirds (2/3) of the Preferred Stock then outstanding, for the purposes of this Section 3, a liquidation, dissolution or winding up of the Corporation shall be deemed to include (X) the acquisition of the Corporation by another entity by means of any transaction or series of related transactions (including, without limitation, any merger, consolidation or other form of reorganization) in which outstanding shares of the Corporation are exchanged for or converted into securities or other

consideration issued, or caused to be issued, by the acquiring entity or its affiliate, unless the Corporation's stockholders of record as constituted immediately prior to such transaction or series of related transactions will, immediately after such transaction or series of related transactions, hold at least a majority of the voting power of the surviving or acquiring entity on account of shares held by them prior to such transaction or series of related transactions or (Y) a sale, lease or other disposition of all or substantially all of the assets of the Corporation.

(2) In any of such events, if the consideration received by the Corporation is other than cash, its value will be deemed its fair market value. Any securities shall be valued as follows:

(a) For securities not subject to investment letter or other similar restrictions on free marketability,

(i) if traded on a securities exchange or The Nasdaq Global Market, the value shall be deemed to be the average of the closing prices of the securities on such exchange or market over the 30-day period ending three (3) days prior to the closing of such transaction;

(ii) if actively traded over-the-counter, the value shall be deemed to be the average of the closing bid prices of the securities over the 30-day period ending three (3) days prior to the closing of such transaction; and

(iii) if there is no active public market, the value shall be the fair market value thereof, as determined in good faith by the Board.

(b) The method of valuation of securities subject to investment letter or other restrictions on free marketability (other than restrictions arising solely by virtue of a stockholder's status as an affiliate or former affiliate) shall take into account an appropriate discount (as determined in good faith by the Board) from the market value as determined pursuant to subsection (C)(2)(a) so as to reflect the approximate fair market value thereof.

(3) In the event the requirements of this subsection (C) are not complied with, the Corporation shall forthwith either:

(a) cause such closing to be postponed until such time as the requirements of this Section 3 have been complied with, or

(b) cancel such transaction, in which event the rights, preferences, privileges and restrictions of the holders of the Preferred Stock shall revert to and be the same as such rights, preferences, privileges and restrictions existing immediately prior to the date of the first notice referred to in subsection (C)(4).

(4) The Corporation shall give each holder of record of Preferred Stock written notice of a transaction described in subsection (C)(1) not later than twenty (20) days prior to the stockholders' meeting called to approve such transaction, or twenty (20) days prior to the closing of such transaction, whichever is earlier, and shall also notify such holders in writing of the final

approval of such transaction. The first of such notices shall describe the material terms and conditions of the impending transaction and the provisions of this Section 3, and the Corporation shall thereafter give such holders prompt notice of any material changes. The transaction shall in no event take place sooner than twenty (20) days after the Corporation has given the first notice provided for herein or sooner than ten (10) days after the Corporation has given notice of any material changes provided for herein; provided, however, that such periods may be shortened upon the written consent of the holders of at least two-thirds (2/3) of the shares of Preferred Stock then outstanding.

4. Conversion. The holders of the Preferred Stock have conversion rights as follows:

(A) Right to Convert. Each share of each series of Preferred Stock shall be convertible, at the option of the holder thereof, at any time after the date of issuance of such share and on or prior to the day prior to the Redemption Date, if any, as may have been fixed in any Redemption Notice with respect to the Preferred Stock, at the office of the Corporation or any transfer agent for the Preferred Stock, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Original Issue Price for such series of Preferred Stock by the Conversion Price for such series of Preferred Stock, determined as hereinafter provided, in effect at the time of the conversion (the "Conversion Rate"). The initial "Conversion Price" per share for the Series A Preferred Stock, the Series B Preferred Stock and the Series C Preferred Stock shall, as of the date of this Restated Certificate, initially be the Series A Original Issue Price, the Series B Original Issue Price and the Series C Original Issue Price, respectively. Such initial Conversion Price of each series of Preferred Stock shall be subject to adjustment as provided in subsection (D) of this Section 4.

(B) Automatic Conversion. Each share of each series of Preferred Stock shall automatically be converted into fully paid and nonassessable shares of Common Stock at its then effective Conversion Rate upon the earlier of (i) immediately prior to the closing of a firm commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended (the "1933 Act"), covering the offer and sale of Common Stock to the public for the account of the Corporation in which the public offering price (prior to underwriter's discounts or commissions and offering expenses) exceeds $6.30 per share (subject to adjustment for stock splits, stock dividends, recapitalizations and similar events) and the aggregate gross proceeds raised exceeds $30,000,000 (a "Qualified IPO") or (ii) on the date the holders of at least two-thirds (2/3) of the then outstanding shares of Preferred Stock so elect to convert in writing.

(C) Mechanics of Conversion.

(1) Before any holder of Preferred Stock shall be entitled to convert the same into shares of Common Stock, such holder shall surrender the certificate or certificates therefor, duly endorsed, at the office of the Corporation or of any transfer agent for such Preferred Stock, and shall give written notice to the Corporation at such office that such holder elects to convert the same and shall state therein the name or names in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be

entitled as aforesaid. Such conversion shall be deemed to have been made immediately prior to the close of business on the date of surrender of the shares of Preferred Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date; *provided, however,* that in the event of an automatic conversion in connection with a Qualified IPO, the outstanding shares of Preferred Stock shall be converted automatically without any further action by the holders of such shares and whether or not the certificates representing such shares are surrendered to the Corporation or its transfer agent; *provided further, however*, that the Corporation shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such automatic conversion unless the certificates evidencing such shares of Preferred Stock are either delivered to the Corporation or its transfer agent as provided above.

(2) If the conversion is in connection with an underwritten offering of securities pursuant to the 1933 Act, the conversion may, at the option of any holder tendering shares of Preferred Stock for conversion, be conditioned upon the closing with the underwriters of the sale of securities pursuant to such offering, in which event the person(s) entitled to receive the Common Stock upon conversion of the Preferred Stock shall not be deemed to have converted such Preferred Stock until immediately prior to the closing of such sale of securities.

(D) Adjustment of Conversion Price. The Conversion Price of each series of Preferred Stock shall be subject to adjustment from time to time as follows:

(1) (a) If the Corporation shall issue, after the date of filing of this Restated Certificate, any Additional Stock (as defined in subsection (D)(2)) without consideration or for a consideration per share less than the Conversion Price for any series of Preferred Stock in effect immediately prior to the issuance of such Additional Stock, the Conversion Price for such series in effect immediately after each such issuance of Additional Stock shall forthwith (except as otherwise provided in this subsection (D)) be adjusted to a price equal to (calculated to the nearest cent) the product obtained by multiplying the Conversion Price for such series of Preferred Stock in effect immediately prior to such issuance of Additional Stock by a fraction, the numerator of which is equal to the sum of (x) the total number of shares of Common Stock outstanding (including any shares of Common Stock deemed to be issued pursuant to subsection (D)(1)(e)(i) or (ii) of this Section 4) immediately prior to such issuance of Additional Stock plus (y) the number of shares of Common Stock that the aggregate consideration received by the Corporation for such issuance of Additional Stock would purchase at the Conversion Price for such series of Preferred Stock in effect immediately prior to such issuance of Additional Stock, and the denominator of which is equal to the sum of (x) the total number of shares of Common Stock outstanding (including any shares of Common Stock deemed to be issued pursuant to subsection (D)(1)(e)(i) or (ii) of this Section 4) immediately prior to such issuance of Additional Stock plus (y) the number of shares of Additional Stock issued.

(b) No adjustment in the Conversion Price for any series of Preferred Stock need be made if such adjustment would result in a change in the Conversion Price of less than $0.01. Any adjustment of less than $0.01 which is not made shall be carried forward and shall be made at the time of and together with any subsequent adjustment that, on a cumulative basis, amounts to an adjustment of $0.01 or more in the Conversion Price. Except to the limited extent

provided for in subsections (D)(1)(e)(iii) or (iv), no adjustment of such Conversion Price pursuant to this subsection (D)(1) shall have the effect of increasing the Conversion Price above the Conversion Price in effect immediately prior to such adjustment.

(c) In the case of the issuance of Common Stock for cash, the consideration shall be deemed to be the amount of cash paid therefor before deducting any discounts, commissions or other expenses allowed, paid or incurred by the Corporation for any underwriting or otherwise in connection with the issuance and sale thereof.

(d) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the consideration other than cash shall be deemed to be the fair value thereof as determined by the Board in good faith irrespective of any accounting treatment.

(e) In the case of the issuance (whether before, on or after the date of filing of this Restated Certificate) of (x) options to purchase or rights to subscribe for Common Stock, (y) securities, by their terms, convertible into or exchangeable for Common Stock or (z) options to purchase or rights to subscribe for securities, by their terms, convertible into or exchangeable for Common Stock, the following provisions shall apply for all purposes of subsections (D)(1) and (2):

(i) The aggregate maximum number of shares of Common Stock deliverable upon exercise (assuming the satisfaction of any conditions to exercisability, including, without limitation, the passage of time) of such options to purchase or rights to subscribe for Common Stock shall be deemed to have been issued at the time such options or rights were issued and for a consideration equal to the consideration (determined in the manner provided in subsections (D)(1)(c) and (D)(1)(d)), if any, received by the Corporation upon the issuance of such options or rights plus the minimum purchase price provided in such options or rights for the Common Stock covered thereby.

(ii) The aggregate maximum number of shares of Common Stock deliverable upon conversion of or in exchange (assuming the satisfaction of any conditions to convertibility or exchangeability, including, without limitation, the passage of time) for any such convertible or exchangeable securities, or upon the exercise of options to purchase or rights to subscribe for such convertible or exchangeable securities and subsequent conversion or exchange thereof, shall be deemed to have been issued at the time such securities were issued or such options or rights were issued and for a consideration equal to the consideration (determined in the manner provided in subsections (D)(1)(c) and (D)(1)(d)), if any, received by the Corporation for any such securities and related options or rights (excluding any cash received on account of accrued interest or accrued dividends) plus the minimum additional consideration, if any, to be received by the Corporation upon the conversion or exchange of such securities or the exercise of any related options or rights.

(iii) In the event of any change in the number of shares of Common Stock deliverable upon exercise of any such options or rights or upon conversion of or in exchange for such convertible or exchangeable securities, or on any change in the minimum

purchase price of such options, rights or securities, including, but not limited to, a change resulting from the antidilution provisions of such options, rights or securities, the Conversion Price of each series of Preferred Stock that was in any way affected by or computed using such options, rights or securities shall be recomputed to reflect such change, but no further adjustment shall be made for the actual issuance of Common Stock or any payment of such consideration upon the exercise of any such options or rights or the conversion or exchange of such securities.

(iv) Upon the expiration of any such options or rights, the termination of any such rights to convert or exchange or the expiration of any options or rights related to such convertible or exchangeable securities, the Conversion Price of each series of Preferred Stock that was in any way affected by or computed using such options, rights or securities related to such options or rights shall forthwith be readjusted to such Conversion Price as would have been obtained had the adjustment made upon the issuance of such options, rights, convertible or exchangeable securities or options or rights related to such convertible or exchangeable securities, as the case may be, been made upon the basis of the issuance of only the number of shares of Common Stock (and convertible or exchangeable securities that remain in effect) actually issued upon the exercise of such options or rights, upon the conversion or exchange of such convertible or exchangeable securities or upon the exercise of the options or rights related to such convertible or exchangeable securities, as the case may be.

(v) The number of shares of Common Stock deemed issued and the consideration deemed paid therefor pursuant to subsections (D)(1)(e)(i) and (ii) of this Section 4 shall be appropriately adjusted to reflect any change, termination or expiration of the type described in either subsection (D)(1)(e)(iii) or (iv) of this Section 5.

(2) "Additional Stock" shall mean any shares of Common Stock issued (or deemed to have been issued pursuant to subsection (D)(1)(e) of this Section 4) by the Corporation after the date of filing of this Restated Certificate other than:

(a) shares of Common Stock issued pursuant to an event or transaction described in subsection (D)(3) of this Section 4;

(b) shares of Series A Preferred Stock outstanding on the date hereof, Series B Preferred Stock outstanding on the date hereof and Series C Preferred Stock authorized on the date hereof and sold at a price not less than the Original Issue Price for such stock and the Common Stock into which such shares are convertible;

(c) shares of Common Stock or other securities issued as a dividend or distribution on the Preferred Stock;

(d) shares of Common Stock, warrants or options to purchase Common Stock or other securities issued to the Corporation's employees, officers, directors, consultants, advisors or other service providers pursuant to any plan or arrangement, provided such plan or arrangement and issuance are approved by the Board, including a majority of those directors elected by the holders of Preferred Stock;

(e) shares of Common Stock, warrants or options to purchase Common Stock or other securities issued to financial institutions or equipment lessors, provided such issuance is approved by the Board, including a majority of those directors elected by the holders of Preferred Stock;

(f) shares of Common Stock, warrants or options to purchase Common Stock or other securities issued in connection with corporate or strategic partnering agreements or agreements to license technology, provided such issuance is approved by the Board, including a majority of those directors elected by the holders of Preferred Stock;

(g) shares of Common Stock issued in a Qualified IPO; or

(h) shares of Common Stock or other securities issued in connection with a bona fide business acquisition by the Corporation (whether by merger, consolidation, sale of assets, sale or exchange of stock or otherwise), provided such acquisition is approved by the Board, including a majority of those directors elected by the holders of Preferred Stock.

(3) Subdivision, etc. In the event the Corporation should, at any time or from time to time after the date of filing of this Restated Certificate, fix a record date for the effectuation of a split or subdivision of the outstanding shares of Common Stock or the determination of holders of Common Stock entitled to receive a dividend or other distribution payable in additional shares of Common Stock or Common Stock Equivalents without payment of any consideration by such holder for the additional shares of Common Stock or the Common Stock Equivalents (including the additional shares of Common Stock issuable upon conversion or exercise thereof), then, as of such record date (or the date of such dividend distribution, split or subdivision if no record date is fixed), the Conversion Price of each series of Preferred Stock shall be appropriately decreased so that the number of shares of Common Stock issuable on conversion of each share of such series of Preferred Stock shall be increased in proportion to such increase of the aggregate shares of Common Stock outstanding and those issuable with respect to such Common Stock Equivalents.

(4) Combination. If the number of shares of Common Stock outstanding at any time after the date of filing of this Restated Certificate is decreased by a combination of the outstanding shares of Common Stock, then, on the effective date of such combination, the Conversion Price of each series of Preferred Stock shall be appropriately increased so that the number of shares of Common Stock issuable on conversion of each share of such series of Preferred Stock shall be decreased in proportion to such decrease in outstanding shares of Common Stock.

(E) Other Distributions. In the event the Corporation shall declare a distribution payable in securities of other persons, evidences of indebtedness issued by the Corporation or other persons, assets (excluding cash dividends) or options or rights not referred to in subsection (D)(3) of this Section 4, then, in each such case for the purpose of this subsection (F), the holders of Preferred Stock shall be entitled to a proportionate share of any such distribution as though they were the holders of the number of shares of Common Stock of the Corporation into which their respective

shares of Preferred Stock are convertible as of the record date fixed for the determination of the holders of Common Stock of the Corporation entitled to receive such distribution.

(F) Recapitalizations. If, at any time or from time to time after the date of filing of this Restated Certificate, there shall be a recapitalization of the Corporation's Common Stock (other than (x) a subdivision or combination provided for elsewhere in this Section 4 or (y) a merger or sale of assets referred to in Section 3(C)) provision shall be made so that the holders of each series of Preferred Stock shall thereafter be entitled to receive upon conversion of each such series of Preferred Stock the number of shares of stock or other securities or property of the Corporation or otherwise to which a holder of Common Stock deliverable upon conversion of such series of Preferred Stock would have been entitled on such recapitalization. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 4 with respect to the rights of the holders of each series of Preferred Stock after the recapitalization to the end that the provisions of this Section 4 (including adjustment of the Conversion Price then in effect and the number of shares issuable upon conversion of each series of Preferred Stock) shall be applicable after that event as nearly equivalent as prior to that event as may be practicable.

(G) No Impairment. The Corporation will not, by amendment of this Restated Certificate or through any reorganization, recapitalization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation, but will at all times in good faith assist in the carrying out of all the provisions of this Section 4 and in the taking of all such action as may be necessary or appropriate in order to protect the conversion rights of the holders of Preferred Stock set forth in this Section 4 against impairment. This provision shall not restrict the Corporation's right to amend this Restated Certificate with the requisite stockholder consent.

(H) No Fractional Shares and Certificate as to Adjustment.

(1) No fractional shares shall be issued upon the conversion of any share of any series of Preferred Stock and, in lieu of any fractional shares to which any holder of any series of Preferred Stock would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the then effective Conversion Price for the applicable series of Preferred Stock. Whether or not fractional shares are issuable upon such conversion shall be determined on the basis of the total number of shares of the applicable series of Preferred Stock of each holder at the time converting into Common Stock and the number of shares of Common Stock issuable upon such aggregate conversion.

(2) Upon the occurrence of each adjustment or readjustment of the Conversion Rate for any series of Preferred Stock pursuant to this Section 4, the Corporation, at its expense, shall promptly compute such adjustment or readjustment in accordance with the terms hereof and prepare and furnish to each holder of such series of Preferred Stock a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, upon written request at any time of any holder of any series of Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (i) all such adjustments and readjustments, (ii) the Conversion Rate at the time in effect, and

(iii) the number of shares of Common Stock and the amount, if any, of other property that at the time would be received upon the conversion of such holder's shares of Preferred Stock.

(I) Notices of Record Date. In the event of any taking by the Corporation of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend (other than a cash dividend) or other distribution, any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property or to receive any other right, the Corporation shall send by recognized express courier to each holder of Preferred Stock, at least twenty (20) days prior to such record date, a notice specifying the date on which any such record is to be taken for the purpose of such dividend or distribution or right, and the amount and character of such dividend, distribution or right.

(J) Reservation of Stock Issuable Upon Conversion. The Corporation shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock solely for the purpose of effecting the conversion of the shares of Preferred Stock such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of Preferred Stock, the Corporation will take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose, including, without limitation, engaging its best efforts to obtain the requisite stockholder approval for any necessary amendment to this Restated Certificate.

5. Redemption.

(A) At any time after the fourth (4th) anniversary of the date on which the Corporation first issues shares of its Series C Preferred Stock, and upon receipt by the Corporation of a written request from the holders of at least two-thirds (2/3) of the then outstanding Preferred Stock that all shares of Preferred Stock be redeemed (the "Redemption Trigger Notice"), the Corporation shall, to the extent it may lawfully do so, redeem in two (2) annual installments (each payment date being referred to herein as a "Redemption Date") the Preferred Stock by paying in cash therefor an amount per share equal to (i) in the case of the Series A Preferred Stock, the Series A Original Issue Price, plus an additional amount equal to any dividends declared but unpaid on each such share (the "Series A Redemption Price"), (ii) in the case of the Series B Preferred Stock, the Series B Original Issue Price, plus an additional amount equal to any dividends declared but unpaid on each such share (the "Series B Redemption Price") and (iii) in the case of the Series C Preferred Stock, the Series C Original Issue Price, plus an additional amount equal to any dividends declared but unpaid on each such share (the "Series C Redemption Price"). The first Redemption Date shall be not more than 45 days after the Corporation's receipt of the Redemption Trigger Notice. The number of shares of Preferred Stock that the Corporation shall be required to redeem on each Redemption Date shall be 50% of the Preferred Stock on the first Redemption Date and all remaining Preferred Stock on the second Redemption Date. Any redemption effected pursuant to this Section 5 shall be made on a pro rata basis among the holders of each series of Preferred Stock to be redeemed in proportion to the number of shares of such series of Preferred Stock then held by such holders. In the event the Corporation may not lawfully redeem the Preferred Stock as provided

for herein, then the Corporation shall issue a promissory note in favor of the respective holders of shares of Preferred Stock to be redeemed having a principal amount equal to the Series A Redemption Price, the Series B Redemption Price and the Series C Redemption Price, as applicable, and accruing interest at an annual rate of ten percent (10%), and such promissory note shall be due and payable within one (1) year from the date of issuance.

(B) Redemption Procedure. As used in this subsection (B) and in subsection (C), the term "Redemption Price" shall collectively refer to the Series A Redemption Price, Series B Redemption Price and Series C Redemption Price. At least thirty (30) days prior to each Redemption Date, written notice (the "Redemption Notice") shall be sent by recognized express courier, postage prepaid, to each holder of record (at the close of business on the business day next preceding the day on which notice is given) of the Preferred Stock to be redeemed, at the address last shown on the records of the Corporation for such holder or given by the holder to the Corporation for the purpose of notice or if no such address appears or is given, at the place where the principal executive office of the Corporation is located, notifying such holder of the redemption to be effected, specifying the number of shares to be redeemed from such holder, the Redemption Price, the place at which payment may be obtained and calling upon such holder to surrender to the Corporation, in the manner and at the place designated, its certificate or certificates representing the shares to be redeemed. Except as provided in subsection (C) below, on or after each Redemption Date, each holder of Preferred Stock to be redeemed shall surrender to the Corporation the certificate or certificates representing such shares, in the manner and at the place designated in the Redemption Notice, and thereupon the aggregate Redemption Price of such shares shall be payable to the order of the person whose name appears on such certificate or certificates as the owner thereof and each surrendered certificate shall be cancelled. In the event less than all the shares represented by any such certificate are redeemed, a new certificate shall be issued representing the unredeemed shares.

(C) Effect of Redemption. From and after each Redemption Date, unless there shall have been a default in payment of the Redemption Price, all rights of the holders of such shares as holders of Preferred Stock (except the right to receive their respective Redemption Price without interest upon surrender of their certificate or certificates) shall cease with respect to such shares, and such shares shall not thereafter be transferred on the books of the Corporation or be deemed to be outstanding for any purpose whatsoever. If the funds of the Corporation legally available for redemption on any Redemption Date are insufficient to redeem the total number of shares requested to be redeemed on such date, those funds which are legally available will be used to redeem the maximum possible number of such shares ratably among the holders of such shares to be redeemed based upon their holdings of Preferred Stock, provided that funds shall be allocated among the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred proportionately based on their aggregate Redemption Price. The shares not redeemed shall remain outstanding and be entitled to all the rights and preferences provided herein. At any time thereafter when additional funds of the Corporation are legally available for the redemption of shares not redeemed, such funds will immediately be set aside for the redemption of the balance of the shares which the Corporation has become obligated to redeem on any Redemption Date but which it has not redeemed.

6. Voting.

(A) General. Each holder of each share of each series of Preferred Stock shall be entitled to the number of votes equal to the number of shares of Common Stock into which such share of Preferred Stock could be converted, exclusive of any dividends, at the record date for determination of the stockholders entitled to vote on such matters, or, if no such record date is established, at the date such vote is taken or any written consent of stockholders is solicited, and, except as otherwise required by law, shall have voting rights and powers equal to the voting rights and powers of the Common Stock. Each holder of each share of Preferred Stock shall be entitled to notice of any stockholders' meeting in accordance with the Corporation's Bylaws and shall vote with holders of the Common Stock upon the election of directors (except as set forth in subsection (B) below) and upon any other matter submitted to a vote of stockholders (except those matters required by law to be submitted to a class vote and as set forth in Section 7). Fractional votes by the holders of Preferred Stock shall not, however, be permitted and any fractional voting rights shall (after aggregating all shares of Common Stock into which shares of Preferred Stock held by each holder could be converted, exclusive of any dividends) be rounded to the nearest whole number (with one-half being rounded upward). Each holder of each share of Common Stock shall be entitled to one vote.

(B) Election of Directors.

(1) The authorized number of directors of the Board shall be six (6). So long as at least 1,000,000 shares of Preferred Stock (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations or similar events) are outstanding: (a) the holders of Preferred Stock, voting together as a single class, shall be entitled to elect three (3) members of the Board at each meeting or pursuant to each consent of the Corporation's stockholders for the election of directors; (b) the holders of a majority of the Common Stock, voting as a single class, shall be entitled to elect one (1) member of the Board at each meeting or pursuant to each consent of the Corporation's stockholders for the election of directors; and (c) the holders of Common Stock and Preferred Stock, voting together as a single class, shall be entitled the remaining members of the Board at each meeting or pursuant to each consent of the Corporation's stockholders for the election of directors.

(2) Vacancies in the Board may be filled by at least a majority of the remaining directors originally elected by the class or classes of stock or series thereof that elected the member who created the vacancy (or the remaining director so elected if there is but one or in any event by (a) in the case of any vote conducted at a meeting of the holders of shares of that class or classes or series, the affirmative vote of the holders of a plurality of the shares of that class or classes or series or (b) in the case of any vote taken by written consent without a meeting, the affirmative vote of the holders of at least a majority of the shares of that class or classes or series). The stockholders entitled to vote upon the election of directors may elect a director or directors at any time to fill any vacancy or vacancies not filled by the directors.

(3) Any director who was elected by a specified class or classes of stock or series thereof may be removed during his or her term of office, either for or without cause, by, and only by, the affirmative vote of the holders of at least a majority of the shares of the class or classes of stock or series thereof that initially elected such director. Such vote may be given at a special meeting of such stockholders duly called or by an action by written consent for that purpose.

(C) Adjustment in Authorized Common Stock. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares of Common Stock then outstanding) by an affirmative vote of the holders of a majority of the stock of the Corporation.

7. Preferred Stock Protective Provisions. The Corporation shall not, without first obtaining the affirmative vote or written consent of the holders of at least two-thirds (2/3) of the Preferred Stock then outstanding, whether by way of amendment of this Restated Certificate or Bylaws, by merger, by consolidation, by reorganization or otherwise:

(A) increase or decrease (other than by conversion or redemption) the number of authorized shares of Preferred Stock;

(B) authorize any new class or series of equity securities having any preference or priority as to voting, dividends, redemption, conversion or distribution of assets upon liquidation, merger or otherwise which is superior to or on a parity with any such preference or priority of any series of Preferred Stock then outstanding;

(C) redeem, purchase or otherwise acquire (or pay into or set aside for a sinking fund for such purpose) any shares of Common Stock or Preferred Stock; *provided, however*, that this restriction shall not apply to the repurchase of shares of Common Stock from current or former employees, officers, directors, consultants or other persons performing services for the Corporation pursuant to agreements under which the Corporation has the right to repurchase such shares at a price equal to or below cost upon the occurrence of certain events, such as the termination of services;

(D) redeem, purchase or otherwise acquire for value (or pay into or set aside for a sinking fund for such purpose) any share or shares of Preferred Stock; *provided, however*, that this restriction shall not apply to any redemption in accordance with Section 5 of this ARTICLE V;

(E) pay or declare a dividend or make any other distribution in respect of any shares of Preferred Stock or Common Stock (payable other than in Common Stock or Common Stock Equivalents);

(F) take any action that would alter or change the rights, preferences or privileges of any series of Preferred Stock then outstanding;

(G) change the number of authorized directors of the Board (unless unanimously approved by the Board) or change the number of directors which the holders of Preferred Stock are entitled to elect;

(H) sell all or substantially all of the Corporation's assets or lease or otherwise dispose of or encumber all or substantially all of the Corporation's assets, or merge into or consolidate with any other entity, or effect any transaction or series of related transactions in which the Corporation's stockholders as constituted immediately prior to such transaction or series of related transactions own immediately after such transaction or series of related transactions less than

fifty percent (50%) of the voting power of the surviving or acquiring entity on account of shares held by them prior to such transaction or series of related transactions;

(I) dissolve, liquidate or wind up the Corporation;

(J) incur indebtedness or guarantee indebtedness in excess of $100,000 in the aggregate unless approved by the Board, including a majority of the directors elected by the Preferred Stock; or

(K) amend this Restated Certificate or Bylaws.

The provisions of this Section 7 shall not limit or restrict any rights which any holder of Preferred Stock may have under the DGCL.

8. Status of Redeemed or Converted Stock. In the event any shares of any series of Preferred Stock are converted pursuant to Section 4 or redeemed pursuant to Section 5, the Corporation shall never again issue the shares so converted or redeemed and all such shares so converted or redeemed shall, upon such conversion or redemption, cease to be a part of the Corporation's authorized stock. This Restated Certificate shall be appropriately amended to effect the corresponding reduction in the Corporation's authorized stock.

9. Notices. Any notice required by the provisions of Sections 3, 4 and 5 to be given to the holders of shares of any series of Preferred Stock shall be in writing and shall be delivered personally by hand or by recognized express courier, fees prepaid, directed to each holder of record at such holder's address appearing on the Corporation's books. Any such notice shall be deemed given upon personal delivery or on the date of delivery to the express courier.

## ARTICLE VI

Explicitly subject to the limitations provided in this Restated Certificate, in furtherance and not in limitation of the powers conferred by the laws of the state of Delaware, the Board is expressly authorized to make, alter, amend or repeal the Corporation's Bylaws.

## ARTICLE VII

Election of directors need not be by written ballot unless the Corporation's Bylaws shall so provide.

## ARTICLE VIII

To the fullest extent permitted by the DGCL, as the same may be amended from time to time, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. Any repeal or modification of the provisions of this ARTICLE VIII, by amendment of this ARTICLE VIII or by operation of law, shall not adversely affect any right or protection of a director of the Corporation with respect to any acts or omissions of such director occurring prior to such repeal or modification.

## ARTICLE IX

To the fullest extent permitted by applicable law, the Corporation is authorized to provide indemnification of (and advancement of expenses to) directors, officers, employees and other agents of the Corporation (and any other persons to which Delaware law permits the Corporation to provide indemnification), through Bylaw provisions, agreements with any such director, officer, employee or other agent or other person, vote of stockholders or disinterested directors, or otherwise, in excess of the indemnification and advancement otherwise permitted by Section 145 of the DGCL. Any repeal or modification of any of the provisions of this ARTICLE IX, by amendment of this ARTICLE IX or by operation of law, shall not adversely affect any right or protection of a director, officer, employee or other agent or other person existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omissions of such director, officer or agent occurring prior to, such repeal or modification.

## ARTICLE X

Explicitly subject to the limitations in Section 7 of ARTICLE V, the Corporation reserves the right to amend, alter, change or repeal any provision contained in this Restated Certificate, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.

**CERTIFICATE OF AMENDMENT OF**

**AMENDED AND RESTATED CERTIFICATE OF INCORPORATION OF**

**CAPNIA, INC.**

Capnia, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies that:

FIRST: The name of the Corporation is Capnia, Inc. The Corporation's original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on August 25, 1999. The Corporation's Amended and Restated Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on February 5, 2010.

SECOND: This Certificate of Amendment of Amended and Restated Certificate of Incorporation was duly adopted by the board of directors of the Corporation in accordance with Section 242 of the General Corporation Law of the State of Delaware, as the same may be amended from time to time (the "Corporation Law"), and by written consent of the stockholders of the Corporation entitled to vote thereon in accordance with the provisions of Section 228 of the Corporation Law.

THIRD: ARTICLE V, Section 6(B)(1) of the Corporation's Amended and Restated Certificate of Incorporation is hereby amended, restated and replaced in its entirety to read as follows:

"ARTICLE V

Section6 Voting.

(A) Election of Directors.

(1) The authorized number of directors of the Board shall be seven (7). So long as at least 1,000,000 shares of Preferred Stock (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations or similar events) are outstanding: (a) the holders of Preferred Stock, voting together as a single class, shall be entitled to elect two (2) members of the Board at each meeting or pursuant to each consent of the Corporation's stockholders for the election of directors; (b) the holders of a majority of the Common Stock, voting as a single class, shall be entitled to elect two (2) members of the Board at each meeting or pursuant to each consent of the Corporation's stockholders for the election of directors; and (c) the holders of Common Stock and Preferred Stock, voting together as a single class, shall be entitled to elect the remaining members of the Board at each meeting or pursuant to each consent of the Corporation's stockholders for the election of directors."

***

IN WITNESS WHEREOF, Capnia, Inc. has caused this Amended and Restated Certificate of Incorporation to be signed by Anish Bhatnagar, a duly authorized officer of the Corporation, on June 2, 2014.

*/s/Anish Bhatnagar*

Anish Bhatnagar, Chief Executive Officer

**Exhibit 3.2**

**AMENDED AND RESTATED**

**CERTIFICATE OF INCORPORATION OF**

**CAPNIA, INC.**

Capnia, Inc., a corporation organized and existing under the laws of the State of Delaware (the "**Corporation**"), certifies that:

A. The name of the corporation is Capnia, Inc. The date of filing the original Certificate of Incorporation of this corporation with the Secretary of State of the State of Delaware is August 25, 1999.

B. This Amended and Restated Certificate of Incorporation was duly adopted in accordance with Sections 242 and 245 of the General Corporation Law of Delaware, and restates, integrates and further amends the provisions of the Corporation's Certificate of Incorporation.

C. This Amended and Restated Certificate of Incorporation was duly approved by the stockholders of the Corporation in accordance with Section 228 of the General Corporation Law of Delaware.

D. The text of the Corporation's Certificate of Incorporation is amended and restated to read as set forth in EXHIBIT A attached hereto.

IN WITNESS WHEREOF, Capnia, Inc. has caused this Amended and Restated Certificate of Incorporation to be signed by Anish Bhatnagar, a duly authorized officer of the Corporation, on _____, 2014.

_____

Anish Bhatnagar, Chief Executive Officer

**EXHIBIT A**

**ARTICLE I**

The name of the Corporation is Capnia, Inc.

**ARTICLE II**

The purpose of this Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of Delaware (the "DGCL").

**ARTICLE III**

The address of the Corporation's registered office in the State of Delaware is 1209 Orange Street, City of Wilmington, County of New Castle, 19801. The name of its registered agent at such address is The Corporation Trust Company.

**ARTICLE IV**

4.1 Authorized Capital Stock. The total number of shares of all classes of capital stock that the Corporation is authorized to issue is shares, consisting of shares of Common Stock, having a par value of $0.001 (the "**Common Stock**"), and shares of Preferred Stock, having a par value of $0.001 (the "**Preferred Stock**").

4.2 Increase or Decrease in Authorized Capital Stock. The number of authorized shares of Preferred Stock or Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority in voting power of the stock of the Corporation entitled to vote generally in the election of directors, irrespective of the provisions of Section 242(b)(2) of the DGCL (or any successor provision thereto), voting together as a single class, without a separate vote of the holders of the class or classes the number of authorized shares of which are being increased or decreased.

4.3 Common Stock.

(a) The holders of shares of Common Stock shall be entitled to one vote for each such share on each matter on which the holders of shares of Common Stock are entitled to vote. Except as otherwise required by law or this certificate of incorporation (this "**Certificate of Incorporation**" which term, as used herein, shall mean the certificate of incorporation of the Corporation, as amended from time to time, including the terms of any certificate of designations of any series of Preferred Stock), and subject to the rights of the holders of Preferred Stock, at any annual or special meeting of the stockholders the holders of shares of Common Stock shall have the right to vote for the election of directors and on all other matters submitted to a vote of the stockholders; provided, however, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Certificate of Incorporation that relates solely to the terms, number of shares, powers, designations, preferences, or relative participating, optional or other special rights (including, without limitation, voting rights), or to qualifications, limitations or restrictions thereon, of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together with the holders of one more other such series, to vote thereon

pursuant to this Certificate of Incorporation (including, without limitation, by any certificate of designations relating to any series of Preferred Stock) or pursuant to the DGCL.

(b) Subject to the rights of the holders of Preferred Stock, the holders of shares of Common Stock shall be entitled to receive such dividends and other distributions (payable in cash, property or capital stock of the Corporation) when, as and if declared thereon by the Board of Directors from time to time out of any assets or funds of the Corporation legally available therefor and shall share equally on a per share basis in such dividends and distributions.

(c) In the event of any voluntary or involuntary liquidation, dissolution or winding-up of the Corporation, after payment or provision for payment of the debts and other liabilities of the Corporation, and subject to the rights of the holders of Preferred Stock in respect thereof, the holders of shares of Common Stock shall be entitled to receive all the remaining assets of the Corporation available for distribution to its stockholders, ratably in proportion to the number of shares of Common Stock held by them.

4.4 Preferred Stock.

(a) The Preferred Stock may be issued from time to time in one or more series pursuant to a resolution or resolutions providing for such issue duly adopted by the Board of Directors (authority to do so being hereby expressly vested in the Board of Directors). The Board of Directors is further authorized, subject to limitations prescribed by law, to fix by resolution or resolutions and to set forth in a certification of designations filed pursuant to the DGCL the powers, designations, preferences and relative, participation, optional or other rights, if any, and the qualifications, limitations or restrictions thereof, if any, of any wholly unissued series of Preferred Stock, including without limitation authority to fix by resolution or resolutions the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), redemption price or prices, and liquidation preferences of any such series, and the number of shares constituting any such series and the designation thereof, or any of the foregoing.

(b) The Board of Directors is further authorized to increase (but not above the total number of authorized shares of the class) or decrease (but not below the number of shares of any such series then outstanding) the number of shares of any series, the number of which was fixed by it, subsequent to the issuance of shares of such series then outstanding, subject to the powers, preferences and rights, and the qualifications, limitations and restrictions thereof stated in the Certificate of Incorporation or the resolution of the Board of Directors originally fixing the number of shares of such series. If the number of shares of any series is so decreased, then the shares constituting such decrease shall resume the status which they had prior to the adoption of the resolution originally fixing the number of shares of such series.

**ARTICLE V**

5.1 General Powers. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors.

5.2 Number of Directors; Election; Term.

(a) Subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, the number of directors that constitutes the entire Board of Directors of the Corporation shall be fixed solely by resolution of the majority of the Whole Board. For purposes of this

Certificate of Incorporation, the term "**Whole Board**" will mean the total number of authorized directors whether or not there exist any vacancies in previously authorized directorships.

(b) Subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, effective upon the closing date (the "**Effective Date**") of the initial sale of shares of common stock in the Corporation's initial public offering pursuant to an effective registration statement filed under the Securities Act of 1933, as amended, the directors of the Corporation shall be divided into three classes as nearly equal in size as is practicable, hereby designated Class I, Class II and Class III. The initial assignment of members of the Board of Directors to each such class shall be made by the Board of Directors. The term of office of the initial Class I directors shall expire at the first regularly-scheduled annual meeting of the stockholders following the Effective Date, the term of office of the initial Class II directors shall expire at the second annual meeting of the stockholders following the Effective Date and the term of office of the initial Class III directors shall expire at the third annual meeting of the stockholders following the Effective Date. At each annual meeting of stockholders, commencing with the first regularly-scheduled annual meeting of stockholders following the Effective Date, each of the successors elected to replace the directors of a Class whose term shall have expired at such annual meeting shall be elected to hold office until the third annual meeting next succeeding his or her election and until his or her respective successor shall have been duly elected and qualified. Subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, if the number of directors that constitutes the Board of Directors is changed, any newly created directorships or decrease in directorships shall be so apportioned by the Board of Directors among the classes as to make all classes as nearly equal in number as is practicable, provided that no decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

(c) Notwithstanding the foregoing provisions of this Section 5.2, and subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, each director shall serve until his or her successor is duly elected and qualified or until his or her earlier death, resignation, or removal.

(d) Elections of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

5.3 Removal. Subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, a director may be removed from office by the stockholders of the Corporation only for cause and only by the affirmative vote of the holders of at least 66 ⅔% in voting power of the stock of the Corporation entitled to vote thereon.

5.4 Vacancies and Newly Created Directorships. Subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, and except as otherwise provided in the DGCL, vacancies occurring on the Board of Directors for any reason and newly created directorships resulting from an increase in the authorized number of directors may be filled only by vote of a majority of the remaining members of the Board of Directors, although less than a quorum, or by a sole remaining director, at any meeting of the Board of Directors. A person so elected by the Board of Directors to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been assigned by the Board of Directors and until his or her successor shall be duly elected and qualified.

## ARTICLE VI

In furtherance and not in limitation of the powers conferred by statute, the Board of Directors of the Corporation is expressly authorized to adopt, amend or repeal the Bylaws of the Corporation by the affirmative vote of a majority of the Whole Board. Notwithstanding any other provision of this Certificate of Incorporation or any provision of law that might otherwise permit a lesser vote or no vote, but in addition to any affirmative vote of the holders of any series of Preferred Stock required by law, by this Certificate of Incorporation or by any Preferred Stock Designation, the affirmative vote of the holders of at least 66 2/3% of the voting power of the stock of the Corporation entitled to vote thereon shall be required for the stockholders of the Corporation to amend, alter or repeal the Bylaws or adopt new Bylaws.

## ARTICLE VII

7.1 No Action by Written Consent of Stockholders. Except as otherwise expressly provided by the terms of any series of Preferred Stock permitting the holders of such series of Preferred Stock to act by written consent, any action required or permitted to be taken by stockholders of the Corporation must be effected at a duly called annual or special meeting of the stockholders and may not be effected by written consent in lieu of a meeting.

7.2 Special Meetings. Except as otherwise expressly provided by the terms of any series of Preferred Stock permitting the holders of such series of Preferred Stock to call a special meeting of the holders of such series, special meetings of stockholders of the Corporation may be called only by the affirmative vote of a majority of the Whole Board, the chairperson of the Board of Directors, the chief executive officer or the president (in the absence of a chief executive officer), and the ability of the stockholders to call a special meeting is hereby specifically denied. The Board of Directors, by the affirmative vote of a majority of the Whole Board, may cancel, postpone or reschedule any previously scheduled special meeting at any time, before or after the notice for such meeting has been sent to the stockholders.

7.3 Advance Notice. Advance notice of stockholder nominations for the election of directors and of business to be brought by stockholders before any meeting of the stockholders of the Corporation shall be given in the manner provided in the Bylaws of the Corporation.

## ARTICLE VIII

8.1 Limitation of Personal Liability. To the fullest extent permitted by the DGCL, as it presently exists or may hereafter be amended from time to time, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

8.2 Indemnification.

The Corporation shall indemnify, to the fullest extent permitted by applicable law, any director or officer of the Corporation who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (a "**Proceeding**") by reason of the fact that he or she is or was a director, officer, employee or agent of the Corporation or is or was serving at the request of the Corporation as a director, officer, employee or agent of

another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any such Proceeding. The Corporation shall be required to indemnify a person in connection with a Proceeding initiated by such person only if the Proceeding was authorized by the Board.

The Corporation shall have the power to indemnify, to the extent permitted by the DGCL, as it presently exists or may hereafter be amended from time to time, any employee or agent of the Corporation who was or is a party or is threatened to be made a party to any Proceeding by reason of the fact that he or she is or was a director, officer, employee or agent of the Corporation or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any such Proceeding.

Any repeal or amendment of this Article VIII by the stockholders of the Corporation or by changes in law, or the adoption of any other provision of this Certificate of Incorporation inconsistent with this Article VIII will, unless otherwise required by law, be prospective only (except to the extent such amendment or change in law permits the Corporation to further limit or eliminate the liability of directors) and shall not adversely affect any right or protection of a director of the Corporation existing at the time of such repeal or amendment or adoption of such inconsistent provision with respect to acts or omissions occurring prior to such repeal or amendment or adoption of such inconsistent provision.

**ARTICLE IX**

If any provision or provisions of this Certificate of Incorporation shall be held to be invalid, illegal or unenforceable as applied to any circumstance for any reason whatsoever: (i) the validity, legality and enforceability of such provisions in any other circumstance and of the remaining provisions of this Certificate of Incorporation (including, without limitation, each portion of any paragraph of this Certificate of Incorporation containing any such provision held to be invalid, illegal or unenforceable that is not itself held to be invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby and (ii) to the fullest extent possible, the provisions of this Certificate of Incorporation (including, without limitation, each such portion of any paragraph of this Certificate of Incorporation containing any such provision held to be invalid, illegal or unenforceable) shall be construed so as to permit the Corporation to protect its directors, officers, employees and agents from personal liability in respect of their good faith service or for the benefit of the Corporation to the fullest extent permitted by law.

The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation (including any rights, preferences or other designations of Preferred Stock), in the manner now or hereafter prescribed by this Certificate of Incorporation and the DGCL; and all rights, preferences and privileges herein conferred upon stockholders by and pursuant to this Certificate of Incorporation in its present form or as hereafter amended are granted subject to the right reserved in this Article IX. Notwithstanding any other provision of this Certificate of Incorporation, and in addition to any other vote that may be required by law or the terms of any series of Preferred Stock, the affirmative vote of the holders of at least 66 2/3% of the voting power of all then outstanding shares of capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required to amend, alter or repeal, or adopt any provision as part of this Certificate of Incorporation inconsistent with the purpose and intent of, Article V, Article VI, Article VII, Article VIII or this Article IX

(including, without limitation, any such Article as renumbered as a result of any amendment, alteration, change, repeal or adoption of any other Article).

**Exhibit 3.3**

# BYLAWS OF

# CAPNIA, INC.

(initially adopted October 5, 1999
as amended June 7, 2001)

**TABLE OF CONTENTS**

**BYLAWS**

**OF**

**CAPNIA, INC.**

ARTICLE I

**CORPORATE OFFICES**

1.1 REGISTERED OFFICE

The registered office of the corporation shall be fixed in the corporation's certificate of incorporation.

1.2 OTHER OFFICES

The board of directors may at any time establish other offices at any place or places where the corporation is qualified to do business.

ARTICLE II

**MEETINGS OF STOCKHOLDERS**

2.1 PLACE OF MEETINGS

Meetings of stockholders shall be held at any place, within or outside the State of Delaware, designated by the board of directors. In the absence of any such designation, stockholders' meetings shall be held at the principal office of the corporation.

2.2 ANNUAL MEETING

The annual meeting of stockholders shall be held each year on a date and at a time designated by the board of directors. In the absence of such designation the annual meeting of shareholders shall be held on the second Tuesday of April of each year at 10:00 a.m. However, if such day falls on a legal holiday, then the meeting shall be held at the same time and place on the next succeeding business day. At the meeting, directors shall be elected and any other proper business may be transacted.

2.3 SPECIAL MEETING

A special meeting of the stockholders may be called at any time by the board of directors, the chairman of the board, the chief executive officer or by one or more stockholders holding shares in the aggregate entitled to cast not less than ten percent of the votes at that meeting.

If a special meeting is called by any person or persons other than the board of directors, the request shall be in writing, specifying the time of such meeting and the general nature of the business proposed to be transacted, and shall be delivered personally or sent by registered mail or by telegraphic or other facsimile transmission to the chairman of the board, the president or the secretary of the corporation. No business may be transacted at such special meeting otherwise than specified in such notice. The officer receiving the request shall cause notice to be promptly given to the stockholders entitled to vote, in accordance with the provisions of Sections 2.4 and 2.5 of this Article II, that a meeting will be held at the time requested by the person or persons calling the meeting, not less than ten (10) nor more than sixty (60) days after the receipt of the request. Nothing contained in this paragraph of this Section 2.3 shall be construed as limiting, fixing, or affecting the time when a meeting of stockholders called by action of the board of directors may be held.

2.4 NOTICE OF STOCKHOLDERS' MEETINGS

All notices of meetings with stockholders shall be in writing and shall be sent or otherwise given in accordance with Section 2.5 of these bylaws not less than ten (10) nor more than sixty (60) days before the date of the meeting to each stockholder entitled to vote at such meeting. The notice shall specify the place, date, and hour of the meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called.

2.5 MANNER OF GIVING NOTICE; AFFIDAVIT OF NOTICE

Written notice of any meeting of stockholders, if mailed, is given when deposited in the United States mail, postage prepaid, directed to the stockholder at his address as it appears on the records of the corporation. An affidavit of the Secretary or an Assistant Secretary or of the transfer agent of the corporation that the notice has been given shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

2.6 QUORUM

The holders of a majority of the stock issued and outstanding and entitled to vote thereat, present in person or represented by proxy, shall constitute a quorum at all meetings of the stockholders for the transaction of business except as otherwise provided by statute or by the certificate of incorporation. If, however, such quorum is not present or represented at any meeting of the stockholders, then either (i) the Chairman of the meeting or (ii) the stockholders entitled to vote thereat, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present or represented. At such adjourned meeting at which a quorum is present or represented, any business may be transacted that might have been transacted at the meeting as originally noticed.

2.7 ADJOURNED MEETING; NOTICE

When a meeting is adjourned to another time or place, unless these bylaws otherwise require, notice need not be given of the adjourned meeting if the time and place thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting the corporation may transact any business that might have been transacted at the original meeting. If the adjournment is for more than

thirty (30) days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

2.8 CONDUCT OF BUSINESS

The chairman of any meeting of stockholders shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of business.

2.9 VOTING

The stockholders entitled to vote at any meeting of stockholders shall be determined in accordance with the provisions of Section 2.12 of these bylaws, subject to the provisions of Sections 217 and 218 of the General Corporation Law of Delaware (relating to voting rights of fiduciaries, pledgors and joint owners of stock and to voting trusts and other voting agreements).

Except as may be otherwise provided in the certificate of incorporation or these bylaws, each stockholder shall be entitled to one vote for each share of capital stock held by such stockholder and stockholders shall not be entitled to cumulate their votes in the election of directors or with respect to any matter submitted to a vote of the stockholders.

2.10 WAIVER OF NOTICE

Whenever notice is required to be given under any provision of the General Corporation Law of Delaware or of the certificate of incorporation or these bylaws, a written waiver thereof, signed by the person entitled to notice, whether before or after the time stated therein, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders need be specified in any written waiver of notice unless so required by the certificate of incorporation or these bylaws.

2.11 STOCKHOLDER ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Unless otherwise provided in the certificate of incorporation, any action required by this chapter to be taken at any annual or special meeting of stockholders of a corporation, or any action that may be taken at any annual or special meeting of such stockholders, may be taken without a meeting, without prior notice, and without a vote if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted.

Prompt notice of the taking of the corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing. If the action which is consented to is such as would have required the filing of a certificate under any section of the General Corporation Law of Delaware if such action had been voted on by stockholders at a meeting

thereof, then the certificate filed under such section shall state, in lieu of any statement required by such section concerning any vote of stockholders, that written notice and written consent have been given as provided in Section 228 of the General Corporation Law of Delaware.

2.12 RECORD DATE FOR STOCKHOLDER NOTICE; VOTING; GIVING CONSENTS

In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, or entitled to express consent to corporate action in writing without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the board of directors may fix, in advance, a record date, which shall not be more than sixty (60) nor less than ten (10) days before the date of such meeting, nor more than sixty (60) days prior to any other action.

If the board of directors does not so fix a record date:

(a) The record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held.

(b) The record date for determining stockholders entitled to express consent to corporate action in writing without a meeting, when no prior action by the board of directors is necessary, shall be the day on which the first written consent is expressed.

(c) The record date for determining stockholders for any other purpose shall be at the close of business on the day on which the board of directors adopts the resolution relating thereto.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the board of directors may fix a new record date for the adjourned meeting.

2.13 PROXIES

Each stockholder entitled to vote at a meeting of stockholders or to express consent or dissent to corporate action in writing without a meeting may authorize another person or persons to act for him by a written proxy, signed by the stockholder and filed with the secretary of the corporation, but no such proxy shall be voted or acted upon after three (3) years from its date, unless the proxy provides for a longer period. A proxy shall be deemed signed if the stockholder's name is placed on the proxy (whether by manual signature, typewriting, telegraphic transmission or otherwise) by the stockholder or the stockholder's attorney-in-fact. The revocability of a proxy that states on its face that it is irrevocable shall be governed by the provisions of Section 212(c) of the General Corporation Law of Delaware.

2.14 LIST OF STOCKHOLDERS ENTITLED TO VOTE

The officer who has charge of the stock ledger of a corporation shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least ten (10) days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or, if not so specified, at the place where the meeting is to be held. The list shall also be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. Such list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

ARTICLE III

**DIRECTORS**

3.1 POWERS

Subject to the provisions of the General Corporation Law of Delaware and any limitations in the certificate of incorporation or these bylaws relating to action required to be approved by the stockholders or by the outstanding shares, the business and affairs of the corporation shall be managed and all corporate powers shall be exercised by or under the direction of the board of directors.

3.2 NUMBER OF DIRECTORS

The number of directors of the Company shall be seven (7) until changed by a bylaw amending this Section 3.2, duly adopted by the board of directors and by a majority of the outstanding shares entitled to vote and as specified in the Certificate of Incorporation of the Company.

No reduction of the authorized number of directors shall have the effect of removing any director before that director's term of office expires.

3.3 ELECTION, QUALIFICATION AND TERM OF OFFICE OF DIRECTORS

Except as provided in Section 3.4 of these bylaws, directors shall be elected at each annual meeting of stockholders to hold office until the next annual meeting. Directors need not be stockholders unless so required by the certificate of incorporation or these bylaws, wherein other qualifications for directors may be prescribed. Each director, including a director elected to fill a vacancy, shall hold office until his successor is elected and qualified or until his earlier resignation or removal.

Elections of directors need not be by written ballot.

3.4 RESIGNATION AND VACANCIES

Any director may resign at any time upon written notice to the attention of the Secretary of the corporation. When one or more directors so resigns and the resignation is effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each director so chosen shall hold office as provided in this section in the filling of other vacancies.

Unless otherwise provided in the certificate of incorporation or these bylaws:

(a) Vacancies and newly created directorships resulting from any increase in the authorized number of directors elected by all of the stockholders having the right to vote as a single class may be filled by a majority of the directors then in office, although less than a quorum, or by a sole remaining director.

(b) Whenever the holders of any class or classes of stock or series thereof are entitled to elect one or more directors by the provisions of the certificate of incorporation, vacancies and newly created directorships of such class or classes or series may be filled by a majority of the directors elected by such class or classes or series thereof then in office, or by a sole remaining director so elected.

If at any time, by reason of death or resignation or other cause, the corporation should have no directors in office, then any officer or any stockholder or an executor, administrator, trustee or guardian of a stockholder, or other fiduciary entrusted with like responsibility for the person or estate of a stockholder, may call a special meeting of stockholders in accordance with the provisions of the certificate of incorporation or these bylaws, or may apply to the Court of Chancery for a decree summarily ordering an election as provided in Section 211 of the General Corporation Law of Delaware.

If, at the time of filling any vacancy or any newly created directorship, the directors then in office constitute less than a majority of the whole board (as constituted immediately prior to any such increase), then the Court of Chancery may, upon application of any stockholder or stockholders holding at least ten (10) percent of the total number of the shares at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office as aforesaid, which election shall be governed by the provisions of Section 211 of the General Corporation Law of Delaware as far as applicable.

3.5 PLACE OF MEETINGS; MEETINGS BY TELEPHONE

The board of directors of the corporation may hold meetings, both regular and special, either within or outside the State of Delaware.

Unless otherwise restricted by the certificate of incorporation or these bylaws, members of the board of directors, or any committee designated by the board of directors, may participate in a meeting of the board of directors, or any committee, by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

3.6 REGULAR MEETINGS

Regular meetings of the board of directors may be held without notice at such time and at such place as shall from time to time be determined by the board.

3.7 SPECIAL MEETINGS; NOTICE

Special meetings of the board of directors for any purpose or purposes may be called at any time by the chairman of the board, the president, any vice president, the secretary or any two (2) directors.

Notice of the time and place of special meetings shall be delivered personally or by telephone to each director or sent by first-class mail or telegram, charges prepaid, addressed to each director at that director's address as it is shown on the records of the corporation. If the notice is mailed, it shall be deposited in the United States mail at least four (4) days before the time of the holding of the meeting. If the notice is delivered personally or by telephone or by telegram, it shall be delivered personally or by telephone or to the telegraph company at least forty-eight (48) hours before the time of the holding of the meeting. Any oral notice given personally or by telephone may be communicated either to the director or to a person at the office of the director who the person giving the notice has reason to believe will promptly communicate it to the director. The notice need not specify the purpose or the place of the meeting, if the meeting is to be held at the principal executive office of the corporation.

3.8 QUORUM

At all meetings of the board of directors, a majority of the authorized number of directors, including a director elected or deemed to be elected by the holders of Preferred Stock of the Company, voting separately, shall constitute a quorum for the transaction of business and the act of a majority of the directors present at any meeting at which there is a quorum shall be the act of the board of directors, except as may be otherwise specifically provided by statute or by the certificate of incorporation. There shall be no quorum for the transaction of business at any meeting of the board of directors without the presence of at least one director elected or deemed to be elected by the holders of Series A Preferred Stock of the Company even if a majority of the authorized number of directors are present at such meeting. If a quorum is not present at any meeting of the board of directors, then the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present.

A meeting at which a quorum is initially present may continue to transact business notwithstanding the withdrawal of directors, if any action taken is approved by at least a majority of the required quorum for that meeting.

3.9 WAIVER OF NOTICE

Whenever notice is required to be given under any provision of the General Corporation Law of Delaware or of the certificate of incorporation or these bylaws, a written waiver thereof, signed by the person entitled to notice, whether before or after the time stated therein, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting, at the beginning of the meeting,

to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the directors, or members of a committee of directors, need be specified in any written waiver of notice unless so required by the certificate of incorporation or these bylaws.

3.10 BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the board of directors, or of any committee thereof, may be taken without a meeting if all members of the board or committee, as the case may be, consent thereto in writing and the writing or writings are filed with the minutes of proceedings of the board or committee.

3.11 FEES AND COMPENSATION OF DIRECTORS

Unless otherwise restricted by the certificate of incorporation or these bylaws, the board of directors shall have the authority to fix the compensation of directors.

3.12 APPROVAL OF LOANS TO OFFICERS

The corporation may lend money to, or guarantee any obligation of, or otherwise assist any officer or other employee of the corporation or of its subsidiary, including any officer or employee who is a director of the corporation or its subsidiary, whenever, in the judgment of the directors, such loan, guaranty or assistance may reasonably be expected to benefit the corporation. The loan, guaranty or other assistance may be with or without interest and may be unsecured, or secured in such manner as the board of directors shall approve, including, without limitation, a pledge of shares of stock of the corporation. Nothing in this section contained shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the corporation at common law or under any statute.

3.13 REMOVAL OF DIRECTORS

Unless otherwise restricted by statute, by the certificate of incorporation or by these bylaws, any director or the entire board of directors may be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors; provided, however, that, so long as shareholders of the corporation are entitled to cumulative voting, if less than the entire board is to be removed, no director may be removed without cause if the votes cast against his removal would be sufficient to elect him if then cumulatively voted at an election of the entire board of directors.

No reduction of the authorized number of directors shall have the effect of removing any director prior to the expiration of such director's term of office.

ARTICLE IV

**COMMITTEES**

4.1 COMMITTEES OF DIRECTORS

The board of directors may, by resolution passed by a majority of the whole board, designate one or more committees, with each committee to consist of one or more of the directors of the corporation. The board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the board of directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the board of directors or in the bylaws of the corporation, shall have and may exercise all the powers and authority of the board of directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority to (i) amend the certificate of incorporation (except that a committee may, to the extent authorized in the resolution or resolutions providing for the issuance of shares of stock adopted by the board of directors as provided in Section 151(a) of the General Corporation Law of Delaware, fix the designations and any of the preferences or rights of such shares relating to dividends, redemption, dissolution, any distribution of assets of the corporation or the conversion into, or the exchange of such shares for, shares of any other class or classes or any other series of the same or any other class or classes of stock of the corporation or fix the number of shares of any series of stock or authorize the increase or decrease of the shares of any series), (ii) adopt an agreement of merger or consolidation under Sections 251 or 252 of the General Corporation Law of Delaware, (iii) recommend to the stockholders the sale, lease or exchange of all or substantially all of the corporation's property and assets, (iv) recommend to the stockholders a dissolution of the corporation or a revocation of a dissolution, or (v) amend the bylaws of the corporation; and, unless the board resolution establishing the committee, the bylaws or the certificate of incorporation expressly so provide, no such committee shall have the power or authority to declare a dividend, to authorize the issuance of stock, or to adopt a certificate of ownership and merger pursuant to Section 253 of the General Corporation Law of Delaware.

4.2 COMMITTEE MINUTES

Each committee shall keep regular minutes of its meetings and report the same to the board of directors when required.

4.3 MEETINGS AND ACTION OF COMMITTEES

Meetings and actions of committees shall be governed by, and held and taken in accordance with, the provisions of Article III of these bylaws, Section 3.5 (place of meetings and meetings by telephone), Section 3.6 (regular meetings), Section 3.7 (special meetings and notice), Section 3.8 (quorum), Section 3.9 (waiver of notice), and Section 3.10 (action without a meeting), with such changes in the context of those bylaws as are necessary to substitute the committee and its members for the board of

directors and its members; provided, however, that the time of regular meetings of committees may be determined either by resolution of the board of directors or by resolution of the committee, that special meetings of committees may also be called by resolution of the board of directors and that notice of special meetings of committees shall also be given to all alternate members, who shall have the right to attend all meetings of the committee. The board of directors may adopt rules for the government of any committee not inconsistent with the provisions of these bylaws.

ARTICLE V

**OFFICERS**

5.1 OFFICERS

The officers of the corporation shall be a president, a secretary, and a chief financial officer. The corporation may also have, at the discretion of the board of directors, a chairman of the board, one or more vice presidents, one or more assistant vice presidents, one or more assistant secretaries, one or more assistant treasurers, and any such other officers as may be appointed in accordance with the provisions of Section 5.3 of these bylaws. Any number of offices may be held by the same person.

5.2 APPOINTMENT OF OFFICERS

The officers of the corporation, except such officers as may be appointed in accordance with the provisions of Sections 5.3 or 5.5 of these bylaws, shall be appointed by the board of directors, subject to the rights, if any, of an officer under any contract of employment.

5.3 SUBORDINATE OFFICERS

The board of directors may appoint, or empower the president to appoint, such other officers and agents as the business of the corporation may require, each of whom shall hold office for such period, have such authority, and perform such duties as are provided in these bylaws or as the board of directors may from time to time determine.

5.4 REMOVAL AND RESIGNATION OF OFFICERS

Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, either with or without cause, by an affirmative vote of the majority of the board of directors at any regular or special meeting of the board or, except in the case of an officer chosen by the board of directors, by any officer upon whom such power of removal may be conferred by the board of directors.

Any officer may resign at any time by giving written notice to the corporation. Any resignation shall take effect at the date of the receipt of that notice or at any later time specified in that notice; and, unless otherwise specified in that notice, the acceptance of the resignation shall not be necessary to make it effective. Any resignation is without prejudice to the rights, if any, of the corporation under any contract to which the officer is a party.

5.5 VACANCIES IN OFFICES

Any vacancy occurring in any office of the corporation shall be filled by the board of directors.

5.6 CHAIRMAN OF THE BOARD

The chairman of the board, if such an officer be elected, shall, if present, preside at meetings of the board of directors and exercise and perform such other powers and duties as may from time to time be assigned to him by the board of directors or as may be prescribed by these bylaws. If there is no president, then the chairman of the board shall also be the chief executive officer of the corporation and shall have the powers and duties prescribed in Section 5.7 of these bylaws.

5.7 PRESIDENT

Subject to such supervisory powers, if any, as may be given by the board of directors to the chairman of the board, if there be such an officer, the president shall be the chief executive officer of the corporation and shall, subject to the control of the board of directors, have general supervision, direction, and control of the business and the officers of the corporation. He shall preside at all meetings of the stockholders and, in the absence or nonexistence of a chairman of the board, at all meetings of the board of directors. He shall have the general powers and duties of management usually vested in the office of president of a corporation and shall have such other powers and duties as may be prescribed by the board of directors or these bylaws.

5.8 VICE PRESIDENTS

In the absence or disability of the president, the vice presidents, if any, in order of their rank as fixed by the board of directors or, if not ranked, a vice president designated by the board of directors, shall perform all the duties of the president and when so acting shall have all the powers of, and be subject to all the restrictions upon, the president. The vice presidents shall have such other powers and perform such other duties as from time to time may be prescribed for them respectively by the board of directors, these bylaws, the president or the chairman of the board.

5.9 SECRETARY

The secretary shall keep or cause to be kept, at the principal executive office of the corporation or such other place as the board of directors may direct, a book of minutes of all meetings and actions of directors, committees of directors, and stockholders. The minutes shall show the time and place of each meeting, whether regular or special (and, if special, how authorized and the notice given), the names of those present at directors' meetings or committee meetings, the number of shares present or represented at stockholders' meetings, and the proceedings thereof.

The secretary shall keep, or cause to be kept, at the principal executive office of the corporation or at the office of the corporation's transfer agent or registrar, as determined by resolution of the board of directors, a share register, or a duplicate share register, showing the names of all stockholders and their addresses, the number and classes of shares held by each, the number and date of certificates

evidencing such shares, and the number and date of cancellation of every certificate surrendered for cancellation.

The secretary shall give, or cause to be given, notice of all meetings of the stockholders and of the board of directors required to be given by law or by these bylaws. He shall keep the seal of the corporation, if one be adopted, in safe custody and shall have such other powers and perform such other duties as may be prescribed by the board of directors or by these bylaws.

5.10 CHIEF FINANCIAL OFFICER

The chief financial officer shall keep and maintain, or cause to be kept and maintained, adequate and correct books and records of accounts of the properties and business transactions of the corporation, including accounts of its assets, liabilities, receipts, disbursements, gains, losses, capital retained earnings, and shares. The books of account shall at all reasonable times be open to inspection by any director.

The chief financial officer shall deposit all moneys and other valuables in the name and to the credit of the corporation with such depositories as may be designated by the board of directors. He shall disburse the funds of the corporation as may be ordered by the board of directors, shall render to the president and directors, whenever they request it, an account of all his transactions as chief financial officer and of the financial condition of the corporation, and shall have other powers and perform such other duties as may be prescribed by the board of directors or these bylaws.

The chief financial officer shall be the treasurer of the corporation.

5.11 ASSISTANT SECRETARY

The assistant secretary, or, if there is more than one, the assistant secretaries in the order determined by the stockholders or board of directors (or if there be no such determination, then in the order of their election) shall, in the absence of the secretary or in the event of his or her inability or refusal to act, perform the duties and exercise the powers of the secretary and shall perform such other duties and have such other powers as may be prescribed by the board of directors or these bylaws.

5.12 ASSISTANT TREASURER

The assistant treasurer, or, if there is more than one, the assistant treasurers, in the order determined by the stockholders or board of directors (or if there be no such determination, then in the order of their election), shall, in the absence of the chief financial officer or in the event of his or her inability or refusal to act, perform the duties and exercise the powers of the chief financial officer and shall perform such other duties and have such other powers as may be prescribed by the board of directors or these bylaws.

5.13 REPRESENTATION OF SHARES OF OTHER CORPORATIONS

The chairman of the board, the president, any vice president, the chief financial officer, the secretary or assistant secretary of this corporation, or any other person authorized by the board of directors or the president or a vice president, is authorized to vote, represent, and exercise on behalf of

this corporation all rights incident to any and all shares of any other corporation or corporations standing in the name of this corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

5.14 AUTHORITY AND DUTIES OF OFFICERS

In addition to the foregoing authority and duties, all officers of the corporation shall respectively have such authority and perform such duties in the management of the business of the corporation as may be designated from time to time by the board of directors or the stockholders.

ARTICLE VI

**INDEMNIFICATION**

6.1 INDEMNIFICATION OF DIRECTORS AND OFFICERS

The corporation shall, to the maximum extent and in the manner permitted by the General Corporation Law of Delaware as the same now exists or may hereafter be amended, indemnify any person against expenses (including attorneys' fees), judgments, fines, and amounts paid in settlement actually and reasonably incurred in connection with any threatened, pending or completed action, suit, or proceeding in which such person was or is a party or is threatened to be made a party by reason of the fact that such person is or was a director or officer of the corporation. For purposes of this Section 6.1, a "director" or "officer" of the corporation shall mean any person (i) who is or was a director or officer of the corporation, (ii) who is or was serving at the request of the corporation as a director or officer of another corporation, partnership, joint venture, trust or other enterprise, or (iii) who was a director or officer of a corporation which was a predecessor corporation of the corporation or of another enterprise at the request of such predecessor corporation.

The corporation shall be required to indemnify a director or officer in connection with an action, suit, or proceeding (or part thereof) initiated by such director or officer only if the initiation of such action, suit, or proceeding (or part thereof) by the director or officer was authorized by the Board of Directors of the corporation.

The corporation shall pay the expenses (including attorney's fees) incurred by a director or officer of the corporation entitled to indemnification hereunder in defending any action, suit or proceeding referred to in this Section 6.1 in advance of its final disposition; provided, however, that payment of expenses incurred by a director or officer of the corporation in advance of the final disposition of such action, suit or proceeding shall be made only upon receipt of an undertaking by the director or officer to repay all amounts advanced if it should ultimately be determined that the director of officer is not entitled to be indemnified under this Section 6.1 or otherwise.

The rights conferred on any person by this Article shall not be exclusive of any other rights which such person may have or hereafter acquire under any statute, provision of the corporation's Certificate of Incorporation, these bylaws, agreement, vote of the stockholders or disinterested directors or otherwise.

Any repeal or modification of the foregoing provisions of this Article shall not adversely affect any right or protection hereunder of any person in respect of any act or omission occurring prior to the time of such repeal or modification.

6.2 INDEMNIFICATION OF OTHERS

The corporation shall have the power, to the maximum extent and in the manner permitted by the General Corporation Law of Delaware as the same now exists or may hereafter be amended, to indemnify any person (other than directors and officers) against expenses (including attorneys' fees), judgments, fines, and amounts paid in settlement actually and reasonably incurred in connection with any threatened, pending or completed action, suit, or proceeding, in which such person was or is a party or is threatened to be made a party by reason of the fact that such person is or was an employee or agent of the corporation. For purposes of this Section 6.2, an "employee" or "agent" of the corporation (other than a director or officer) shall mean any person (i) who is or was an employee or agent of the corporation, (ii) who is or was serving at the request of the corporation as an employee or agent of another corporation, partnership, joint venture, trust or other enterprise, or (iii) who was an employee or agent of a corporation which was a predecessor corporation of the corporation or of another enterprise at the request of such predecessor corporation.

6.3 INSURANCE

The corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against him or her and incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the corporation would have the power to indemnify him or her against such liability under the provisions of the General Corporation Law of Delaware.

ARTICLE VII

**RECORDS AND REPORTS**

7.1 MAINTENANCE AND INSPECTION OF RECORDS

The corporation shall, either at its principal executive officer or at such place or places as designated by the board of directors, keep a record of its stockholders listing their names and addresses and the number and class of shares held by each stockholder, a copy of these bylaws as amended to date, accounting books, and other records.

Any stockholder of record, in person or by attorney or other agent, shall, upon written demand under oath stating the purpose thereof, have the right during the usual hours for business to inspect for any proper purpose the corporation's stock ledger, a list of its stockholders, and its other books and records and to make copies or extracts therefrom. A proper purpose shall mean a purpose reasonably related to such person's interest as a stockholder. In every instance where an attorney or other agent is the person who seeks the right to inspection, the demand under oath shall be accompanied by a power of

attorney or such other writing that authorizes the attorney or other agent so to act on behalf of the stockholder. The demand under oath shall be directed to the corporation at its registered office in Delaware or at its principal place of business.

The officer who has charge of the stock ledger of the corporation shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least ten (10) days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or, if not so specified, at the place where the meeting is to be held. The list shall also be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present.

7.2 INSPECTION BY DIRECTORS

Any director shall have the right to examine the corporation's stock ledger, a list of its stockholders, and its other books and records for a purpose reasonably related to his position as a director. The Court of Chancery is hereby vested with the exclusive jurisdiction to determine whether a director is entitled to the inspection sought. The Court may summarily order the corporation to permit the director to inspect any and all books and records, the stock ledger, and the stock list and to make copies or extracts therefrom. The Court may, in its discretion, prescribe any limitations or conditions with reference to the inspection, or award such other and further relief as the Court may deem just and proper.

7.3 ANNUAL STATEMENT TO STOCKHOLDERS

The board of directors shall present at each annual meeting, and at any special meeting of the stockholders when called for by vote of the stockholders, a full and clear statement of the business and condition of the corporation.

ARTICLE VIII

**GENERAL MATTERS**

8.1 CHECKS

From time to time, the board of directors shall determine by resolution which person or persons may sign or endorse all checks, drafts, other orders for payment of money, notes or other evidences of indebtedness that are issued in the name of or payable to the corporation, and only the persons so authorized shall sign or endorse those instruments.

8.2 EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS

The board of directors, except as otherwise provided in these bylaws, may authorize any officer or officers, or agent or agents, to enter into any contract or execute any instrument in the name of and on

behalf of the corporation; such authority may be general or confined to specific instances. Unless so authorized or ratified by the board of directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

8.3 STOCK CERTIFICATES; PARTLY PAID SHARES

The shares of the corporation shall be represented by certificates, provided that the board of directors of the corporation may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Notwithstanding the adoption of such a resolution by the board of directors, every holder of stock represented by certificates and upon request every holder of uncertificated shares shall be entitled to have a certificate signed by, or in the name of the corporation by the chairman or vice-chairman of the board of directors, or the president or vice-president, and by the chief financial officer or an assistant treasurer, or the secretary or an assistant secretary of such corporation representing the number of shares registered in certificate form. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate has ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if he were such officer, transfer agent or registrar at the date of issue.

The corporation may issue the whole or any part of its shares as partly paid and subject to call for the remainder of the consideration to be paid therefor. Upon the face or back of each stock certificate issued to represent any such partly paid shares, upon the books and records of the corporation in the case of uncertificated partly paid shares, the total amount of the consideration to be paid therefor and the amount paid thereon shall be stated. Upon the declaration of any dividend on fully paid shares, the corporation shall declare a dividend upon partly paid shares of the same class, but only upon the basis of the percentage of the consideration actually paid thereon.

8.4 SPECIAL DESIGNATION ON CERTIFICATES

If the corporation is authorized to issue more than one class of stock or more than one series of any class, then the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate that the corporation shall issue to represent such class or series of stock; provided, however, that, except as otherwise provided in Section 202 of the General Corporation Law of Delaware, in lieu of the foregoing requirements there may be set forth on the face or back of the certificate that the corporation shall issue to represent such class or series of stock a statement that the corporation will furnish without charge to each stockholder who so requests the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

8.5 LOST CERTIFICATES

Except as provided in this Section 8.5, no new certificates for shares shall be issued to replace a previously issued certificate unless the latter is surrendered to the corporation and cancelled at the same time. The corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the corporation may require the owner of the lost, stolen or destroyed certificate, or his legal representative, to give the corporation a bond sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

8.6 CONSTRUCTION; DEFINITIONS

Unless the context requires otherwise, the general provisions, rules of construction, and definitions in the Delaware General Corporation Law shall govern the construction of these bylaws. Without limiting the generality of this provision, the singular number includes the plural, the plural number includes the singular, and the term "person" includes both a corporation and a natural person.

8.7 DIVIDENDS

The directors of the corporation, subject to any restrictions contained in (i) the General Corporation Law of Delaware or (ii) the certificate of incorporation, may declare and pay dividends upon the shares of its capital stock. Dividends may be paid in cash, in property, or in shares of the corporation's capital stock.

The directors of the corporation may set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and may abolish any such reserve. Such purposes shall include but not be limited to equalizing dividends, repairing or maintaining any property of the corporation, and meeting contingencies.

8.8 FISCAL YEAR

The fiscal year of the corporation shall be fixed by resolution of the board of directors and may be changed by the board of directors.

8.9 SEAL

The corporation may adopt a corporate seal, which shall be adopted and which may be altered by the board of directors, and may use the same by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

8.10 TRANSFER OF STOCK

Upon surrender to the corporation or the transfer agent of the corporation of a certificate for shares duly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer, it shall be the duty of the corporation to issue a new certificate to the person entitled thereto, cancel the old certificate, and record the transaction in its books.

8.11 STOCK TRANSFER AGREEMENTS

The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the General Corporation Law of Delaware.

8.12 REGISTERED STOCKHOLDERS

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

## ARTICLE IX

## AMENDMENTS

The bylaws of the corporation may be adopted, amended or repealed by the stockholders entitled to vote; provided, however, that the corporation may, in its certificate of incorporation, confer the power to adopt, amend or repeal bylaws upon the directors. The fact that such power has been so conferred upon the directors shall not divest the stockholders of the power, nor limit their power to adopt, amend or repeal bylaws.

**Exhibit 3.4**

**AMENDED AND RESTATED BYLAWS OF**

**CAPNIA, INC.**

Adopted _____, 2014

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**BYLAWS**

## ARTICLE I — CORPORATE OFFICES

### 1.1 REGISTERED OFFICE

The registered office of Capnia, Inc. shall be fixed in the corporation's certificate of incorporation. References in these bylaws to the certificate of incorporation shall mean the certificate of incorporation of the corporation, as amended from time to time, including the terms of any certificate of designations of any series of Preferred Stock.

### 1.2 OTHER OFFICES

The corporation's board of directors may at any time establish other offices at any place or places where the corporation is qualified to do business.

## ARTICLE II — MEETINGS OF STOCKHOLDERS

### 2.1 PLACE OF MEETINGS

Meetings of stockholders shall be held at any place, within or outside the State of Delaware, designated by the board of directors. The board of directors may, in its sole discretion, determine that a meeting of stockholders shall not be held at any place, but may instead be held solely by means of remote communication as authorized by Section 211(a)(2) of the General Corporation Law of the State of Delaware (the "**DGCL**"). In the absence of any such designation or determination, stockholders' meetings shall be held at the corporation's then-principal executive office.

### 2.2 ANNUAL MEETING

The annual meeting of stockholders shall be held on such date, at such time, and at such place (if any) within or without the State of Delaware, as the board of directors shall designate from time to time and stated in the corporation's notice of the meeting. At the annual meeting, directors shall be elected and any other proper business, brought in accordance with Section 2.4 of these bylaws, may be transacted.

### 2.3 SPECIAL MEETING

(i) A special meeting of the stockholders, other than those required by statute, may be called at any time only by (A) the affirmative vote of a majority of the Whole Board, (B) the chairperson of the board of directors, (C) the chief executive officer, or (D) the president (in the absence of a chief executive officer). A special meeting of the stockholders may not be called by any other person or persons. The board of directors, by the affirmative vote of a majority of the Whole Board, may cancel, postpone or reschedule any previously scheduled special meeting at any time, before or after the notice for such meeting has been sent to the stockholders. For purposes of these Bylaws, the term "**Whole Board**" will mean the total number of authorized directors whether or not there exist any vacancies in previously authorized directorships.

(ii) The notice of a special meeting shall include the purpose for which the meeting is called. Only such business shall be conducted at a special meeting of stockholders as shall have been brought

before the meeting by or at the direction of the board of directors acting by the affirmative vote of a majority of the Whole Board, the chairperson of the board of directors, the chief executive officer or the president (in the absence of a chief executive officer).

2.4 ADVANCE NOTICE PROCEDURES

(i) *Advance Notice of Stockholder Business at Annual Meeting.* At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be brought: (A) pursuant to the corporation's proxy materials with respect to such meeting, (B) by or at the direction of the board of directors, or (C) by a stockholder who (1) is a stockholder of record at the time of the giving of the notice required by this Section 2.4(i) and on the record date for the determination of stockholders entitled to vote at the annual meeting and (2) has timely complied in proper written form with the notice procedures set forth in this Section 2.4(i). In addition, for business to be properly brought by a stockholder before an annual meeting, such business must be a proper matter for stockholder action pursuant to these bylaws and applicable law. Except for proposals properly made in accordance with Rule 14a-8 under the Securities and Exchange Act of 1934, and the rules and regulations thereunder (as so amended and inclusive of such rules and regulations), clause (C) above shall be the exclusive means for a stockholder to bring business before an annual meeting of stockholders.

(a) To comply with clause (C) of Section 2.4(i), above, a stockholder's notice must set forth all information required under this Section 2.4(i) and must be timely received by the secretary of the corporation. To be timely, a stockholder's notice must be received by the secretary at the principal executive offices of the corporation not later than the 45th day nor earlier than the 75th day before the one-year anniversary of the date on which the corporation first mailed its proxy materials or a notice of availability of proxy materials (whichever is earlier) for the preceding year's annual meeting; *provided*, *however*, that in the event that no annual meeting was held in the previous year or if the date of the annual meeting is advanced by more than 30 days prior to or delayed by more than 30 days after the one-year anniversary of the date of the previous year's annual meeting, then, for notice by the stockholder to be timely, it must be so received by the secretary not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the later of (i) the 90th day prior to such annual meeting, or (ii) the tenth day following the day on which Public Announcement (as defined below) of the date of such annual meeting is first made. In no event shall any adjournment or postponement of an annual meeting or the announcement thereof commence a new time period for the giving of a stockholder's notice as described in this Section 2.4(i)(a). "**Public Announcement**" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or a comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or any successor thereto (the "**1934 Act**").

(b) To be in proper written form, a stockholder's notice to the secretary must set forth as to each matter of business the stockholder intends to bring before the annual meeting: (1) a brief description of the business intended to be brought before the annual meeting and the reasons for conducting such business at the annual meeting, (2) the name and address, as they appear on the corporation's books, of the stockholder proposing such business and any Stockholder Associated Person (as defined below), (3) the class and number of shares of the corporation that are held of record or are beneficially owned by the stockholder or any Stockholder Associated Person and any derivative positions held or beneficially held by the stockholder or any Stockholder Associated Person as of the date of delivery of such notice, (4) whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of such stockholder or any Stockholder Associated Person with respect to any securities of the

corporation, and a description of any other agreement, arrangement or understanding (including any short position or any borrowing or lending of shares), the effect or intent of which is to mitigate loss to, or to manage the risk or benefit from share price changes for, or to increase or decrease the voting power of, such stockholder or any Stockholder Associated Person with respect to any securities of the corporation, (5) any material interest of the stockholder or a Stockholder Associated Person in such business, and (6) a statement whether either such stockholder or any Stockholder Associated Person will deliver a proxy statement and form of proxy to holders of at least the percentage of the voting power of the corporation's voting shares required under applicable law to carry the proposal (such information provided and statements made as required by clauses (1) through (6), a "**Business Solicitation Statement**"). In addition, to be in proper written form, a stockholder's notice to the secretary must be supplemented not later than ten days following the record date for notice of the meeting to disclose the information contained in clauses (3) and (4) above as of the record date for notice of the meeting. For purposes of this Section 2.4, a "**Stockholder Associated Person**" of any stockholder shall mean (i) any person controlling, directly or indirectly, or acting in concert with, such stockholder, (ii) any beneficial owner of shares of stock of the corporation owned of record or beneficially by such stockholder and on whose behalf the proposal or nomination, as the case may be, is being made, or (iii) any person controlling, controlled by or under common control with such person referred to in the preceding clauses (i) and (ii).

(c) Without exception, no business shall be conducted at any annual meeting except in accordance with the provisions set forth in this Section 2.4(i) and, if applicable, Section 2.4(ii). In addition, business proposed to be brought by a stockholder may not be brought before the annual meeting if such stockholder or a Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Business Solicitation Statement applicable to such business or if the Business Solicitation Statement applicable to such business contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. The chairperson of the annual meeting shall, if the facts warrant, determine and declare at the annual meeting that business was not properly brought before the annual meeting and in accordance with the provisions of this Section 2.4(i), and, if the chairperson should so determine, he or she shall so declare at the annual meeting that any such business not properly brought before the annual meeting shall not be conducted.

(ii) *Advance Notice of Director Nominations at Annual Meetings.* Notwithstanding anything in these bylaws to the contrary, only persons who are nominated in accordance with the procedures set forth in this Section 2.4(ii) shall be eligible for election or re-election as directors at an annual meeting of stockholders. Nominations of persons for election or re-election to the board of directors of the corporation shall be made at an annual meeting of stockholders only (A) by or at the direction of the board of directors or (B) by a stockholder who (1) was a stockholder of record at the time of the giving of the notice required by this Section 2.4(ii) and on the record date for the determination of stockholders entitled to vote at the annual meeting and (2) has complied with the notice procedures set forth in this Section 2.4(ii). In addition to any other applicable requirements, for a nomination to be made by a stockholder, the stockholder must have given timely notice thereof in proper written form to the secretary of the corporation.

(a) To comply with clause (B) of Section 2.4(ii) above, a nomination to be made by a stockholder must set forth all information required under this Section 2.4(ii) and must be received by the secretary at the then-principal executive offices of the corporation at the time set forth in, and in accordance with, the final three sentences of Section 2.4(i)(a), above; provided additionally, however, that in the event that the number of directors to be elected to the board of directors is increased and there is no Public Announcement naming all of the nominees for director or specifying the size of the increased board made by the corporation at least ten (10) days before the last day a stockholder may deliver a notice of nomination pursuant to the foregoing provisions, a stockholder's notice required by this Section 2.4(ii) shall also be

considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be received by the secretary at the principal executive offices of the corporation not later than the close of business on the tenth day following the day on which such Public Announcement is first made by the corporation.

(b) To be in proper written form, such stockholder's notice to the secretary must set forth:

(1) as to each person whom the stockholder proposes to nominate for election or re-election as a director (a "**nominee**"): (A) the name, age, business address and residence address of the nominee, (B) the principal occupation or employment of the nominee, (C) the class and number of shares of the corporation that are held of record or are beneficially owned by the nominee and any derivative positions held or beneficially held by the nominee, (D) whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of the nominee with respect to any securities of the corporation, and a description of any other agreement, arrangement or understanding (including any short position or any borrowing or lending of shares), the effect or intent of which is to mitigate loss to, or to manage the risk or benefit of share price changes for, or to increase or decrease the voting power of the nominee, (E) a description of all arrangements or understandings between or among the stockholder and each nominee and any other person or persons (naming such person or persons) pursuant to which the nominations are to be made by the stockholder or concerning the nominee's potential service on the board of directors, (F) a written statement executed by the nominee acknowledging that as a director of the corporation, the nominee will owe fiduciary duties under Delaware law with respect to the corporation and its stockholders, and (G) any other information relating to the nominee that would be required to be disclosed about such nominee if proxies were being solicited for the election or re-election of the nominee as a director, or that is otherwise required, in each case pursuant to Regulation 14A under the 1934 Act (including without limitation the nominee's written consent to being named in the proxy statement, if any, as a nominee and to serving as a director if elected or re-elected, as the case may be); and

(2) as to such stockholder giving notice, (A) the information required to be provided pursuant to clauses (2) through (5) of Section 2.4(i)(b), above, and the supplement referenced in the second sentence of Section 2.4(i)(b) above (except that the references to "business" in such clauses shall instead refer to nominations of directors for purposes of this paragraph), and (B) a statement whether either such stockholder or Stockholder Associated Person will deliver a proxy statement and form of proxy to holders of at least the percentage of the voting power of the corporation's voting shares reasonably believed by such stockholder or Stockholder Associated Person to be necessary to elect or re-elect such nominee(s) (such information provided and statements made as required by clauses (A) and (B) above, a "**Nominee Solicitation Statement**").

(c) At the request of the board of directors, any person nominated by a stockholder for election or re-election as a director must furnish to the secretary (1) that information required to be set forth in the stockholder's notice of nomination of such person as a director as of a date subsequent to the date on which the notice of such person's nomination was given and (2) such other information as may reasonably be required by the corporation to determine the eligibility of such proposed nominee to serve as an independent director or audit committee financial expert of the corporation under applicable law, securities exchange rule or regulation, or any publicly disclosed corporate governance guideline or committee charter of the corporation and (3) such other information that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such nominee; in the absence of the furnishing of any such information of the kind specified in this Section 2.4(ii)(c) if requested, such stockholder's nomination shall not be considered in proper form pursuant to this Section 2.4(ii).

(d) Without exception, no person shall be eligible for election or re-election as a director of the corporation at an annual meeting of stockholders unless nominated in accordance with the provisions set forth in this Section 2.4(ii). In addition, a nominee shall not be eligible for election or re-election if a stockholder or Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Nominee Solicitation Statement applicable to such nominee or if the Nominee Solicitation Statement applicable to such nominee contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. The chairperson of the annual meeting shall, if the facts warrant, determine and declare at the annual meeting that a nomination was not made in accordance with the provisions prescribed by these bylaws, and if the chairperson should so determine, he or she shall so declare at the annual meeting, and the defective nomination shall be disregarded.

*(iii) Advance Notice of Director Nominations for Special Meetings.*

(a) For a special meeting of stockholders at which directors are to be elected or re-elected, nominations of persons for election or re-election to the board of directors shall be made only (1) by or at the direction of the board of directors or (2) by any stockholder who (A) is a stockholder of record at the time of the giving of the notice required by this Section 2.4(iii) and on the record date for the determination of stockholders entitled to vote at the special meeting and (B) delivers a timely written notice of the nomination to the secretary that includes the information set forth in Sections 2.4(ii)(b) and (ii)(c) above. To be timely, such notice must be received by the secretary at the then-principal executive offices of the corporation not later than the close of business on the later of the 90th day prior to such special meeting or the tenth day following the day on which Public Announcement is first made of the date of the special meeting and of the nominees proposed by the board of directors to be elected or re-elected at such meeting. A person shall not be eligible for election or re-election as a director at a special meeting unless the person is nominated (i) by or at the direction of the board of directors or (ii) by a stockholder in accordance with the notice procedures set forth in this Section 2.4(iii). In addition, a nominee shall not be eligible for election or re-election if a stockholder or Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Nominee Solicitation Statement applicable to such nominee or if the Nominee Solicitation Statement applicable to such nominee contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. Any person nominated in accordance with this Section 2.4(iii) is subject to, and must comply with, the provisions of Section 2.4(ii)(c).

(b) The chairperson of the special meeting shall, if the facts warrant, determine and declare at the meeting that a nomination or business was not made in accordance with the procedures prescribed by these bylaws, and if the chairperson should so determine, he or she shall so declare at the meeting, and the defective nomination or business shall be disregarded.

*(iv) Other Requirements and Rights.* In addition to the foregoing provisions of this Section 2.4, a stockholder must also comply with all applicable requirements of state law and of the 1934 Act and the rules and regulations thereunder with respect to the matters set forth in this Section 2.4. Nothing in this Section 2.4 shall be deemed to affect any rights of:

(a) a stockholder to request inclusion of proposals in the corporation's proxy statement pursuant to Rule 14a-8 (or any successor provision) under the 1934 Act; or

(b) the corporation to omit a proposal from the corporation's proxy statement pursuant to Rule 14a-8 (or any successor provision) under the 1934 Act.

2.5 NOTICE OF STOCKHOLDERS' MEETINGS

Whenever stockholders are required or permitted to take any action at a meeting, a written notice of the meeting shall be given which shall state the place, if any, date and hour of the meeting, the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting, the record date for determining the stockholders entitled to vote at the meeting, if such date is different from the record date for determining stockholders entitled to notice of the meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called. Except as otherwise provided in the DGCL, the certificate of incorporation or these bylaws, the written notice of any meeting of stockholders shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting as of the record date for determining the stockholders entitled to notice of the meeting.

2.6 QUORUM

The holders of a majority of the voting power of the stock issued, outstanding and entitled to vote, and present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders, unless otherwise required by law, the certificate of incorporation, these bylaws or the rules of any applicable stock exchange. Where a separate vote by a class or series or classes or series is required, a majority of the voting power of the then-issued and outstanding shares of such class or series or classes or series, present in person or represented by proxy, shall constitute a quorum entitled to take action with respect to that vote on that matter, except as otherwise required by law, the certificate of incorporation, these bylaws or the rules of any applicable stock exchange.

If a quorum is not present or represented at any meeting of the stockholders, then either (i) the chairperson of the meeting, or (ii) the stockholders entitled to vote at the meeting, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present or represented. The chairperson of the meeting shall have the authority to adjourn a meeting of the stockholders in all other events. At such adjourned meeting at which a quorum is present or represented, any business may be transacted that might have been transacted at the original meeting.

2.7 ADJOURNED MEETING; NOTICE

When a meeting is adjourned to another time or place, unless these bylaws otherwise require, notice need not be given of the adjourned meeting if the time, place, if any, thereof, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting, are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than 30 days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If, after the adjournment, a new record date for stockholders entitled to vote is fixed for the adjourned meeting, the board of directors shall fix a new record date for notice of such adjourned meeting in accordance with Section 213(a) of the DGCL and Section 2.11 of these bylaws, and shall give notice of the adjourned meeting to each stockholder of record entitled to vote at such adjourned meeting as of the record date fixed for notice of such adjourned meeting.

2.8 CONDUCT OF BUSINESS

The chairperson of any meeting of stockholders shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of business. The chairperson of any meeting of stockholders shall be designated by the board of directors; in the absence of such designation, the chairperson of the board, if any, the chief executive officer (in the absence of the chairperson) or the president (in the absence of the chairperson of the board and the chief executive officer), or in their absence any other executive officer of the corporation, shall serve as chairperson of the stockholder meeting.

2.9 VOTING

The stockholders entitled to vote at any meeting of stockholders shall be determined in accordance with the provisions of Section 2.11 of these bylaws, subject to Section 217 (relating to voting rights of fiduciaries, pledgors and joint owners of stock) and Section 218 (relating to voting trusts and other voting agreements) of the DGCL.

Except as may be otherwise provided in the certificate of incorporation, each stockholder shall be entitled to one vote for each share of capital stock held by such stockholder.

Except as otherwise required by law, the certificate of incorporation, these bylaws or the rules of any applicable stock exchange, in all matters other than the election of directors, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at the meeting and entitled to vote on the subject matter shall be the act of the stockholders. Except as otherwise required by law, the certificate of incorporation, these bylaws or the rules of any applicable stock exchange, directors shall be elected by a plurality of the voting power of the shares present in person or represented by proxy at the meeting and entitled to vote on the election of directors. Where a separate vote by a class or series or classes or series is required, in all matters other than the election of directors, the affirmative vote of the majority of the voting power of shares of such class or series or classes or series present in person or represented by proxy at the meeting shall be the act of such class or series or classes or series, except as otherwise provided by law, the certificate of incorporation, these bylaws or the rules of any applicable stock exchange.

2.10 STOCKHOLDER ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Subject to the rights of the holders of the shares of any series of Preferred Stock or any other class of stock or series thereof that have been expressly granted the right to take action by written consent, any action required or permitted to be taken by the stockholders of the corporation must be effected at a duly called annual or special meeting of stockholders of the corporation and may not be effected by any consent in writing by such stockholders.

2.11 RECORD DATES

In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the board of directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the board of directors and which record date shall not be more than 60 nor less than 10 days before the date of such meeting. If the board of directors so fixes a date, such date shall also be the record date for determining the stockholders entitled to vote at such meeting unless the board of directors determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for making such determination.

If no record date is fixed by the board of directors, the record date for determining stockholders entitled to notice of and to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however,* that the board of directors may fix a new record date for determination of stockholders entitled to vote at the adjourned meeting, and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote in accordance with the provisions of Section 213 of the DGCL and this Section 2.11 at the adjourned meeting.

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

2.12 PROXIES

Each stockholder entitled to vote at a meeting of stockholders may authorize another person or persons to act for such stockholder by proxy authorized by an instrument in writing or by a transmission permitted by law filed in accordance with the procedure established for the meeting, but no such proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period. The revocability of a proxy that states on its face that it is irrevocable shall be governed by the provisions of Section 212 of the DGCL. A written proxy may be in the form of a telegram, cablegram, or other means of electronic transmission which sets forth or is submitted with information from which it can be determined that the telegram, cablegram, or other means of electronic transmission was authorized by the stockholder.

2.13 LIST OF STOCKHOLDERS ENTITLED TO VOTE

The officer who has charge of the stock ledger of the corporation shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting; *provided, however,* if the record date for determining the stockholders entitled to vote is less than ten (10) days before the meeting date, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting date. The stockholder list shall be arranged in alphabetical order and show the address of each stockholder and the number of shares registered in the name of each stockholder. The corporation shall not be required to include electronic mail addresses or other electronic contact information on such list. Such list shall be open to the examination of any stockholder for any purpose germane to the meeting for a period of at least ten (10) days prior to the meeting (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the corporation's then-principal place of business. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. If the meeting is to be held at a place (as opposed to solely by means of remote communication), then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be examined by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also

be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. Such list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

2.14 INSPECTORS OF ELECTION

Before any meeting of stockholders, the board of directors shall appoint an inspector or inspectors of election to act at the meeting or its adjournment. The number of inspectors shall be either one (1) or three (3). If any person appointed as inspector fails to appear or fails or refuses to act, then the chairperson of the meeting shall appoint a person to fill that vacancy.

Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath to execute faithfully the duties of inspector with strict impartiality and according to the best of his or her ability. The inspector or inspectors so appointed and designated shall (i) ascertain the number of shares of capital stock of the corporation outstanding and the voting power of each share, (ii) determine the shares of capital stock of the corporation represented at the meeting and the validity of proxies and ballots, (iii) count all votes and ballots, (iv) determine and retain for a reasonable period a record of the disposition of any challenges made to any determination by the inspectors, (v) certify their determination of the number of shares of capital stock of the corporation represented at the meeting and such inspector or inspectors' count of all votes and ballots, (vi) determine the result; and (vii) do any other acts that may be proper to conduct the election or vote with fairness to all stockholders.

In determining the validity and counting of proxies and ballots cast at any meeting of stockholders of the corporation, the inspector or inspectors may consider such information as is permitted by applicable law. If there are three (3) inspectors of election, the decision, act or certificate of a majority is effective in all respects as the decision, act or certificate of all. Any report or certificate made by the inspectors of election is prima facie evidence of the facts stated therein.

## ARTICLE III — DIRECTORS

3.1 POWERS

The business and affairs of the corporation shall be managed by or under the direction of the board of directors, except as may be otherwise provided in the DGCL or the certificate of incorporation.

3.2 NUMBER OF DIRECTORS

The board of directors shall consist of one or more members, each of whom shall be a natural person. Unless the certificate of incorporation fixes the number of directors, the number of directors shall be determined from time to time solely by resolution of the board of directors. No reduction of the authorized number of directors shall have the effect of removing any director before that director's term of office expires.

3.3 ELECTION, QUALIFICATION AND TERM OF OFFICE OF DIRECTORS

Except as provided in Section 3.4 of these bylaws, each director, including a director elected to fill a vacancy, shall hold office until the expiration of the term for which elected and until such director's successor is elected and qualified or until such director's earlier death, resignation or removal. Directors need not be stockholders unless so required by the certificate of incorporation or these bylaws. The certificate of

incorporation or these bylaws may prescribe other qualifications for directors. If so provided in the certificate of incorporation, the directors of the corporation shall be divided into classes.

3.4 RESIGNATION AND VACANCIES

Any director may resign at any time upon notice given in writing or by electronic transmission to the corporation; *provided, however*, that if such notice is given by electronic transmission, such electronic transmission must either set forth or be submitted with information from which it can be determined that the electronic transmission was authorized by the director. A resignation is effective when the resignation is delivered unless the resignation specifies a later effective date or an effective date determined upon the happening of an event or events. Acceptance of such resignation shall not be necessary to make it effective. A resignation which is conditioned upon the director failing to receive a specified vote for reelection as a director may provide that it is irrevocable. Unless otherwise provided in the certificate of incorporation or these bylaws, when one or more directors resign from the board of directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective.

Unless otherwise provided in the certificate of incorporation or these bylaws, vacancies and newly created directorships resulting from any increase in the authorized number of directors elected by all of the stockholders having the right to vote as a single class shall be filled only by a majority of the directors then-in office, although less than a quorum, or by a sole remaining director. If the directors are divided into classes, a person so elected by the directors then in office to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen and until his or her successor shall have been duly elected and qualified.

If, at the time of filling any vacancy or any newly created directorship, the directors then-in office constitute less than a majority of the whole board of directors (as constituted immediately prior to any such increase), the Court of Chancery may, upon application of any stockholder or stockholders holding at least 10% of the voting stock at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office as aforesaid, which election shall be governed by the provisions of Section 211 of the DGCL as far as applicable.

3.5 PLACE OF MEETINGS; MEETINGS BY TELEPHONE

The board of directors may hold meetings, both regular and special, either within or outside the State of Delaware.

Unless otherwise restricted by the certificate of incorporation or these bylaws, members of the board of directors, or any committee designated by the board of directors, may participate in a meeting of the board of directors, or any committee, by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

3.6 REGULAR MEETINGS

Regular meetings of the board of directors may be held without notice at such time and at such place as shall from time to time be determined by the board of directors.

3.7 SPECIAL MEETINGS; NOTICE

Special meetings of the board of directors for any purpose or purposes may be called at any time by the chairperson of the board of directors, the chief executive officer, the president, the secretary or a majority of the authorized number of directors, at such times and places as he or she or they shall designate.

Notice of the time and place of special meetings shall be:

(i) delivered personally by hand, by courier or by telephone;

(ii) sent by United States first-class mail, postage prepaid;

(iii) sent by facsimile; or

(iv) sent by electronic mail,

directed to each director at that director's address, telephone number, facsimile number or electronic mail address, as the case may be, as shown on the corporation's records.

If the notice is (i) delivered personally by hand, by courier or by telephone, (ii) sent by facsimile or (iii) sent by electronic mail, it shall be delivered or sent at least 24 hours before the time of the holding of the meeting. If the notice is sent by United States mail, it shall be deposited in the United States mail at least four days before the time of the holding of the meeting. Any oral notice may be communicated to the director. The notice need not specify the place of the meeting (if the meeting is to be held at the corporation's principal executive office) nor the purpose of the meeting.

3.8 QUORUM; VOTING

At all meetings of the board of directors, a majority of the total authorized number of directors shall constitute a quorum for the transaction of business. If a quorum is not present at any meeting of the board of directors, then the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present.

The vote of a majority of the directors present at any meeting at which a quorum is present shall be the act of the board of directors, except as may be otherwise specifically provided by[the DGCL/applicable law], the certificate of incorporation or these bylaws.

If the certificate of incorporation provides that one or more directors shall have more or less than one vote per director on any matter, every reference in these bylaws to a majority or other proportion of the directors shall refer to a majority or other proportion of the votes of such directors.

3.9 BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Unless otherwise restricted by the certificate of incorporation, these bylaws or [DGCL/applicable law], any action required or permitted to be taken at any meeting of the board of directors, or of any committee thereof, may be taken without a meeting if all members of the board of directors or committee, as the case may be, consent thereto in writing or by electronic transmission and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the board of directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

3.10 FEES AND COMPENSATION OF DIRECTORS

Unless otherwise restricted by the certificate of incorporation, these bylaws or [DCGL/applicable law], the board of directors shall have the authority to fix the compensation of directors.

3.11 REMOVAL OF DIRECTORS

A director may be removed from office by the stockholders of the corporation only for cause.

No reduction of the authorized number of directors shall have the effect of removing any director prior to the expiration of such director's term of office.

**ARTICLE IV — COMMITTEES**

4.1 COMMITTEES OF DIRECTORS

The board of directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The board of directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the board of directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the board of directors or in these bylaws, shall have and may exercise all the powers and authority of the board of directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority to (i) approve or adopt, or recommend to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopt, amend or repeal any bylaw of the corporation.

4.2 COMMITTEE MINUTES

Each committee shall keep regular minutes of its meetings and report the same to the board of directors when required.

4.3 MEETINGS AND ACTION OF COMMITTEES

Meetings and actions of committees shall be governed by, and held and taken in accordance with, the provisions of:

(i) Section 3.5 (place of meetings and meetings by telephone);

(ii) Section 3.6 (regular meetings);

(iii) Section 3.7 (special meetings; notice);

(iv) Section 3.8 (quorum; voting);

(v) Section 3.9 (action without a meeting); and

(vi) Section 7.5 (waiver of notice)

with such changes in the context of those bylaws as are necessary to substitute the committee and its members for the board of directors and its members. *However*:

(i) the time of regular meetings of committees may be determined by resolution of the committee;

(ii) special meetings of committees may also be called by resolution of the committee; and

(iii) notice of special meetings of committees shall also be given to all alternate members, who shall have the right to attend all meetings of the committee. The board of directors or a committee may adopt rules for the government of any committee not inconsistent with the provisions of these bylaws.

Any provision in the certificate of incorporation providing that one or more directors shall have more or less than one vote per director on any matter shall apply to voting in any committee or subcommittee, unless otherwise provided in the certificate of incorporation or these bylaws.

4.4 SUBCOMMITTEES

Unless otherwise provided in the certificate of incorporation, these bylaws or the resolutions of the board of directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

**ARTICLE V — OFFICERS**

5.1 OFFICERS

The officers of the corporation shall be a president and a secretary. The corporation may also have, at the discretion of the board of directors, a chairperson of the board of directors, a vice chairperson of the board of directors, a chief executive officer, a chief financial officer or treasurer, one or more vice presidents, one or more assistant vice presidents, one or more assistant treasurers, one or more assistant secretaries, and any such other officers as may be appointed in accordance with the provisions of these bylaws. Any number of offices may be held by the same person.

5.2 APPOINTMENT OF OFFICERS

The board of directors shall appoint the officers of the corporation, except such officers as may be appointed in accordance with the provisions of Section 5.3 of these bylaws, subject to the rights, if any, of an officer under any contract of employment. A vacancy in any office because of death, resignation, removal, disqualification or any other cause shall be filled in the manner prescribed in this Section 5 for the regular election to such office.

5.3 SUBORDINATE OFFICERS

The board of directors may appoint, or empower the chief executive officer or, in the absence of a chief executive officer, the president, to appoint, such other officers and agents as the business of the

corporation may require. Each of such officers and agents shall hold office for such period, have such authority, and perform such duties as are provided in these bylaws or as the board of directors may from time to time determine.

5.4 REMOVAL AND RESIGNATION OF OFFICERS

Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, either with or without cause, by an affirmative vote of the majority of the board of directors at any regular or special meeting of the board of directors. Any such officer, except in the case of an officer chosen by the board of directors, may also be removed by an officer upon whom such power of removal may be conferred by the board of directors.

Any officer may resign at any time by giving written or electronic notice to the corporation; *provided, however*, that if such notice is given by electronic transmission, such electronic transmission must either set forth or be submitted with information from which it can be determined that the electronic transmission was authorized by the officer. Any resignation shall take effect at the date of the receipt of that notice or at any later time specified in that notice. Unless otherwise specified in the notice of resignation, the acceptance of the resignation shall not be necessary to make it effective. Any resignation is without prejudice to the rights, if any, of the corporation under any contract to which the officer is a party.

5.5 VACANCIES IN OFFICES

Any vacancy occurring in any office of the corporation shall be filled by the board of directors or as provided in Section 5.3.

5.6 REPRESENTATION OF SHARES OF OTHER CORPORATIONS

The chairperson of the board of directors, the president, any vice president, the treasurer, the secretary or assistant secretary of this corporation, or any other person authorized by the board of directors or the president or a vice president, is authorized to vote, represent, and exercise on behalf of this corporation all rights incident to any and all shares of any other corporation or corporations standing in the name of this corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

5.7 AUTHORITY AND DUTIES OF OFFICERS

All officers of the corporation shall respectively have such authority and perform such duties in the management of the business of the corporation as may be designated from time to time by the board of directors and, to the extent not so provided, as generally pertain to their respective offices, subject to the control of the board of directors.

5.8 THE CHAIRPERSON OF THE BOARD

The chairperson of the board shall have the powers and duties customarily and usually associated with the office of the chairperson of the board. The chairperson of the board shall preside at meetings of the board of directors.

5.9 THE VICE CHAIRPERSON OF THE BOARD

The vice chairperson of the board shall have the powers and duties customarily and usually associated with the office of the vice chairperson of the board. In the case of absence or disability of the chairperson of the board, the vice chairperson of the board shall perform the duties and exercise the powers of the chairperson of the board.

5.10 THE CHIEF EXECUTIVE OFFICER

The chief executive officer shall have, subject to the supervision, direction and control of the board of directors, ultimate authority for decisions relating to the supervision, direction and management of the affairs and the business of the corporation customarily and usually associated with the position of chief executive officer, including, without limitation, all powers necessary to direct and control the organizational and reporting relationships within the corporation. If at any time the office of the chairperson and vice chairperson of the board shall not be filled, or in the event of the temporary absence or disability of the chairperson of the board and the vice chairperson of the board, the chief executive officer shall perform the duties and exercise the powers of the chairperson of the board unless otherwise determined by the board of directors.

5.11 THE PRESIDENT

The president shall have, subject to the supervision, direction and control of the board of directors, the general powers and duties of supervision, direction and management of the affairs and business of the corporation customarily and usually associated with the position of president. The president shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chairperson of the board or the chief executive officer. In the event of the absence or disability of the chief executive officer, the president shall perform the duties and exercise the powers of the chief executive officer unless otherwise determined by the board of directors.

5.12 THE VICE PRESIDENTS AND ASSISTANT VICE PRESIDENTS

Each vice president and assistant vice president shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chairperson of the board, the chief executive officer or the president.

5.13 THE SECRETARY AND ASSISTANT SECRETARIES

(i) The secretary shall attend meetings of the board of directors and meetings of the stockholders and record all votes and minutes of all such proceedings in a book or books kept for such purpose. The secretary shall have all such further powers and duties as are customarily and usually associated with the position of secretary or as may from time to time be assigned to him or her by the board of directors, the chairperson of the board, the chief executive officer or the president.

(ii) Each assistant secretary shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chairperson of the board, the chief executive officer, the president or the secretary. In the event of the absence, inability or refusal to act of the secretary, the assistant secretary (or if there shall be more than one, the assistant secretaries in the order determined by the board of directors) shall perform the duties and exercise the powers of the secretary.

5.14 THE CHIEF FINANCIAL OFFICER AND ASSISTANT TREASURERS

(i) The chief financial officer shall be the treasurer of the corporation. The chief financial officer shall have custody of the corporation's funds and securities, shall be responsible for maintaining the corporation's accounting records and statements, shall keep full and accurate accounts of receipts and disbursements in books belonging to the corporation, and shall deposit or cause to be deposited moneys or other valuable effects in the name and to the credit of the corporation in such depositories as may be designated by the board of directors. The chief financial officer shall also maintain adequate records of all assets, liabilities and transactions of the corporation and shall assure that adequate audits thereof are currently and regularly made. The chief financial officer shall have all such further powers and duties as are customarily and usually associated with the position of chief financial officer, or as may from time to time be assigned to him or her by the board of directors, the chairperson, the chief executive officer or the president.

(ii) Each assistant treasurer shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chief executive officer, the president or the chief financial officer. In the event of the absence, inability or refusal to act of the chief financial officer, the assistant treasurer (or if there shall be more than one, the assistant treasurers in the order determined by the board of directors) shall perform the duties and exercise the powers of the chief financial officer.

## ARTICLE VI — STOCK

6.1 STOCK CERTIFICATES; PARTLY PAID SHARES

The shares of the corporation shall be represented by certificates, provided that the board of directors may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Every holder of stock represented by certificates shall be entitled to have a certificate signed by, or in the name of the corporation by the chairperson of the board of directors or vice-chairperson of the board of directors, or the president or a vice-president, and by the treasurer or an assistant treasurer, or the secretary or an assistant secretary representing the number of shares registered in certificate form. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate has ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if such person were such officer, transfer agent or registrar at the date of issue. The corporation shall not have power to issue a certificate in bearer form.

The corporation may issue the whole or any part of its shares as partly paid and subject to call for the remainder of the consideration to be paid therefor. Upon the face or back of each stock certificate issued to represent any such partly-paid shares, or upon the books and records of the corporation in the case of uncertificated partly-paid shares, the total amount of the consideration to be paid therefor and the amount paid thereon shall be stated. Upon the declaration of any dividend on fully-paid shares, the corporation shall declare a dividend upon partly-paid shares of the same class, but only upon the basis of the percentage of the consideration actually paid thereon.

6.2 SPECIAL DESIGNATION ON CERTIFICATES

If the corporation is authorized to issue more than one class of stock or more than one series of any class, then the powers, the designations, the preferences, and the relative, participating, optional or other

special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate that the corporation shall issue to represent such class or series of stock; *provided, however*, that, except as otherwise provided in Section 202 of the DGCL, in lieu of the foregoing requirements there may be set forth on the face or back of the certificate that the corporation shall issue to represent such class or series of stock, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Within a reasonable time after the issuance or transfer of uncertificated stock, the corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to this section 6.2 or Sections 151, 156, 202(a) or 218(a) of the DGCL or with respect to this section 6.2 a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Except as otherwise expressly provided by law, the rights and obligations of the holders of uncertificated stock and the rights and obligations of the holders of certificates representing stock of the same class and series shall be identical.

6.3 LOST, STOLEN OR DESTROYED CERTIFICATES

Except as provided in this Section 6.3, no new certificates for shares shall be issued to replace a previously issued certificate unless the latter is surrendered to the corporation and cancelled at the same time. The corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to give the corporation a bond sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

6.4 DIVIDENDS

The board of directors, subject to any restrictions contained in the certificate of incorporation or applicable law, may declare and pay dividends upon the shares of the corporation's capital stock. Dividends may be paid in cash, in property, or in shares of the corporation's capital stock, subject to the provisions of the certificate of incorporation.

The board of directors may set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and may abolish any such reserve. Such purposes shall include but not be limited to equalizing dividends, repairing or maintaining any property of the corporation, and meeting contingencies.

6.5 TRANSFER OF STOCK

Transfers of record of shares of stock of the corporation shall be made only upon its books by the holders thereof, in person or by an attorney duly authorized, and, if such stock is certificated, upon the surrender of a certificate or certificates for a like number of shares, properly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer; *provided, however,* that such succession, assignment or authority to transfer is not prohibited by the certificate of incorporation, these bylaws, applicable law or contract.

6.6 STOCK TRANSFER AGREEMENTS

The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

6.7 REGISTERED STOCKHOLDERS

The corporation:

(i) shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends and to vote as such owner;

(ii) shall be entitled (to the fullest extent permitted by applicable law) to hold liable for calls and assessments the person registered on its books as the owner of shares; and

(iii) shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of another person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

**ARTICLE VII — MANNER OF GIVING NOTICE AND WAIVER**

7.1 NOTICE OF STOCKHOLDERS' MEETINGS

Notice of any meeting of stockholders, if mailed, is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the corporation's records. An affidavit of the secretary or an assistant secretary or of the transfer agent or other agent of the corporation that the notice has been given shall, in the absence of fraud, be *prima facie* evidence of the facts stated therein.

7.2 NOTICE BY ELECTRONIC TRANSMISSION

Without limiting the manner by which notice otherwise may be given effectively to stockholders pursuant to the DGCL, the certificate of incorporation or these bylaws, any notice to stockholders given by the corporation under any provision of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any such consent shall be deemed revoked if:

(i) the corporation is unable to deliver by electronic transmission two consecutive notices given by the corporation in accordance with such consent; and

(ii) such inability becomes known to the secretary or an assistant secretary or to the transfer agent, or other person responsible for the giving of notice.

However, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action.

Any notice given pursuant to the preceding paragraph shall be deemed given:

(i) if by facsimile telecommunication, when directed to a number at which the stockholder has consented to receive notice;

(ii) if by electronic mail, when directed to an electronic mail address at which the stockholder has consented to receive notice;

(iii) if by a posting on an electronic network together with separate notice to the stockholder of such specific posting, upon the later of (A) such posting and (B) the giving of such separate notice; and

(iv) if by any other form of electronic transmission, when directed to the stockholder.

An affidavit of the secretary or an assistant secretary or of the transfer agent or other agent of the corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be *prima facie* evidence of the facts stated therein.

An "**electronic transmission**" means any form of communication, not directly involving the physical transmission of paper, that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient through an automated process.

7.3 NOTICE TO STOCKHOLDERS SHARING AN ADDRESS

Except as otherwise prohibited under the DGCL, without limiting the manner by which notice otherwise may be given effectively to stockholders, any notice to stockholders given by the corporation under the provisions of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any stockholder who fails to object in writing to the corporation, within 60 days of having been given written notice by the corporation of its intention to send the single notice, shall be deemed to have consented to receiving such single written notice.

7.4 NOTICE TO PERSON WITH WHOM COMMUNICATION IS UNLAWFUL

Whenever notice is required to be given, under the DGCL, the certificate of incorporation or these bylaws, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

7.5 WAIVER OF NOTICE

Whenever notice is required to be given to stockholders, directors or other persons under any provision of the DGCL, the certificate of incorporation or these bylaws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether

before or after the time of the event for which notice is to be given, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders or the board of directors, as the case may be, need be specified in any written waiver of notice or any waiver by electronic transmission unless so required by the certificate of incorporation or these bylaws.

## ARTICLE VIII — INDEMNIFICATION

8.1 INDEMNIFICATION OF DIRECTORS AND OFFICERS IN THIRD PARTY PROCEEDINGS

Subject to the other provisions of this Article VIII, the corporation shall indemnify, to the fullest extent permitted by the DGCL, as now or hereinafter in effect, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (a "**Proceeding**") (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director of the corporation or an officer of the corporation, or while a director of the corporation or officer of the corporation is or was serving at the request of the corporation as a director, officer, employee or agent of a subsidiary or another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such Proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe such person's conduct was unlawful. The termination of any Proceeding by judgment, order, settlement, conviction, or upon a plea of *nolo contendere* or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that such person's conduct was unlawful.

8.2 INDEMNIFICATION OF DIRECTORS AND OFFICERS IN ACTIONS BY OR IN THE RIGHT OF THE CORPORATION

Subject to the other provisions of this Article VIII, the corporation shall indemnify, to the fullest extent permitted by the DGCL, as now or hereinafter in effect, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person is or was a director or officer of the corporation, or while a director or officer of the corporation is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation; except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

8.3 SUCCESSFUL DEFENSE

To the extent that a present or former director or officer of the corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding described in Section 8.1 or Section 8.2, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

8.4 INDEMNIFICATION OF OTHERS; ADVANCE PAYMENT TO OTHERS

Subject to the other provisions of this Article VIII, the corporation shall have power to advance expenses to and indemnify its employees and its agents to the extent not prohibited by the DGCL or other applicable law. The board of directors shall have the power to delegate the determination of whether employees or agents shall be indemnified or receive an advancement of expenses to such person or persons as the board of determines.

8.5 ADVANCE PAYMENT OF EXPENSES

Expenses (including attorneys' fees) incurred by an officer or director of the corporation in defending any Proceeding shall be paid by the corporation in advance of the final disposition of such Proceeding upon receipt of a written request therefor (together with documentation reasonably evidencing such expenses) and an undertaking by or on behalf of the person to repay such amounts if it shall ultimately be determined that the person is not entitled to be indemnified under this Article VIII or the DGCL. Such expenses (including attorneys' fees) incurred by former directors and officers or other employees and agents may be so paid upon such terms and conditions, if any, as the corporation deems reasonably appropriate and shall be subject to the corporation's expense guidelines.

8.6 LIMITATION ON INDEMNIFICATION

Subject to the requirements in Section 8.3 and the DGCL, the corporation shall not be obligated to indemnify any person pursuant to this Article VIII in connection with any Proceeding (or any part of any Proceeding):

(i) for which payment has actually been made to or on behalf of such person under any statute, insurance policy, indemnity provision, vote or otherwise, except with respect to any excess beyond the amount paid;

(ii) for an accounting or disgorgement of profits pursuant to Section 16(b) of the 1934 Act, or similar provisions of federal, state or local statutory law or common law, if such person is held liable therefor (including pursuant to any settlement arrangements);

(iii) for any reimbursement of the corporation by such person of any bonus or other incentive-based or equity-based compensation or of any profits realized by such person from the sale of securities of the corporation, as required in each case under the 1934 Act (including any such reimbursements that arise from an accounting restatement of the corporation pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the "**Sarbanes-Oxley Act**"), or the payment to the corporation of profits arising from the purchase and sale by such person of securities in violation of Section 306 of the Sarbanes-Oxley Act), if such person is held liable therefor (including pursuant to any settlement arrangements);

(iv) initiated by such person against the corporation or its directors, officers, employees, agents or other indemnitees, unless (a) the board of directors authorized the Proceeding (or the relevant part of

the Proceeding) prior to its initiation, (b) the corporation provides the indemnification, in its sole discretion, pursuant to the powers vested in the corporation under applicable law, (c) otherwise required to be made under Section 8.7 or (d) otherwise required by applicable law; or

(v) if prohibited by applicable law; *provided, however*, that if any provision or provisions of this Article VIII shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (1) the validity, legality and enforceability of the remaining provisions of this Article VIII (including, without limitation, each portion of any paragraph or clause containing any such provision held to be invalid, illegal or unenforceable, that is not itself held to be invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; and (2) to the fullest extent possible, the provisions of this Article VIII (including, without limitation, each such portion of any paragraph or clause containing any such provision held to be invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested by the provision held invalid, illegal or unenforcebable.

8.7 DETERMINATION; CLAIM

If a claim for indemnification or advancement of expenses under this Article VIII is not paid in full within 90 days after receipt by the corporation of the written request therefor, the claimant shall be entitled to an adjudication by a court of competent jurisdiction of his or her entitlement to such indemnification or advancement of expenses. The corporation shall indemnify such person against any and all expenses that are incurred by such person in connection with any action for indemnification or advancement of expenses from the corporation under this Article VIII, to the extent such person is successful in such action, and to the extent not prohibited by law. In any such suit, the corporation shall, to the fullest extent not prohibited by law, have the burden of proving that the claimant is not entitled to the requested indemnification or advancement of expenses.

8.8 NON-EXCLUSIVITY OF RIGHTS

The indemnification and advancement of expenses provided by, or granted pursuant to, this Article VIII shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under the certificate of incorporation or any statute, bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office. The corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advancement of expenses, to the fullest extent not prohibited by the DGCL or other applicable law.

8.9 INSURANCE

The corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under the provisions of the DGCL.

8.10 SURVIVAL

The rights to indemnification and advancement of expenses conferred by this Article VIII shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

8.11 EFFECT OF REPEAL OR MODIFICATION

Any amendment, alteration or repeal of this Article VIII shall not adversely affect any right or protection hereunder of any person in respect of any act or omission occurring prior to such amendment, alteration or repeal.

8.12 CERTAIN DEFINITIONS

For purposes of this Article VIII, references to the "**corporation**" shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Article VIII with respect to the resulting or surviving corporation as such person would have with respect to such constituent corporation if its separate existence had continued. For purposes of this Article VIII, references to "**other enterprises**" shall include employee benefit plans; references to "**fines**" shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to "**serving at the request of the corporation**" shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "**not opposed to the best interests of the corporation**" as referred to in this Article VIII.

## ARTICLE IX — GENERAL MATTERS

9.1 EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS

Except as otherwise provided by law, the certificate of incorporation or these bylaws, the board of directors may authorize any officer or officers, or agent or agents, to enter into any contract or execute any document or instrument in the name of and on behalf of the corporation; such authority may be general or confined to specific instances. Unless so authorized or ratified by the board of directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

9.2 FISCAL YEAR

The fiscal year of the corporation shall be fixed by resolution of the board of directors and may be changed by the board of directors.

9.3 SEAL

The corporation may adopt a corporate seal, which shall be adopted and which may be altered by the board of directors. The corporation may use the corporate seal by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

9.4 CONSTRUCTION; DEFINITIONS

Unless the context requires otherwise, the general provisions, rules of construction, and definitions in the DGCL shall govern the construction of these bylaws. Without limiting the generality of this provision, the singular number includes the plural, the plural number includes the singular, and the term "**person**" includes both an entity and a natural person.

## ARTICLE X — AMENDMENTS

These bylaws may be adopted, amended or repealed by the affirmative vote of the holders of at least 66 2/3% of the total voting power of outstanding voting securities, voting together as a single class. The board of directors, acting by the affirmative vote of a majority of the Whole Board, shall also have the power to adopt, amend or repeal bylaws; *provided, however*, that a bylaw amendment adopted by stockholders which specifies the votes that shall be necessary for the election of directors shall not be further amended or repealed by the board of directors.

**Exhibit 4.2**

**CAPNIA, INC.**

**AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT**

March 20, 2008

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Schedules:

**AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT**

THIS AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "Agreement") is made as of March 20, 2008, by and among CAPNIA, INC., a Delaware corporation (the "Company"), the individuals and entities listed on Schedule A hereto (each, an "Investor" and collectively, the "Investors") and certain holders of Common Stock listed on Schedule B hereto (each, a "Common Holder" and collectively, the "Common Holders"). This Agreement amends, supersedes and replaces the Company's Amended and Restated Investors' Rights Agreement, dated October 23, 2006 (the "Prior Agreement").

**R E C I T A L S**

**WHEREAS**, certain of the Holders (the "Existing Holders") hold shares of the Company's Series A Preferred Stock, Series B Preferred Stock and/or shares of Common Stock issuable upon conversion thereof and possess registration rights, information rights, rights of first offer and other rights pursuant to the Prior Agreement;

**WHEREAS**, the Existing Holders are holders of at least at least two-thirds (2/3) of the outstanding Registrable Securities as of immediately before the date hereof (the "Majority Investors"), and desire to terminate the Prior Agreement and to accept the rights created pursuant to this Agreement in lieu of the rights granted to them under the Prior Agreement;

**WHEREAS**, the Company and certain Holders are parties to the Company's Series C Preferred Stock Purchase Agreement of even date herewith (the "Purchase Agreement"); and

**WHEREAS**, certain of the Holders' obligations under the Purchase Agreement are conditioned upon the execution and delivery of this Agreement by the Majority Investors and the Company.

**NOW, THEREFORE**, in consideration of the promises, covenants, and conditions set forth herein, the parties hereto hereby agree as follows:

1. Registration Rights. The Company covenants and agrees as follows:

1.1 Definitions. For purposes of this Agreement:

(a) The term "1934 Act" shall mean the Securities Exchange Act of 1934, as amended.

(b) The term "Act" means the Securities Act of 1933, as amended.

(c) The term "Board" means the Company's Board of Directors.

(d) The term "Common Stock" means the common stock of the Company.

(e) The term "Conversion Stock" shall mean the shares of Common Stock issued or issuable upon conversion of the Shares.

(f) The term "Form S-3" means such form under the Act as in effect on the date hereof or any registration form under the Act subsequently adopted by the SEC that permits inclusion or incorporation of substantial information by reference to other documents filed by the Company with the SEC.

(g) The term "Holder" means any person owning or having the right to acquire Registrable Securities or any assignee thereof in accordance with Section 1.13; *provided, however*, a Common Holder shall not be consider a Holder for the purposes of Sections 1.2, 1.6, 1.11, 1.12, and 1.14.

(h) The term "Preferred Stock" means the preferred stock of the Company.

(i) The terms "register," "registered," and "registration" refer to a registration effected by preparing and filing a registration statement or similar document in compliance with the Act, and the declaration or ordering of effectiveness of such registration statement or document.

(j) The term "Registrable Securities" means (i) the Conversion Stock, (ii) the Common Stock issued to the Common Holders; provided, however, that such shares of Common Stock shall not be deemed Registrable Securities for the purposes of Sections 1.2 or 1.12, and (iii) any Common Stock of the Company issued as (or issuable upon the conversion or exercise of any warrant, right or other security that is issued as) a dividend or other distribution with respect to, or in exchange for, or in replacement of, the shares referenced in (i) and (ii) above; provided, however, that the term "Registrable Securities" shall exclude in all cases any Registrable Securities sold by a person in a transaction in which his rights under this Section 1 are not assigned and provided further that shares of Common Stock or other securities shall only be treated as Registrable Securities if and so long as they have not been sold to or through a broker or dealer or underwriter in a public distribution or a public securities transaction.

(k) The number of shares of "Registrable Securities then outstanding" shall be determined by the number of shares of Common Stock outstanding that are, and the number of shares of Common Stock issuable pursuant to then exercisable or convertible securities that are, Registrable Securities.

(l) The term "Rule 144" shall mean Rule 144 as promulgated by the SEC under the Act, as such Rule may be amended from time to time, or any similar successor rule that may be promulgated by the SEC.

(m) The term "Rule 145" shall mean Rule 145 as promulgated by the SEC under the Act, as such Rule may be amended from time to time, or any similar successor rule that may be promulgated by the SEC.

(n) The term "SEC" shall mean the United States Securities and Exchange Commission.

(o) The term "Shares" shall mean the (i) shares of the Company's Preferred Stock, (ii) shares of the Company's Common Stock issued or issuable upon exercise of Stock Purchase Warrants issued pursuant to that certain Convertible Note and Warrant Purchase Agreement dated as of September 7, 2002, as amended (the "First Bridge Loan Agreement"), (iv) shares of the Company's Series B Preferred Stock issued or issuable upon exercise of Stock Purchase Warrants issued pursuant to the First Bridge Loan Agreement and that certain Convertible Note and Warrant Purchase Agreement dated as of July 11, 2003, and (v) shares of the Company's Common Stock issued or issuable upon exercise of Stock Purchase Warrants issued in connection with those certain Convertible Promissory Notes dated as of March 29, 2004.

1.2 Request for Registration.

(a) Subject to the conditions of this Section 1.2, if the Company shall receive at any time after the earlier of (i) three (3) years from the date of this Agreement or (ii) six (6) months after the effective date of the first registration statement for a public offering of securities of the Company (other than a registration statement relating solely to employee benefit or similar plans or a registration statement relating to a Rule 145 transaction), a written request from the Holders of at least thirty percent (30%) of the Registrable Securities then outstanding that the Company effect a registration under the Act with respect to at least thirty percent (30%) of the Registrable Securities then outstanding (or a lesser percent if the anticipated aggregate offering proceeds, net of underwriting discounts and commissions, would exceed $7,500,000), then the Company shall (1) give written notice of such request to all Holders within ten (10) calendar days of the date such request is given and (2) use its best efforts to effect as soon as practicable (and in any event within sixty (60) calendar days of the date such request is given) the registration under the Act of all Registrable Securities that the Holders request to be registered within twenty (20) calendar days of the date the Company's notice referred to in this subsection 1.2(a) is given.

(b) If the Holders initiating the registration request hereunder (the "Initiating Holders") intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to subsection 1.2(a) and the Company shall include such information in the written notice referred to in subsection 1.2(a). The underwriter will be selected by the Company and shall be reasonably acceptable to a majority in interest of the Initiating Holders. In such event, the right of any Holder to include his Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in subsection 1.4(e)) enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting. Notwithstanding any other provision of this Section 1.2, if the underwriter advises the Initiating Holders in writing that marketing factors require a limitation of the number of shares to be underwritten, then the Initiating Holders shall so advise all Holders of Registrable Securities that would otherwise be

underwritten pursuant hereto, and the number of shares of Registrable Securities that may be included in the underwriting shall be allocated among all Holders electing to include shares in the underwriting, including the Initiating Holders, in proportion (as nearly as practicable) to the amount of Registrable Securities requested by each such Holder to be included in such underwriting; provided, however, that the number of shares of Registrable Securities to be included in such underwriting shall not be reduced unless all other securities (including those to be sold for the Company's account) are first entirely excluded from the underwriting.

(c) Notwithstanding the foregoing, if the Company shall furnish to the Holders requesting a registration pursuant to this Section 1.2 a certificate signed by the Company's President stating that, in the good faith judgment of the Board, such registration would be seriously detrimental to the Company and its stockholders and that it is, therefore, essential to defer taking action with respect to such registration, the Company shall have the right to defer taking action with respect to such filing for a period of not more than one hundred twenty (120) calendar days after the date the request of the Initiating Holders is given; provided, however, that the Company may not utilize this right more than once in any twelve (12) month period.

(d) In addition, the Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to this Section 1.2:

(i) after the Company has effected one (1) registration pursuant to Section 1.2(a)(i) above and such registration has been declared or ordered effective;

(ii) after the Company has effected two (2) registrations pursuant to Section 1.2(a)(ii) above and such registrations have been declared or ordered effective;

(iii) during the period starting with the date sixty (60) calendar days prior to the Company's good faith estimate of the date of filing of, and ending on a date six (6) months after the effective date of, any registration statement pertaining to a public offering of securities for the Company's account to which Section 1.3 applies; provided that the Company is actively employing its commercially reasonable efforts to cause such registration statement to be effective;

(iv) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Section 1.12; or

(v) in any particular jurisdiction in which the Company would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance unless the Company is already subject to service in such jurisdiction and except as may be required by the Act.

1.3 Company Registration.

(a) If the Company proposes to register any of its stock or other securities either for its own account or the account of a stockholder or stockholders exercising their

respective demand registration rights (other than (i) pursuant to Section 1.2 or 1.12, (ii) a registration relating solely to employee benefit or similar plans or (iii) a registration relating to a Rule 145 transaction), the Company shall, at such time, promptly give each Holder written notice of such registration. Upon the written request of each Holder given within twenty (20) calendar days of the date such notice is given, the Company shall, subject to the provisions of Section 1.8, include in the registration all of the Registrable Securities that each such Holder has requested to be registered.

(b) If the Company proposes such a registration described in subsection 1.3(a), each Common Holder shall be entitled to include any of his or her shares of Registrable Securities in any such registration only if the Common Holder who chooses to include any of his or her Registrable Securities in such registration continues to serve the Company as an employee or director on the effective date of the registration statement relating to such registration.

1.4 Obligations of the Company. Whenever required under this Section 1 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) Prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its best efforts to cause such registration statement to become effective, and, upon the request of the Holders of at least a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to thirty (30) calendar days or any less period of time in the event the distribution described in the registration statement has been completed;

(b) Prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus used in connection with such registration statement as may be necessary to comply with the provisions of the Act with respect to the disposition of all securities covered by such registration statement;

(c) Furnish to the Holders such numbers of copies of a prospectus, including a preliminary prospectus, in conformity with the requirements of the Act, and such other documents as they may reasonably request in order to facilitate the disposition of Registrable Securities owned by them;

(d) Use its best efforts to register and qualify the securities covered by such registration statement under such other securities or blue sky laws of such jurisdictions as shall be reasonably requested by the Holders; provided that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business or to file a general consent to service of process in any such states or jurisdictions;

(e) In the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the managing underwriter(s) of such offering (each Holder participating in such underwriting shall also enter into and perform its obligations under such an agreement);

(f) Notify each Holder of Registrable Securities covered by such registration statement at any time when a prospectus relating thereto is required to be delivered

under the Act of the happening of any event as a result of which the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing;

(g) Cause all such Registrable Securities registered pursuant hereunder to be listed on each securities exchange or nationally recognized quotation system on which similar securities issued by the Company are then listed;

(h) Provide a transfer agent and registrar for all Registrable Securities registered pursuant hereunder and a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration; and

(i) Use its best efforts to cause to be furnished, at the request of at least a majority of the Holders participating in the registration, on the date that such Registrable Securities are delivered to the underwriters for sale, if such securities are being sold through underwriters, or, if such securities are not being sold through underwriters, on the date that the registration statement with respect to such securities becomes effective, an opinion, dated such date, of the counsel representing the Company for the purposes of such registration, in form and substance as is customarily given to underwriters in an underwritten public offering, addressed to the underwriters, if any, and to the Holders requesting registration of Registrable Securities.

1.5 Furnish Information.

(a) It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 1 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as shall be required by the Company or the managing underwriters, if any, to effect the registration of such Holder's Registrable Securities.

(b) The Company shall have no obligation with respect to any registration requested pursuant to Section 1.2 or Section 1.12 if, due to the operation of subsection 1.5(a), the number of shares or the anticipated aggregate offering price of the Registrable Securities to be included in the registration does not equal or exceed the number of shares or the anticipated aggregate offering price required to originally trigger the Company's obligation to initiate such registration as specified in Section 1.2(a) or Section 1.12(d)(ii), whichever is applicable.

1.6 Expenses of Demand Registration. For a maximum of two (2) registrations pursuant to Section 1.2, all expenses (other than underwriting discounts and commissions) incurred in connection with registrations, filings or qualifications pursuant to Section 1.2, including (without limitation) all registration, filing and qualification fees, printer's fees, accounting fees and fees and disbursements of counsel for the Company (including the reasonable and customary fees and disbursements of one counsel for the selling Holders) shall be borne by the Company up to a maximum of $25,000 per registration; provided, however, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 1.2 if the registration request is subsequently withdrawn at the request of the

Holders of at least a majority of the Registrable Securities to be registered (in which case all participating Holders shall bear such expenses), unless the Holders of at least a majority of the Registrable Securities agree to forfeit their right to one demand registration pursuant to Section 1.2; provided further, however, that, if at the time of such withdrawal, the Holders have learned of a material adverse change in the condition, business, or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness following disclosure by the Company of such material adverse change, then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one demand registration pursuant to Section 1.2.

1.7 Expenses of Company Registration. The Company shall bear and pay all expenses incurred in connection with any registration, filing or qualification of Registrable Securities with respect to the registrations pursuant to Section 1.3 for each Holder, including (without limitation) all registration, filing and qualification fees, printer's fees, accounting fees and fees and disbursements of counsel for the Company (including the reasonable and customary fees and disbursements of one counsel for the selling Holders), but excluding underwriting discounts and commissions relating to Registrable Securities, up to a maximum of $25,000 per registration.

1.8 Underwriting Requirements. In connection with any offering involving an underwriting of shares of the Company's capital stock, the Company shall not be required under Section 1.3 to include any of the Holders' Registrable Securities in such underwriting unless they accept the terms of the underwriting as agreed upon between the Company and the underwriters selected by it (or by other persons entitled to select the underwriters), and then only in such quantity as the underwriters determine, in their sole discretion, will not jeopardize the success of the offering by the Company. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in subsection 1.4(e)) enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting. If the total amount of securities, including Registrable Securities requested by stockholders to be included in such offering, exceeds the amount of securities sold other than by the Company that the underwriters determine in their sole discretion is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, which the underwriters determine in their sole discretion will not jeopardize the success of the offering (the securities so included to be apportioned pro rata among the selling stockholders according to the total amount of Registrable Securities held by each such selling stockholder or in such other proportions as shall mutually be agreed to by such selling stockholders), but in no event shall (i) the amount of securities of the selling Holders included in the offering be reduced unless the securities of all other selling stockholders included in the offering are first reduced, (ii) the amount of securities of the selling Holders who are Investors included in the offering be reduced unless the securities of all the selling Holders who are Common Holders included in the offering are first reduced, (iii) the amount of securities of the selling Holders who are Investors included in the offering be reduced unless the securities of the Common Holders are first reduced, or (iv) the amount of securities of the selling Holders who are Investors included in the offering be reduced below thirty percent (30%) of the total amount of securities included in such offering, unless such offering is the initial public offering of the Company's securities, in which case such Holders may be excluded entirely if the underwriters make the determination described above and if the

securities of all other selling stockholders are excluded entirely. For purposes of the preceding parenthetical concerning apportionment, for any selling stockholder which is a Holder of Registrable Securities and which is a partnership, limited liability company or corporation, the partners (or retired partners), members (or retired members) and stockholders of such selling stockholder, or the estates and family members of any such partners (retired partners), members (or retired members) or stockholders and any trusts for the benefit of any of the foregoing persons shall be deemed to be a single "selling stockholder" and any pro rata reduction with respect to such "selling stockholder" shall be based upon the aggregate amount of shares carrying registration rights owned by all entities and individuals included in such "selling stockholder" as defined in this sentence.

1.9 Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any such registration as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 1.

1.10 Indemnification.

(a) To the extent permitted by law, the Company will indemnify and hold harmless each Holder, any underwriter (as defined in the Act) for such Holder and each person, if any, who controls such Holder or underwriter within the meaning of the Act or the 1934 Act, against any losses, claims, damages, or liabilities (joint or several) to which they may become subject under the Act, the 1934 Act or other federal or state securities law, insofar as such losses, claims, damages, or liabilities (or actions in respect thereof) arise out of or are based upon any of the following statements, omissions or violations (collectively, a "Violation"): (i) any untrue statement or alleged untrue statement of a material fact contained in a registration statement, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto (collectively, the "Filings"), (ii) the omission or alleged omission to state in the Filings a material fact required to be stated therein, or necessary to make the statements therein not misleading, or (iii) any violation or alleged violation by the Company of the Act, the 1934 Act, any state securities law or any rule or regulation promulgated under the Act, the 1934 Act or any state securities law; and the Company will pay to each such Holder, underwriter or controlling person, as incurred, any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability, or action; provided, however, that the indemnity agreement contained in this subsection 1.10(a) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability, or action if such settlement is effected without the consent of the Company (which consent shall not be unreasonably withheld), nor shall the Company be liable in any such case for any such loss, claim, damage, liability, or action to the extent that it arises out of or is based upon a Violation that occurs in reliance upon and in conformity with written information furnished expressly for use in connection with such registration by any such Holder, underwriter or controlling person.

(b) To the extent permitted by law, each selling Holder will indemnify and hold harmless the Company, each of its directors, each of its officers who has signed the registration statement, each person, if any, who controls the Company within the meaning of the Act, any underwriter, any other Holder selling securities in such registration statement and any controlling person of any such underwriter or other Holder, against any losses, claims, damages, or liabilities (joint or several) to which any of the foregoing persons may become subject under

the Act, the 1934 Act or other federal or state securities law insofar as such losses, claims, damages, or liabilities (or actions in respect thereto) arise out of or are based upon any Violation, in each case to the extent (and only to the extent) that such Violation occurs in reliance upon and in conformity with written information furnished by such Holder expressly for use in connection with such registration; and each such Holder will pay, as incurred, any legal or other expenses reasonably incurred by any person intended to be indemnified pursuant to this subsection 1.10(b) in connection with investigating or defending any such loss, claim, damage, liability, or action; provided, however, that the indemnity agreement contained in this subsection 1.10(b) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; provided, that, in no event shall any indemnity under this subsection 1.10(b) exceed the net proceeds from the offering received by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 1.10 of notice of the commencement of any action (including any governmental action), such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 1.10, deliver to the indemnifying party a written notice of the commencement thereof and the indemnifying party shall have the right to participate in, and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such proceeding. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action, if materially prejudicial to its ability to defend such action, shall relieve such indemnifying party of any liability to the indemnified party under this Section 1.10, but the omission so to deliver written notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 1.10.

(d) If the indemnification provided for in this Section 1.10 is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any loss, claim, damage or expense referred to therein, then the indemnifying party, in lieu of indemnifying such indemnified party hereunder, shall contribute to the amount paid or payable by such indemnified party as a result of such loss, claim, damage or expense in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and of the indemnified party on the other in connection with the statements or omissions that resulted in such loss, liability, claim or expense as well as any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission. In no event shall any Holder be required to contribute an amount in excess of the net proceeds from the offering received by such Holder.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with an underwritten public offering are in conflict with the foregoing provisions, the provisions of the underwriting agreement shall control.

(f) The obligations of the Company and Holders under this Section 1.10 shall survive the completion of any offering of Registrable Securities in a registration statement under this Section 1, and otherwise.

1.11 Reports Under Securities Exchange Act of 1934. With a view to making available the benefits of certain rules and regulations of the SEC, including Rule 144, that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company agrees to:

(a) make and keep public information available, as those terms are understood and defined in Rule 144, at all times after ninety (90) days after the effective date of the first registration statement filed by the Company for the offering of its securities to the general public;

(b) take such action, including the voluntary registration of its Common Stock under Section 12 of the 1934 Act, as is necessary to enable the Holders to utilize Form S-3 for the sale of their Registrable Securities, such action to be taken as soon as practicable after the end of the fiscal year in which the first registration statement filed by the Company for the offering of its securities to the general public is declared effective;

(c) file with the SEC in a timely manner all reports and other documents required of the Company under the Act and the 1934 Act; and

(d) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) a written statement by the Company that it has complied with the reporting requirements of Rule 144 (at any time after ninety (90) calendar days after the effective date of the first registration statement filed by the Company), the Act and the 1934 Act (at any time after it has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after it so qualifies), (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company, and (iii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration or pursuant to such form.

1.12 Form S-3 Registration.

(a) Subject to the conditions of this Section 1.12, if the Company shall receive from at least thirty percent (30%) of the Holders of the Registrable Securities then outstanding a written request that the Company effect a registration on Form S-3 and any related qualification or compliance with respect to all or a part of the Registrable Securities owned by such Holder(s), then the Company shall (a) promptly give written notice of the proposed registration, and any related qualification or compliance, to all other Holders and (b) use its best efforts to effect, as soon as practicable, such registration and all such qualifications and

compliances as may be so requested and as would permit or facilitate the sale and distribution of all or such portion of the Registrable Securities specified in such request, together with all or such portion of the Registrable Securities of any other Holder joining in such request as are specified in a written request given within fifteen (15) calendar days of the date the Company's notice referred to in clause (a) of this sentence is given.

(b) If the Holders requesting registration pursuant to this Section 1.12 intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as part of their request made pursuant to this Section 1.12 and the Company shall include such information in the written notice referred to in clause (a) of Section 1.12(a). The underwriter will be selected by the Company and shall be reasonably acceptable to a majority in interest of the Holders requesting registration. In such event, the right of any Holder to include his Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Section 1.4(e)) enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting. Notwithstanding any other provision of this Section 1.12, if the underwriter advises the Holders requesting registration in writing that marketing factors require a limitation of the number of shares to be underwritten, then the Holders requesting registration shall so advise all Holders of Registrable Securities that would otherwise be underwritten pursuant hereto, and the number of shares of Registrable Securities that may be included in the underwriting shall be allocated among all Holders electing to include shares in the underwriting, including the Holders requesting registration, in proportion (as nearly as practicable) to the amount of Registrable Securities requested by each such Holder to be included in such underwriting.

(c) Notwithstanding the foregoing, if the Company shall furnish to the Holder(s) requesting a registration pursuant to this Section 1.12 a certificate signed by the Company's President stating that, in the good faith judgment of the Board, such registration would be seriously detrimental to the Company and its stockholders and that it is, therefore, essential to defer taking action with respect to such registration, the Company shall have the right to defer taking action with respect to such filing for a period of not more than one hundred twenty (120) calendar days after the date the request of the Holder(s) requesting a registration pursuant to this Section 1.12 is given; provided, however, that the Company shall not utilize this right more than once in any twelve (12) month period.

(d) In addition, the Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to this Section 1.12:

(i) if Form S-3 is not available for such offering by the Holders;

(ii) if the Holders, together with the holders of any other securities of the Company entitled to inclusion in such registration, propose to sell Registrable Securities and such other securities (if any) at an aggregate price to the public (net of any underwriters' discounts or commissions) of less than $1,000,000;

(iii) if the Company has, within the twelve (12) month period preceding the date of such request, already effected one (1) registration on Form S-3 for the Holders pursuant to this Section 1.12;

(iv) during the period starting with the date sixty (60) calendar days prior to the Company's good faith estimate of the date of filing of, and ending on a date one hundred eighty (180) calendar days after the effective date of, any registration statement pertaining to a public offering of securities for the Company's account to which Section 1.3 applies; provided that the Company is actively employing its best efforts to cause such registration statement to be effective; or

(v) in any particular jurisdiction in which the Company would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance unless the Company is already subject to service in such jurisdiction and except as may be required by the Act.

(e) For a maximum of five (5) registrations pursuant to this Section 1.12, all expenses incurred in connection with a registration requested pursuant to this Section 1.12 (other than underwriting discounts and commissions but including the reasonable and customary fees and disbursements of one counsel for the Holders), including (without limitation) all registration, filing, and qualification fees, printer's fees, accounting fees and fees and disbursements of counsel for the Company, shall be borne by the Company; provided, however, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to this Section 1.12 if the registration request is subsequently withdrawn at the request of the Holders of at least a majority of the Registrable Securities to be registered (in which case all participating Holders shall bear such expenses), unless the Holders of at least a majority of the Registrable Securities agree to forfeit their right to one (1) registration pursuant to this Section 1.12; provided further, however, that if, at the time of such withdrawal, the Holders have learned of a material adverse change in the condition, business or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness following disclosure by the Company of such material adverse change, then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one (1) registration pursuant to Section 1.12. Registrations effected pursuant to this Section 1.12 shall not be counted as demands for registration or registrations effected pursuant to Section 1.2 or 1.3, respectively.

1.13 Transfer or Assignment of Registration Rights. The rights to cause the Company to register Registrable Securities pursuant to this Section 1 may be transferred or assigned, but only with all related obligations, by a Holder to a transferee or assignee who acquires from such Holder at least 500,000 shares (subject to appropriate adjustment for stock splits, stock dividends, combinations and other recapitalizations) of Registrable Securities or all of the Registrable Securities held by such transferring Holder; provided that (i) prior to such transfer or assignment, the Company is furnished with written notice stating the name and address of such transferee or assignee and identifying the securities with respect to which such registration rights are being transferred or assigned, (ii) such transferee or assignee agrees in writing to be bound by and subject to the terms and conditions of this Agreement, including, without limitation, the provisions of Section 1.15 and (iii) such transfer or assignment shall be

effective only if immediately following such transfer or assignment the further disposition of such securities by the transferee or assignee is restricted under the Act. Notwithstanding the foregoing, (i) the rights to cause the Company to register Registrable Securities pursuant to this Section 1 may not be assigned by a Common Holder and (ii) assignments may be made without obtaining the minimum number of shares of Registrable Securities noted above if the assignment is to a partner, affiliate, member, stockholder, parent, child or spouse of the Holder or to the Holder's estate.

1.14 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of at least a majority of the Registrable Securities then outstanding, enter into any agreement with any holder or prospective holder of any securities of the Company which would allow such holder or prospective holder (a) to include such securities in any registration upon terms that are more favorable to such holder or prospective holder than the terms on which the Holders may include shares in such registration or (b) to make a demand registration that could result in such registration statement being declared effective prior to the dates set forth in Section 1.2(a) or within one hundred twenty (120) calendar days of the effective date of any registration effected pursuant to Section 1.2.

1.15 "Market Stand-Off" Agreement. Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the Company's initial public offering or first secondary public offering, as applicable, and ending on the date specified by the Company and the managing underwriter (such period not to initially exceed one hundred eighty (l80) calendar days and as may be extended for up to two additional 17 day periods) (the "Lock-Up Period") (i) lend, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any securities of the Company, including (without limitation) shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock (whether now owned or hereafter acquired) or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of any securities of the Company, including (without limitation) shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock (whether now owned or hereafter acquired), whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of securities, in cash or otherwise, provided that all officers and directors of the Company and holders of at least one percent (1%) of the Company's voting securities are bound by and have entered into similar agreements. The foregoing covenants shall apply to the Company's initial public offering of equity securities and to the Company's first secondary public offering of equity securities, but it shall not apply to the sale of any shares by a Holder to an underwriter pursuant to an underwriting agreement. Each Holder agrees to execute an agreement(s) reflecting (i) and (ii) above as may be requested by the managing underwriters at the time of the initial public offering, and further agrees that the Company may impose stop transfer instructions with its transfer agent in order to enforce the covenants in (i) and (ii) above. The underwriters in connection with the Company's initial public offering are intended third party beneficiaries of the covenants in this Section 1.15 and shall have the right, power and authority to enforce such covenants as though they were a party hereto. Any release from the Lock-Up Period shall be on a pro rata basis based upon the number of

Registrable Securities held; *provided, however*, that one or more selective releases from the Lock-Up Period not on a pro rata basis may be made with the written consent of the Holders of a majority of the Registrable Securities not so released.

1.16 Termination of Registration Rights. No Holder shall be entitled to exercise any right provided for in this Section 1 after the earlier of (i) four (4) years following the consummation of the sale of securities pursuant to a registration statement filed by the Company under the Act in connection with the initial firm commitment underwritten offering of its securities to the general public in which the public offering price (prior to underwriter's discounts or commissions and offering expenses) exceeds $2.10 per share for the Preferred Stock (subject to adjustment for stock splits, stock dividends, recapitalizations and similar events) and the aggregate gross proceeds raised exceeds $30,000,000 ("Qualified IPO") or (ii) as to any Holder, such time at which all Registrable Securities held by such Holder can be sold in any three-month period without registration in compliance with Rule 144.

2. Covenants of the Company to the Investors.

2.1 Information Rights. The Company shall deliver to each Investor who continues to hold at least five percent (5%) of the Company's Preferred Stock (subject to appropriate adjustment for stock splits, stock dividends, combinations and other recapitalizations):

(a) as soon as practicable, but in any event within one hundred twenty (120) calendar days after the end of each fiscal year of the Company, or such longer period as may be approved by the Board, consolidated balance sheets of the Company and its subsidiaries, if any, as of the end of such fiscal year, and consolidated statements of income and consolidated statements of cash flows of the Company and its subsidiaries, if any, for such year, prepared in accordance with generally accepted accounting principles ("GAAP"), all in reasonable detail and audited by independent public accountants of national standing selected by the Company;

(b) as soon as practicable, but in any event within forty-five (45) calendar days after the end of each of the first three (3) quarters of each fiscal year of the Company, consolidated balance sheets of the Company and its subsidiaries, if any, as of the end of such quarter, and consolidated statements of income and consolidated statements of cash flows of the Company and its subsidiaries, if any, for such quarter, prepared in accordance with GAAP, all in reasonable detail and a comparison of the quarter's results with those projected by the Company's business plan;

(c) as soon as practicable, but in any event within thirty (30) calendar days after the end of each month, consolidated balance sheets of the Company and its subsidiaries, if any, as of the end of each such month, and consolidated statements of income and consolidated statements of cash flows of the Company and its subsidiaries, if any, for each such month, that fairly present the financial condition of the Company in all material respects (which monthly financial statements may or may not be prepared in accordance with GAAP);

(d) as soon as practicable, but in any event thirty (30) calendar days prior to the end of each fiscal year, a budget for the next fiscal year, prepared on a monthly basis,

including balance sheets and income statements for such months and, as soon as prepared, any other budgets or revised budgets prepared by the Company; and

(e) as soon as practicable, but in any event fifteen (15) calendar days prior to the end of each fiscal year, a business plan (including head count projections, sales projections and financial statement projections) for the next four (4) fiscal quarters.

2.2 Visitation and Inspection. The Company shall permit each Investor who continues to hold at least five percent (5%) of the Company's Preferred Stock (subject to appropriate adjustment for stock splits, stock dividends, combinations and other recapitalizations), at such Investor's expense, to visit and inspect the Company's properties, to examine its books of account and records and to discuss the Company's affairs, finances and accounts with its officers, all at such reasonable times as may be requested by the Investor; provided, however, that the Company shall not be obligated pursuant to this Section 2.2 to provide access to any information that it reasonably considers in good faith to be a trade secret or similar confidential information unless the Investor agrees to sign a confidentiality agreement containing customary terms. The provisions of this Section 2.2 shall not be in limitation of any rights which any Investor may have with respect to the books and records of the Company and its subsidiaries, or to inspect their properties or discuss their affairs, finances and accounts, under the laws of the State of Delaware.

2.3 Right of First Offer. Subject to the terms and conditions specified in this Section 2.3, the Company hereby grants to each Investor who continues to hold at lease five percent (5%) of the Company's Preferred Stock (subject to appropriate adjustment for stock splits, stock dividends, combinations and other recapitalizations), a right of first offer to purchase its Pro Rata Share (as hereinafter defined for the purpose of this Section 2.3) (in whole or in part) with respect to future sales by the Company of its Future Shares (as hereinafter defined). For purposes of this Section 2.3, an Investor's "Pro Rata Share" of Future Shares shall be a fraction, the numerator of which is the number of shares of Common Stock issued and held, or issuable upon conversion of the Preferred Stock then held, by such Investor and the denominator of which is the total number of shares of the Company's Common Stock then outstanding (assuming full conversion and exercise of all convertible or exercisable securities then outstanding). Each time the Company proposes to offer any shares of, or securities convertible into or exercisable for any shares of, any class of its capital stock ("Future Shares"), the Company shall first make an offering of such Future Shares to each Investor in accordance with the following provisions:

(a) The Company shall deliver a notice ("Notice") to each of the Investors stating (i) its bona fide intention to offer such Future Shares, (ii) the number of such Future Shares to be offered, and (iii) the price and a summary of the terms, if any, upon which it proposes to offer such Future Shares.

(b) Each Investor may elect to purchase or obtain, at the price and on the terms specified in the Notice, up to its Pro Rata Share of such Future Shares and to indicate whether such Investor desires to exercise its over-allotment option by notifying the Company in writing in substantially the form attached hereto as Schedule C within fifteen (15) calendar days from the date the Notice is given by the Company, and thereafter, each Investor shall purchase its Pro Rata Share of such Future Shares and any additional shares in connection with the exercise

of its over-allotment option, if applicable, within thirty (30) calendar days from the date the Notice is given.

(c) To the extent that Future Shares are not obtained by the Investors and over-allotment rights are not exercised, if any, as provided in subsection (b) above, the Company may, during the ninety (90) calendar days following the expiration of the period provided in subsection (b) above, offer the remaining unsubscribed portion of such Future Shares to any person or persons at a price not less than, and upon terms no more favorable to the offeree than, those specified in the Notice. If the Company does not enter into an agreement for the sale of the Future Shares within such period, or if such agreement is not consummated within thirty (30) calendar days of the execution thereof, the right provided in this Section 2.3 shall be deemed to be revived and such Future Shares shall not be offered unless first reoffered to the Investors in accordance herewith.

(d) The right of first offer in this Section 2.3 shall not be applicable to "Additional Shares" (as such term is defined in the Company's then current Certificate of Incorporation).

2.4 Other Covenants.

(a) Proprietary Information and Inventions Assignment Agreement. The Company will cause each person now or hereafter employed by it or any subsidiary with access to confidential information to enter into a proprietary information and inventions assignment agreement in the form approved by the Company's counsel and acceptable to the Investors.

(b) Board of Directors. The Board shall meet at least quarterly, unless the Board, including at least one of the directors nominated by the holders of the Preferred Stock, agrees to meet less frequently. The Company shall promptly reimburse in full each director of the Company who is not an employee of the Company for all of his or her reasonable out-of-pocket expenses incurred in attending each meeting of the Board or any committee thereof, or otherwise incurred in the course of performing his or her duties as a director of the Company.

(c) Employee and Other Stock Arrangements. Each acquisition of any shares of the Company's capital stock or any option or right to acquire any shares of the Company's capital stock by an employee or officer of the Company will be conditioned upon the execution and delivery by the Company and such employee or officer of an agreement substantially in the form approved by the Board. Unless otherwise determined by the Board, including a majority of those directors elected by the holders of Preferred Stock, any such option or right to acquire shares of the Company's capital stock shall vest at the rate of one-fourth ( 1/4th) of the shares granted after one year from the date of grant or the commencement of employment or service to the Company and one forty-eighth (1/48th) of the total number of shares granted monthly thereafter. Unless otherwise determined by the Board, any stock sold shall be subject to the Company's right to repurchase such stock at its original purchase price and such stock shall vest on the same schedule as set forth in the preceding sentence.

2.5 Confidentiality, Assignment and Termination of Covenants.

(a) Confidentiality. Each Investor receiving information under the covenants set forth in Sections 2.1 and 2.2 hereby agrees to hold in confidence all information so provided; provided, however, that notwithstanding the foregoing, the Investors may include summary financial information concerning the Company and general statements concerning the nature and progress of the Company's business in their reports to their limited partners.

(b) Assignment. The covenants set forth in Sections 2.1, 2.2 and 2.3 may be assigned or transferred, but only with all related obligations, by an Investor to an assignee or transferee who acquires such number of shares of Conversion Stock (subject to appropriate adjustment for stock splits, stock dividends, combinations and other recapitalizations) which would be convertible from at least five percent (5%) of the Company's Preferred Stock from such transferring Investor.

(c) Termination. The covenants set forth in Sections 2.1, 2.2, 2.3 and 2.4 shall terminate as to all Investors and be of no further force or effect upon the earlier to occur of (i) the closing of the Company's initial underwritten public offering of its securities to the general public pursuant to an effective registration statement filed by the Company under the Act or (ii) the closing of the acquisition of the Company by another entity by means of any transaction or series of related transactions (including, without limitation, any merger, consolidation or other form of reorganization) in which outstanding shares of the Company are exchanged for or converted into securities or other consideration issued, or caused to be issued, by the acquiring entity or its affiliate, but excluding any transaction effected primarily for the purpose of changing the Company's state of incorporation, and the covenants set forth in Sections 2.1 and 2.2 shall terminate as to all Investors and be of no further force or effect upon the date upon which the Company first becomes subject to the periodic reporting requirements of Sections 12(g) or 15(d) of the 1934 Act.

3. Legend. Each certificate representing the shares of Common Stock and/or Preferred Stock held by the Investors and by the Common Holders shall be endorsed with the following legend (the "Legend"):

> "THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO THE TERMS AND CONDITIONS, INCLUDING A 180-DAY MARKET STANDOFF RESTRICTION, OF A CERTAIN INVESTORS' RIGHTS AGREEMENT BETWEEN THE CORPORATION AND THE ORIGINAL HOLDER OF THESE SHARES. A COPY OF SUCH AGREEMENT MAY BE OBTAINED UPON WRITTEN REQUEST TO THE CORPORATION."

The Company agrees that, during the term of this Agreement, it will not remove, and will not permit to be removed (upon registration of transfer, reissuance or otherwise), the Legend from any such certificate and will place or cause to be placed the Legend on any new certificate theretofore represented by a certificate carrying the Legend.

4. Miscellaneous

4.1 Governing Law. THIS AGREEMENT SHALL BE GOVERNED IN ALL RESPECTS BY THE LAWS OF THE STATE OF CALIFORNIA AS SUCH LAWS ARE APPLIED TO AGREEMENTS BETWEEN CALIFORNIA RESIDENTS ENTERED INTO AND TO BE PERFORMED ENTIRELY WITHIN CALIFORNIA, WITHOUT REGARD TO CONFLICT OF LAWS RULES.

4.2 Waivers and Amendments. This Agreement may be terminated and any term of this Agreement may be amended or waived (either generally or in a particular instance and either retroactively or prospectively) with the written consent of the Company and Investors holding at least two-thirds (2/3) of the Registrable Securities then outstanding (excluding any Registrable Securities held by the Common Holders); *provided, however*, that in the event such termination, amendment or waiver adversely affects the rights or obligations of the Common Holders under Section 1 in a different manner than all of the Investors, such termination, amendment or waiver shall also require the written consent of the holders of at least a majority of the Common Stock then held by the Common Holders then employed by or serving as a director to the Company. No such amendment or waiver shall reduce the aforesaid percentage of the Registrable Securities, the holders of which are required to consent to any termination, amendment or waiver without the consent of the record holders of all of the Registrable Securities. Any termination, amendment or waiver effected in accordance with this Section 4.2 shall be binding upon each holder of Registrable Securities then outstanding, each future holder of all such Registrable Securities and the Company. Upon a Subsequent Closing with an investor as provided for in the Purchase Agreement, such investor shall become a party to this Agreement as an "Investor" upon the Company's receipt from such investor of an executed counterpart signature page to this Agreement and no further consent from the holders of the Registrable Securities shall be required.

4.3 Successors and Assigns. Except as otherwise expressly provided herein, the provisions of this Agreement shall inure to the benefit of, and be binding upon, the successors, assigns, heirs, executors and administrators of the parties hereto.

4.4 Entire Agreement. This Agreement constitutes the full and entire understanding and agreement among the parties with regard to the subject matter hereof, and no party shall be liable or bound to any other party in any manner by any warranties, representations or covenants except as specifically set forth herein.

4.5 Termination of Prior Agreement. Pursuant to Section 4.2 of the Prior Agreement, the Majority Investors hereby agree to terminate the Prior Agreement on behalf of all Holders under the Prior Agreement and replace the Prior Agreement on behalf of all such Holders with this Agreement, and any such Holder who does not sign this Agreement shall be bound by the terms and conditions of this Agreement pursuant to Section 4.2 of the Prior Agreement as if such a Holder had signed this Agreement.

4.6 Notices. All notices and other communications required or permitted under this Agreement shall be in writing and shall be delivered personally by hand or by courier or sent by recognized express courier (a) if to an Investor, at such Investor's address set forth on

Schedule A, or at such other address as such Investor may designate by ten (10) days' advance written notice to the other parties hereto, (b) if to a Common Holder at such Common Holder's address set forth on the signature page to this Agreement, or at such other address as such Common Holder may designate by ten (10) days' advance written notice to other parties hereto or (c) if to the Company, to its address set forth on its signature page to this Agreement and directed to the attention of the President, or at such other address as the Company may designate by ten (10) days' advance written notice to other parties hereto. All such notices and other communications shall be deemed given upon personal delivery or one business day (five business days for international) after delivery to the express courier, properly addressed and fees prepaid.

4.7 Interpretation. The words "include," "includes" and "including" when used herein shall be deemed in each case to be followed by the words "without limitation." The titles and subtitles used in this Agreement are used for convenience only and are not considered in construing or interpreting this Agreement.

4.8 Severability. If one or more provisions of this Agreement are held to be unenforceable under applicable law, such provisions shall be excluded from this Agreement, and the balance of the Agreement shall be interpreted as if such provisions were so excluded, and shall be enforceable in accordance with its terms.

4.9 Aggregation of Stock. All shares of Registrable Securities held or acquired by a Holder and its affiliated entities shall be aggregated together for the purpose of determining the availability of any rights under Section 1. For purposes of the foregoing, any shares of Registrable Securities held by a Holder that (X) is a partnership, limited liability company or corporation shall be deemed to include shares held by (i) entities affiliated with such partnership, limited liability company or corporation, (ii) any partner (or retired partner), member (or retired member) or stockholder of such partnership, limited liability company or corporation, (iii) the spouse, siblings, lineal descendants or ancestors of any such partner (or retired partner), member (or retired member) or stockholder, (iv) the estate of any such partner (or retired partner), member (or retired member) or stockholder and (v) any custodian or trustee for the benefit of any such partner (or retired partner), member (or retired member) or stockholder or the spouse, siblings, lineal descendants or ancestors of any such partner (or retired partner), member (or retired member) or stockholder and (Y) is an individual shall be deemed to include shares held by (i) the estate of such individual or (ii) the spouse, siblings, lineal descendants or ancestors of such individual and any custodian or trustee for the benefit of any of the foregoing persons.

4.10 Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument.

4.11 Telecopy Execution and Delivery. A facsimile, telecopy or other reproduction of this Agreement may be executed by one or more parties hereto, and an executed copy of this Agreement may be delivered by one or more parties hereto by facsimile or similar electronic transmission device pursuant to which the signature of or on behalf of such party can be seen, and such execution and delivery shall be considered valid, binding and effective for all

purposes. At the request of any party hereto, all parties hereto agree to execute an original of this Agreement as well as any facsimile, telecopy or other reproduction hereof.

***<signature page follows>***

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement on the day, month and year first set forth above.

**"Company"**

Capnia, Inc.

By: /s/ Ernest Mario
Ernest Mario,
President and Chief Executive Officer

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement on the day, month and year first set forth above.

**"Common Holder"**

/s/ Ernest Mario
Ernest Mario

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**BIOTECHNOLOGY DEVELOPMENT FUND, IV, L.P.**, a Delaware limited partnership

By: BioAsia Investments IV, LLC, its General Partner

/s/ Edger G. Engleman
(Signature of individual investor or individual signing for entity)

Edger G. Engleman
(Please print name of investor)

Managing Member
(If signing on behalf of an entity, print your title)

**BIOTECHNOLOGY DEVELOPMENT FUND IV AFFILIATES, L.P.**, a Delaware limited partnership

By: BioAsia Investments IV, LLC, its General Partner

/s/ Edger G. Engleman
(Signature of individual investor or individual signing for entity)

Edger G. Engleman
(Please print name of investor)

Managing Member
(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**BDF IV ANNEX FUND, LP**, a Delaware limited partnership

By: BioAsia Investments IV, LLC, its General Partner

/s/ Edger G. Engleman
(Signature of individual investor or individual signing for entity)

Edger G. Engleman
(Please print name of investor)

Managing Member
(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**VIVO VENTURES FUND V, L.P.**, a Delaware limited partnership

By: Vivo Ventures V, LLC, its General Partner

/s/ Edger G. Engleman
(Signature of individual investor or individual signing for entity)

Edger G. Engleman
(Please print name of investor)

Managing Member
(If signing on behalf of an entity, print your title)

**VIVO VENTURES FUND AFFILIATES V, L.P.**, a Delaware limited partnership

By: Vivo Ventures V, LLC, its General Partner

/s/ Edger G. Engleman
(Signature of individual investor or individual signing for entity)

Edger G. Engleman
(Please print name of investor)

Managing Member
(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**TEKNOINVEST VIII KS**

/s/ Bjorn Bjora
(Signature of individual investor or individual signing for entity)

Bjorn Bjora
(Please print name of investor)

General Manager
(If signing on behalf of an entity, print your title)

**TEKNOINVEST VIII B (GP) AS**

/s/ Bjorn Bjora
(Signature of individual investor or individual signing for entity)

Bjorn Bjora
(Please print name of investor)

General Manager
(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**JOHN MACK,** an individual

/s/ John Mack
(Signature)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**ERNEST MARIO,** an individual

/s/ Ernest Mario
(Signature)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**ASSET MANAGEMENT PARTNERS**

/s/ Franklin P. Johnson, Jr.
(Signature of individual investor or individual signing for entity)

(Please print name of investor)

(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**A. MORRIS WILLIAMS, JR.**, an individual

/s/ A. Morris Williams, Jr.
(Signature)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**ROBERT K. STEEL**, an individual

/s/ Robert K. Steel
(Signature)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**TRIREMES 16 LLC**

/s/ Anastasios Parafestas
(Signature of individual investor or individual signing for entity)

Anastasios Parafestas
(Please print name of investor)

Manager of Spinnaker Capital 2007 GP LLC, its Managing Member
(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**SHALAVI IRREVOCABLE TRUST UAD 12/16/99 FBO ALEXANDER SHALAVI**

/s/ John Shalavi
(Signature of individual investor or individual signing for entity)

John Shalavi
(Please print name of investor)

Trustee
(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**SHALAVI IRREVOCABLE TRUST UAD 12/16/99 FBO GINA SHALAVI**

/s/ John Shalavi
(Signature of individual investor or individual signing for entity)

John Shalavi
(Please print name of investor)

Trustee
(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**CLYDE D. WAGNER LIVING TRUST**
**DATED JUNE 6, 2001**

/s/ CLYDE D. WAGNER
(Signature of individual investor or individual signing for entity)

CLYDE D. WAGNER
(Please print name of investor)

Trustee
(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**SHIFTEH KARIMI WAGNER LIVING TRUST DATED JUNE 6, 2001**

/s/ Shifteh K Wagner
(Signature of individual investor or individual signing for entity)

Shifteh K Wagner
(Please print name of investor)

Trustee
(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**RON HAAK,** an individual

/s/ Ron Haak
(Signature)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**WS INVESTMENT COMPANY, LLC (2008A)**

/s/ Michael Danaher
(Signature of individual investor or individual signing for entity)

(Please print name of investor)

(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**WS INVESTMENT COMPANY, LLC (2008D)**

/s/ Michael Danaher
(Signature of individual investor or individual signing for entity)

(Please print name of investor)

(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**JAMES R. BUTLER LIVING TRUST**

/s/ James R. Butler
(Signature of individual investor or individual signing for entity)

James Butler
(Please print name of investor)

(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**SHEILA C. BUTLER LIVING TRUST**

/s/ Sheila C. Butler
(Signature of individual investor or individual signing for entity)

Sheila C. Butler
(Please print name of investor)

(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**GRAHAM K. CROOKE**, an individual

/s/ Graham Crooke
(Signature)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**FRANKLIN P. JOHNSON, JR.**, an individual

/s/ Bennett S. Dubin, attorney in fact
(Signature)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**BENNETT S. DUBIN**, an individual

/s/ Bennett Dubin
(Signature)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**HADAR CARS AB**

/s/ Hadar Cars
(Signature of individual investor or individual signing for entity)

Hadar Cars
(Please print name of investor)

Chairman
(If signing on behalf of an entity, print your title)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**MARTIN KATZ**, an individual

/s/ Martin Katz
(Signature of individual investor or individual signing for entity)

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first set forth above.

**STEINAR J. ENGELSEN**, an individual

/s/ Steinar J. Engelsen
(Signature of individual investor or individual signing for entity)

**SCHEDULE A**

Schedule of Investors

(intentionally omitted)

**SCHEDULE B**

**Schedule of Common Holders**

(intentionally omitted)

**SCHEDULE C**

**NOTICE AND WAIVER/ELECTION OF RIGHT OF FIRST REFUSAL**

**I do hereby waive or exercise, as indicated below, my rights of first refusal under the Amended and Restated Investors Rights Agreement dated as of _____ (the "Agreement"):**

Waiver of 15 Days' Notice Period in Which to Exercise Right of First Offer: **(please check only one)**

( ) WAIVE in full, on behalf of all Holders, the 15-day notice period provided to exercise my right of first refusal granted under the Agreement.

( ) DO NOT WAIVE the notice period described above.

Issuance and Sale of Future Shares: **(please check only one)**

( ) WAIVE in full the right of first refusal granted under the Agreement with respect to the issuance of the Future Shares.

( ) ELECT TO PARTICIPATE in $_____ [PLEASE PROVIDE AMOUNT] in Future Shares proposed to be issued by the Company, representing less than my pro rata portion of the aggregate of [$_____] in Future Shares being offered in the financing.

( ) ELECT TO PARTICIPATE in $_____ in Future Shares proposed to be issued by the Company, representing my full pro rata portion of the aggregate of $_____ in Future Shares being offered in the financing.

( ) ELECT TO PARTICIPATE in my full pro rata portion of the aggregate of $_____ in Future Shares being made available in the financing and, to the extent available, the greater of (x) an additional $_____ [PLEASE PROVIDE AMOUNT] or (y) my pro rata portion of any remaining investment amount available in the event other _____ do not exercise their full rights of first refusal with respect to the $ in Future Shares being offered in the financing.

Date: _____, 20_____

_____

Signature of Stockholder or Authorized Signatory

_____

Title, if applicable

***This is neither a commitment to purchase nor a commitment to issue the Future Shares described above. Such issuance can only be made by way of definitive documentation related to such issuance. The Company will supply you with such definitive documentation upon request or if you indicate that you would like to exercise your first offer rights in whole or in part.***

**Exhibit 10.4**

**CAPNIA, INC.**

**2014 EQUITY INCENTIVE PLAN**

1. Purposes of the Plan. The purposes of this Plan are:

- to attract and retain the best available personnel for positions of substantial responsibility,
- to provide additional incentive to Employees, Directors and Consultants, and
- to promote the success of the Company's business.

The Plan permits the grant of Incentive Stock Options, Nonstatutory Stock Options, Restricted Stock, Restricted Stock Units, Stock Appreciation Rights, Performance Units and Performance Shares.

2. Definitions. As used herein, the following definitions will apply:

(a) "Administrator" means the Board or any of its Committees as will be administering the Plan, in accordance with Section 4 of the Plan.

(b) "Applicable Laws" means the requirements relating to the administration of equity-based awards under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any foreign country or jurisdiction where Awards are, or will be, granted under the Plan.

(c) "Award" means, individually or collectively, a grant under the Plan of Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Performance Units or Performance Shares.

(d) "Award Agreement" means the written or electronic agreement setting forth the terms and provisions applicable to each Award granted under the Plan. The Award Agreement is subject to the terms and conditions of the Plan.

(e) "Board" means the Board of Directors of the Company.

(f) "Change in Control" means the occurrence of any of the following events:

(i) A change in the ownership of the Company which occurs on the date that any one person, or more than one person acting as a group ("Person"), acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than fifty percent (50%) of the total voting power of the stock of the Company; provided, however, that for purposes of this subsection, the acquisition of additional stock by any

one Person, who is considered to own more than fifty percent (50%) of the total voting power of the stock of the Company will not be considered a Change in Control; or

(ii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board is replaced during any twelve (12) month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this clause (ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control; or

(iii) A change in the ownership of a substantial portion of the Company's assets which occurs on the date that any Person acquires (or has acquired during the twelve (12) month period ending on the date of the most recent acquisition by such person or persons) assets from the Company that have a total gross fair market value equal to or more than fifty percent (50%) of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection (iii), the following will not constitute a change in the ownership of a substantial portion of the Company's assets: (A) a transfer to an entity that is controlled by the Company's stockholders immediately after the transfer, or (B) a transfer of assets by the Company to: (1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's stock, (2) an entity, fifty percent (50%) or more of the total value or voting power of which is owned, directly or indirectly, by the Company, (3) a Person, that owns, directly or indirectly, fifty percent (50%) or more of the total value or voting power of all the outstanding stock of the Company, or (4) an entity, at least fifty percent (50%) of the total value or voting power of which is owned, directly or indirectly, by a Person described in this subsection (iii)(B)(3). For purposes of this subsection (iii), gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition, persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company.

Notwithstanding the foregoing, a transaction will not be deemed a Change in Control unless the transaction qualifies as a change in control event within the meaning of Code Section 409A, as it has been and may be amended from time to time, and any proposed or final Treasury Regulations and Internal Revenue Service guidance that has been promulgated or may be promulgated thereunder from time to time.

Further and for the avoidance of doubt, a transaction will not constitute a Change in Control if: (i) its sole purpose is to change the state of the Company's incorporation, or (ii) its sole purpose is to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transaction.

(g) "Code" means the Internal Revenue Code of 1986, as amended. Reference to a specific section of the Code or regulation thereunder will include such section or

regulation, any valid regulation promulgated under such section, and any comparable provision of any future legislation or regulation amending, supplementing or superseding such section or regulation.

(h) "Committee" means a committee of Directors or of other individuals satisfying Applicable Laws appointed by the Board, or a duly authorized committee of the Board, in accordance with Section 4 hereof.

(i) "Common Stock" means the common stock of the Company.

(j) "Company" means Capnia, Inc., a Delaware corporation, or any successor thereto.

(k) "Consultant" means any natural person, including an advisor, engaged by the Company or a Parent or Subsidiary to render bona fide services to such entity, provided the services (i) are not in connection with the offer or sale of securities in a capital-raising transaction, and (ii) do not directly promote or maintain a market for the Company's securities, in each case, within the meaning of Form S-8 promulgated under the Securities Act, and provided, further, that a Consultant will include only those persons to whom the issuance of Shares may be registered under Form S-8 promulgated under the Securities Act.

(l) "Director" means a member of the Board.

(m) "Disability" means total and permanent disability as defined in Section 22(e)(3) of the Code, provided that in the case of Awards other than Incentive Stock Options, the Administrator in its discretion may determine whether a permanent and total disability exists in accordance with uniform and non-discriminatory standards adopted by the Administrator from time to time.

(n) "Employee" means any person, including Officers and Directors, employed by the Company or any Parent or Subsidiary of the Company. Neither service as a Director nor payment of a director's fee by the Company will be sufficient to constitute "employment" by the Company.

(o) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(p) "Exchange Program" means a program under which (i) outstanding Awards are surrendered or cancelled in exchange for awards of the same type (which may have higher or lower exercise prices and different terms), awards of a different type, and/or cash, (ii) Participants would have the opportunity to transfer any outstanding Awards to a financial institution or other person or entity selected by the Administrator, and/or (iii) the exercise price of an outstanding Award is increased or reduced. The Administrator will determine the terms and conditions of any Exchange Program in its sole discretion.

(q) "Fair Market Value" means, as of any date, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the New York Stock Exchange, the NASDAQ Global Select Market, the NASDAQ Global Market or the NASDAQ Capital Market of The NASDAQ Stock Market, its Fair Market Value will be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system on the day of determination, as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, the Fair Market Value of a Share will be the mean between the high bid and low asked prices for the Common Stock on the date of determination (or, if no bids and asks were reported on that date, as applicable, on the last trading date such bids and asks were reported), as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable;

(iii) For purposes of any Awards granted on the Registration Date, the Fair Market Value will be the initial price to the public as set forth in the final prospectus included within the registration statement on Form S-1 filed with the Securities and Exchange Commission for the initial public offering of the Common Stock; or

(iv) In the absence of an established market for the Common Stock, the Fair Market Value will be determined in good faith by the Administrator.

(r) "Fiscal Year" means the fiscal year of the Company.

(s) "Incentive Stock Option" means an Option that by its terms qualifies and is intended to qualify as an incentive stock option within the meaning of Section 422 of the Code.

(t) "Inside Director" means a Director who is an Employee.

(u) "Nonstatutory Stock Option" means an Option that by its terms does not qualify or is not intended to qualify as an Incentive Stock Option.

(v) "Officer" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(w) "Option" means a stock option granted pursuant to the Plan.

(x) "Outside Director" means a Director who is not an Employee.

(y) "Parent" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(z) "Participant" means the holder of an outstanding Award.

(aa) "Performance Share" means an Award denominated in Shares which may be earned in whole or in part upon attainment of performance goals or other vesting criteria as the Administrator may determine pursuant to Section 10.

(bb) "Performance Unit" means an Award which may be earned in whole or in part upon attainment of performance goals or other vesting criteria as the Administrator may determine and which may be settled for cash, Shares or other securities or a combination of the foregoing pursuant to Section 10.

(cc) "Period of Restriction" means the period during which the transfer of Shares of Restricted Stock are subject to restrictions and therefore, the Shares are subject to a substantial risk of forfeiture. Such restrictions may be based on the passage of time, the achievement of target levels of performance, or the occurrence of other events as determined by the Administrator.

(dd) "Plan" means this 2014 Equity Incentive Plan.

(ee) "Registration Date" means the effective date of the first registration statement that is filed by the Company and declared effective pursuant to Section 12(g) of the Exchange Act, with respect to any class of the Company's securities.

(ff) "Restricted Stock" means Shares issued pursuant to a Restricted Stock award under Section 7 of the Plan, or issued pursuant to the early exercise of an Option.

(gg) "Restricted Stock Unit" means a bookkeeping entry representing an amount equal to the Fair Market Value of one Share, granted pursuant to Section 8. Each Restricted Stock Unit represents an unfunded and unsecured obligation of the Company.

(hh) "Rule 16b-3" means Rule 16b-3 of the Exchange Act or any successor to Rule 16b-3, as in effect when discretion is being exercised with respect to the Plan.

(ii) "Section 16(b)" means Section 16(b) of the Exchange Act.

(jj) "Service Provider" means an Employee, Director or Consultant.

(kk) "Share" means a share of the Common Stock, as adjusted in accordance with Section 14 of the Plan.

(ll) "Stock Appreciation Right" means an Award, granted alone or in connection with an Option, that pursuant to Section 9 is designated as a Stock Appreciation Right.

(mm) "Subsidiary" means a "subsidiary corporation," whether now or hereafter existing, as defined in Section 424(f) of the Code.

3. Stock Subject to the Plan.

(a) Stock Subject to the Plan. Subject to the provisions of Section 14 of the Plan, the maximum aggregate number of Shares that may be issued under the Plan is 8,125,000 Shares, plus the sum of (i) any Shares that, as of the Registration Date, have been reserved but not issued pursuant to any awards granted under the Company's 1999 Incentive Stock Plan and 2010 Equity Incentive Plan (the "Existing Plans") and are not subject to any awards granted thereunder, and (ii) any Shares subject to stock options or similar awards granted under the Existing Plans that, on or after the Registration Date, expire or otherwise terminate without having been exercised in full and Shares issued pursuant to awards granted under the Existing Plans that are forfeited to or repurchased by the Company, with the maximum number of Shares to be added to the Plan from previously granted awards under the Existing Plans equal to 4,373,382. The Shares may be authorized, but unissued, or reacquired Common Stock.

(b) Automatic Share Reserve Increase. Subject to the provisions of Section 14 of the Plan, the number of Shares available for issuance under the Plan will be increased on the first day of each Fiscal Year beginning with the 2014 Fiscal Year, in an amount equal to the least of (i) Shares, (ii) % of the outstanding Shares on the last day of the immediately preceding Fiscal Year or (iii) such number of Shares determined by the Board; provided, however, that such determination under clause (iii) will be made no later than the last day of the immediately preceding Fiscal Year.

(c) Lapsed Awards. If an Award expires or becomes unexercisable without having been exercised in full, is surrendered pursuant to an Exchange Program, or, with respect to Restricted Stock, Restricted Stock Units, Performance Units or Performance Shares, is forfeited to, or repurchased by, the Company due to failure to vest, then the unpurchased Shares (or for Awards other than Options or Stock Appreciation Rights the forfeited or repurchased Shares), which were subject thereto will become available for future grant or sale under the Plan (unless the Plan has terminated). With respect to Stock Appreciation Rights, only Shares actually issued (i.e., the net Shares issued) pursuant to a Stock Appreciation Right will cease to be available under the Plan; all remaining Shares under Stock Appreciation Rights will remain available for future grant or sale under the Plan (unless the Plan has terminated). Shares that actually have been issued under the Plan under any Award will not be returned to the Plan and will not become available for future distribution under the Plan; provided, however, that if Shares issued pursuant to Awards of Restricted Stock, Restricted Stock Units, Performance Shares or Performance Units are repurchased by the Company or are forfeited to the Company, such Shares will become available for future grant under the Plan. Shares used to pay the exercise price of an Award or to satisfy the tax withholding obligations related to an Award will become available for future grant or sale under the Plan. To the extent an Award under the Plan is paid out in cash rather than Shares, such cash payment will not result in reducing the number of Shares available for issuance under the Plan. Notwithstanding the foregoing and, subject to adjustment as provided in Section 14, the maximum number of Shares that may be issued upon the exercise of Incentive Stock Options will equal the aggregate Share number stated in Section 3(a), plus, to the extent allowable under Section 422 of the Code, any Shares that become available for issuance under the Plan pursuant to Sections 3(b) and 3(c).

(d) Share Reserve. The Company, during the term of this Plan, will at all times reserve and keep available such number of Shares as will be sufficient to satisfy the requirements of the Plan.

4. Administration of the Plan.

(a) Procedure.

(i) Multiple Administrative Bodies. Different Committees with respect to different groups of Service Providers may administer the Plan.

(ii) Section 162(m). To the extent that the Administrator determines it to be desirable to qualify Awards granted hereunder as "performance-based compensation" within the meaning of Section 162(m) of the Code, the Plan will be administered by a Committee of two (2) or more "outside directors" within the meaning of Section 162(m) of the Code.

(iii) Rule 16b-3. To the extent desirable to qualify transactions hereunder as exempt under Rule 16b-3, the transactions contemplated hereunder will be structured to satisfy the requirements for exemption under Rule 16b-3.

(iv) Other Administration. Other than as provided above, the Plan will be administered by (A) the Board or (B) a Committee, which committee will be constituted to satisfy Applicable Laws.

(b) Powers of the Administrator. Subject to the provisions of the Plan, and in the case of a Committee, subject to the specific duties delegated by the Board to such Committee, the Administrator will have the authority, in its discretion:

(i) to determine the Fair Market Value;

(ii) to select the Service Providers to whom Awards may be granted hereunder;

(iii) to determine the number of Shares to be covered by each Award granted hereunder;

(iv) to approve forms of Award Agreements for use under the Plan;

(v) to determine the terms and conditions, not inconsistent with the terms of the Plan, of any Award granted hereunder. Such terms and conditions include, but are not limited to, the exercise price, the time or times when Awards may be exercised (which may be based on performance criteria), any vesting acceleration or waiver of forfeiture restrictions, and any restriction or limitation regarding any Award or the Shares relating thereto, based in each case on such factors as the Administrator will determine;

(vi) to institute and determine the terms and conditions of an Exchange Program;

(vii) to construe and interpret the terms of the Plan and Awards granted pursuant to the Plan;

(viii) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations relating to sub-plans established for the purpose of satisfying applicable foreign laws or for qualifying for favorable tax treatment under applicable foreign laws;

(ix) to modify or amend each Award (subject to Section 19 of the Plan), including but not limited to the discretionary authority to extend the post-termination exercisability period of Awards and to extend the maximum term of an Option (subject to Section 6(b) of the Plan regarding Incentive Stock Options);

(x) to allow Participants to satisfy tax withholding obligations in such manner as prescribed in Section 15 of the Plan;

(xi) to authorize any person to execute on behalf of the Company any instrument required to effect the grant of an Award previously granted by the Administrator;

(xii) to allow a Participant to defer the receipt of the payment of cash or the delivery of Shares that otherwise would be due to such Participant under an Award; and

(xiii) to make all other determinations deemed necessary or advisable for administering the Plan.

(c) Effect of Administrator's Decision. The Administrator's decisions, determinations and interpretations will be final and binding on all Participants and any other holders of Awards.

5. Eligibility. Nonstatutory Stock Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Performance Shares and Performance Units may be granted to Service Providers. Incentive Stock Options may be granted only to Employees.

6. Stock Options.

(a) Limitations. Each Option will be designated in the Award Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designation, to the extent that the aggregate Fair Market Value of the Shares with respect to which Incentive Stock Options are exercisable for the first time by the Participant during any calendar year (under all plans of the Company and any Parent or Subsidiary) exceeds one hundred thousand dollars ($100,000), such Options will be treated as Nonstatutory Stock Options. For purposes of this Section 6(a), Incentive Stock Options will be taken into account in the order in which they were granted. The Fair Market Value of the Shares will be determined as of the time the Option with respect to such Shares is granted.

(b) Term of Option. The term of each Option will be stated in the Award Agreement. In the case of an Incentive Stock Option, the term will be ten (10) years from the date of grant or such shorter term as may be provided in the Award Agreement. Moreover, in the

case of an Incentive Stock Option granted to a Participant who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or any Parent or Subsidiary, the term of the Incentive Stock Option will be five (5) years from the date of grant or such shorter term as may be provided in the Award Agreement.

(c) Option Exercise Price and Consideration.

(i) Exercise Price. The per share exercise price for the Shares to be issued pursuant to exercise of an Option will be determined by the Administrator, subject to the following:

(1) In the case of an Incentive Stock Option

(A) granted to an Employee who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the per Share exercise price will be no less than one hundred ten percent (110%) of the Fair Market Value per Share on the date of grant.

(B) granted to any Employee other than an Employee described in paragraph (A) immediately above, the per Share exercise price will be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant.

(2) In the case of a Nonstatutory Stock Option, the per Share exercise price will be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant.

(3) Notwithstanding the foregoing, Options may be granted with a per Share exercise price of less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant pursuant to a transaction described in, and in a manner consistent with, Section 424(a) of the Code.

(ii) Waiting Period and Exercise Dates. At the time an Option is granted, the Administrator will fix the period within which the Option may be exercised and will determine any conditions that must be satisfied before the Option may be exercised.

(iii) Form of Consideration. The Administrator will determine the acceptable form of consideration for exercising an Option, including the method of payment. In the case of an Incentive Stock Option, the Administrator will determine the acceptable form of consideration at the time of grant. Such consideration may consist entirely of: (1) cash; (2) check; (3) promissory note, to the extent permitted by Applicable Laws, (4) other Shares, provided that such Shares have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which such Option will be exercised and provided that accepting such Shares will not result in any adverse accounting consequences to the Company, as the Administrator determines in its sole discretion; (5) consideration received by the Company under a broker-assisted (or other) cashless exercise program (whether through a broker or otherwise) implemented by the Company in connection with the Plan; (6) by net

exercise; (7) such other consideration and method of payment for the issuance of Shares to the extent permitted by Applicable Laws; or (8) any combination of the foregoing methods of payment.

(d) Exercise of Option.

(i) Procedure for Exercise; Rights as a Stockholder. Any Option granted hereunder will be exercisable according to the terms of the Plan and at such times and under such conditions as determined by the Administrator and set forth in the Award Agreement. An Option may not be exercised for a fraction of a Share.

An Option will be deemed exercised when the Company receives: (i) a notice of exercise (in such form as the Administrator may specify from time to time) from the person entitled to exercise the Option, and (ii) full payment for the Shares with respect to which the Option is exercised (together with applicable withholding taxes). Full payment may consist of any consideration and method of payment authorized by the Administrator and permitted by the Award Agreement and the Plan. Shares issued upon exercise of an Option will be issued in the name of the Participant or, if requested by the Participant, in the name of the Participant and his or her spouse. Until the Shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a stockholder will exist with respect to the Shares subject to an Option, notwithstanding the exercise of the Option. The Company will issue (or cause to be issued) such Shares promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 14 of the Plan.

Exercising an Option in any manner will decrease the number of Shares thereafter available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised.

(ii) Termination of Relationship as a Service Provider. If a Participant ceases to be a Service Provider, other than upon the Participant's termination as the result of the Participant's death or Disability, the Participant may exercise his or her Option within such period of time as is specified in the Award Agreement to the extent that the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, the Option will remain exercisable for three (3) months following the Participant's termination. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option will revert to the Plan. If after termination the Participant does not exercise his or her Option within the time specified by the Administrator, the Option will terminate, and the Shares covered by such Option will revert to the Plan.

(iii) Disability of Participant. If a Participant ceases to be a Service Provider as a result of the Participant's Disability, the Participant may exercise his or her Option within such period of time as is specified in the Award Agreement to the extent the Option is vested on the date of termination (but in no event later than the expiration of the term of such

Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, the Option will remain exercisable for twelve (12) months following the Participant's termination. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option will revert to the Plan. If after termination the Participant does not exercise his or her Option within the time specified herein, the Option will terminate, and the Shares covered by such Option will revert to the Plan.

(iv) Death of Participant. If a Participant dies while a Service Provider, the Option may be exercised following the Participant's death within such period of time as is specified in the Award Agreement to the extent that the Option is vested on the date of death (but in no event may the option be exercised later than the expiration of the term of such Option as set forth in the Award Agreement), by the Participant's designated beneficiary, provided such beneficiary has been designated prior to Participant's death in a form acceptable to the Administrator. If no such beneficiary has been designated by the Participant, then such Option may be exercised by the personal representative of the Participant's estate or by the person(s) to whom the Option is transferred pursuant to the Participant's will or in accordance with the laws of descent and distribution. In the absence of a specified time in the Award Agreement, the Option will remain exercisable for twelve (12) months following Participant's death. Unless otherwise provided by the Administrator, if at the time of death Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option will immediately revert to the Plan. If the Option is not so exercised within the time specified herein, the Option will terminate, and the Shares covered by such Option will revert to the Plan.

7. Restricted Stock.

(a) Grant of Restricted Stock. Subject to the terms and provisions of the Plan, the Administrator, at any time and from time to time, may grant Shares of Restricted Stock to Service Providers in such amounts as the Administrator, in its sole discretion, will determine.

(b) Restricted Stock Agreement. Each Award of Restricted Stock will be evidenced by an Award Agreement that will specify the Period of Restriction, the number of Shares granted, and such other terms and conditions as the Administrator, in its sole discretion, will determine. Unless the Administrator determines otherwise, the Company as escrow agent will hold Shares of Restricted Stock until the restrictions on such Shares have lapsed.

(c) Transferability. Except as provided in this Section 7 or the Award Agreement, Shares of Restricted Stock may not be sold, transferred, pledged, assigned, or otherwise alienated or hypothecated until the end of the applicable Period of Restriction.

(d) Other Restrictions. The Administrator, in its sole discretion, may impose such other restrictions on Shares of Restricted Stock as it may deem advisable or appropriate.

(e) Removal of Restrictions. Except as otherwise provided in this Section 7, Shares of Restricted Stock covered by each Restricted Stock grant made under the Plan will be released from escrow as soon as practicable after the last day of the Period of Restriction or at

such other time as the Administrator may determine. The Administrator, in its discretion, may accelerate the time at which any restrictions will lapse or be removed.

(f) Voting Rights. During the Period of Restriction, Service Providers holding Shares of Restricted Stock granted hereunder may exercise full voting rights with respect to those Shares, unless the Administrator determines otherwise.

(g) Dividends and Other Distributions. During the Period of Restriction, Service Providers holding Shares of Restricted Stock will be entitled to receive all dividends and other distributions paid with respect to such Shares, unless the Administrator provides otherwise. If any such dividends or distributions are paid in Shares, the Shares will be subject to the same restrictions on transferability and forfeitability as the Shares of Restricted Stock with respect to which they were paid.

(h) Return of Restricted Stock to Company. On the date set forth in the Award Agreement, the Restricted Stock for which restrictions have not lapsed will revert to the Company and again will become available for grant under the Plan.

8. Restricted Stock Units.

(a) Grant. Restricted Stock Units may be granted at any time and from time to time as determined by the Administrator. After the Administrator determines that it will grant Restricted Stock Units under the Plan, it will advise the Participant in an Award Agreement of the terms, conditions, and restrictions related to the grant, including the number of Restricted Stock Units.

(b) Vesting Criteria and Other Terms. The Administrator will set vesting criteria in its discretion, which, depending on the extent to which the criteria are met, will determine the number of Restricted Stock Units that will be paid out to the Participant. The Administrator may set vesting criteria based upon the achievement of Company-wide, divisional, business unit, or individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws or any other basis determined by the Administrator in its discretion.

(c) Earning Restricted Stock Units. Upon meeting the applicable vesting criteria, the Participant will be entitled to receive a payout as determined by the Administrator. Notwithstanding the foregoing, at any time after the grant of Restricted Stock Units, the Administrator, in its sole discretion, may reduce or waive any vesting criteria that must be met to receive a payout.

(d) Form and Timing of Payment. Payment of earned Restricted Stock Units will be made as soon as practicable after the date(s) determined by the Administrator and set forth in the Award Agreement. The Administrator, in its sole discretion, may only settle earned Restricted Stock Units in cash, Shares, or a combination of both.

(e) Cancellation. On the date set forth in the Award Agreement, all unearned Restricted Stock Units will be forfeited to the Company.

9. Stock Appreciation Rights.

(a) Grant of Stock Appreciation Rights. Subject to the terms and conditions of the Plan, a Stock Appreciation Right may be granted to Service Providers at any time and from time to time as will be determined by the Administrator, in its sole discretion.

(b) Number of Shares. The Administrator will have complete discretion to determine the number of Stock Appreciation Rights granted to any Service Provider.

(c) Exercise Price and Other Terms. The per share exercise price for the Shares to be issued pursuant to exercise of a Stock Appreciation Right will be determined by the Administrator and will be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant. Otherwise, the Administrator, subject to the provisions of the Plan, will have complete discretion to determine the terms and conditions of Stock Appreciation Rights granted under the Plan.

(d) Stock Appreciation Right Agreement. Each Stock Appreciation Right grant will be evidenced by an Award Agreement that will specify the exercise price, the term of the Stock Appreciation Right, the conditions of exercise, and such other terms and conditions as the Administrator, in its sole discretion, will determine.

(e) Expiration of Stock Appreciation Rights. A Stock Appreciation Right granted under the Plan will expire ten (10) years from the date of grant or such shorter term as may be provided in the Award Agreement, as determined by the Administrator, in its sole discretion. Notwithstanding the foregoing, the rules of Section 6(d) relating to exercise also will apply to Stock Appreciation Rights.

(f) Payment of Stock Appreciation Right Amount. Upon exercise of a Stock Appreciation Right, a Participant will be entitled to receive payment from the Company in an amount determined by multiplying:

(i) The difference between the Fair Market Value of a Share on the date of exercise over the exercise price; times

(ii) The number of Shares with respect to which the Stock Appreciation Right is exercised.

At the discretion of the Administrator, the payment upon Stock Appreciation Right exercise may be in cash, in Shares of equivalent value, or in some combination thereof.

10. Performance Units and Performance Shares.

(a) Grant of Performance Units/Shares. Performance Units and Performance Shares may be granted to Service Providers at any time and from time to time, as will be determined by the Administrator, in its sole discretion. The Administrator will have complete discretion in determining the number of Performance Units and Performance Shares granted to each Participant.

(b) Value of Performance Units/Shares. Each Performance Unit will have an initial value that is established by the Administrator on or before the date of grant. Each Performance Share will have an initial value equal to the Fair Market Value of a Share on the date of grant.

(c) Performance Objectives and Other Terms. The Administrator will set performance objectives or other vesting provisions (including, without limitation, continued status as a Service Provider) in its discretion which, depending on the extent to which they are met, will determine the number or value of Performance Units/Shares that will be paid out to the Service Providers. The time period during which the performance objectives or other vesting provisions must be met will be called the "Performance Period." Each Award of Performance Units/Shares will be evidenced by an Award Agreement that will specify the Performance Period, and such other terms and conditions as the Administrator, in its sole discretion, will determine. The Administrator may set performance objectives based upon the achievement of Company-wide, divisional, business unit or individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws, or any other basis determined by the Administrator in its discretion.

(d) Earning of Performance Units/Shares. After the applicable Performance Period has ended, the holder of Performance Units/Shares will be entitled to receive a payout of the number of Performance Units/Shares earned by the Participant over the Performance Period, to be determined as a function of the extent to which the corresponding performance objectives or other vesting provisions have been achieved. After the grant of a Performance Unit/Share, the Administrator, in its sole discretion, may reduce or waive any performance objectives or other vesting provisions for such Performance Unit/Share.

(e) Form and Timing of Payment of Performance Units/Shares. Payment of earned Performance Units/Shares will be made as soon as practicable after the expiration of the applicable Performance Period. The Administrator, in its sole discretion, may pay earned Performance Units/Shares in the form of cash, in Shares (which have an aggregate Fair Market Value equal to the value of the earned Performance Units/Shares at the close of the applicable Performance Period) or in a combination thereof.

(f) Cancellation of Performance Units/Shares. On the date set forth in the Award Agreement, all unearned or unvested Performance Units/Shares will be forfeited to the Company, and again will be available for grant under the Plan.

11. Outside Director Limitations.

(a) Cash-settled Awards. No Outside Director may be granted, in any Fiscal Year, cash-settled Awards with a grant date fair value (determined in accordance with U.S. generally accepted accounting principles) of greater than $ , increased to $ in the Fiscal Year of his or her initial service as an Outside Director.

(b) Stock-settled Awards. Subject to the provisions of Section 14 of the Plan, no Outside Director may be granted, in any Fiscal Year, Awards covering more than

Shares, increased to Shares in the Fiscal Year of his or her initial service as an Outside Director.

Any Awards granted to an individual while he or she was an Employee, or while he or she was a Consultant but not an Outside Director, will not count for purposes of the limitations under this Section 11.

12. Leaves of Absence/Transfer Between Locations. Unless the Administrator provides otherwise, vesting of Awards granted hereunder will be suspended during any unpaid leave of absence. A Participant will not cease to be an Employee in the case of (i) any leave of absence approved by the Company or (ii) transfers between locations of the Company or between the Company, its Parent, or any Subsidiary. For purposes of Incentive Stock Options, no such leave may exceed three (3) months, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Company is not so guaranteed, then six (6) months following the first (1st) day of such leave any Incentive Stock Option held by the Participant will cease to be treated as an Incentive Stock Option and will be treated for tax purposes as a Nonstatutory Stock Option.

13. Transferability of Awards. Unless determined otherwise by the Administrator, an Award may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the Participant, only by the Participant. If the Administrator makes an Award transferable, such Award will contain such additional terms and conditions as the Administrator deems appropriate.

14. Adjustments; Dissolution or Liquidation; Change in Control.

(a) Adjustments. In the event that any dividend or other distribution (whether in the form of cash, Shares, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Shares or other securities of the Company, or other change in the corporate structure of the Company affecting the Shares occurs, the Administrator, in order to prevent diminution or enlargement of the benefits or potential benefits intended to be made available under the Plan, will adjust the number and class of Shares that may be delivered under the Plan and/or the number, class, and price of Shares covered by each outstanding Award, and the numerical Share limits in Sections 3 and
11(b) of the Plan.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, the Administrator will notify each Participant as soon as practicable prior to the effective date of such proposed transaction. To the extent it previously has not been exercised, an Award will terminate immediately prior to the consummation of such proposed action.

(c) Change in Control. In the event of a Change in Control, each outstanding Award will be treated as the Administrator determines, including, without limitation, that (i) Awards may be assumed, or substantially equivalent Awards will be substituted, by the acquiring or succeeding corporation (or an affiliate thereof) with appropriate adjustments as to

the number and kind of shares and prices; (ii) upon written notice to a Participant, that the Participant's Awards will terminate upon or immediately prior to the consummation of such Change in Control; (iii) outstanding Awards will vest and become exercisable, realizable, or payable, or restrictions applicable to an Award will lapse, in whole or in part prior to or upon consummation of such Change in Control, and, to the extent the Administrator determines, terminate upon or immediately prior to the effectiveness of such merger or Change in Control; (iv) (A) the termination of an Award in exchange for an amount of cash and/or property, if any, equal to the amount that would have been attained upon the exercise of such Award or realization of the Participant's rights as of the date of the occurrence of the transaction (and, for the avoidance of doubt, if as of the date of the occurrence of the transaction the Administrator determines in good faith that no amount would have been attained upon the exercise of such Award or realization of the Participant's rights, then such Award may be terminated by the Company without payment), or (B) the replacement of such Award with other rights or property selected by the Administrator in its sole discretion; or (v) any combination of the foregoing. In taking any of the actions permitted under this Section 14(c), the Administrator will not be required to treat all Awards similarly in the transaction.

In the event that the successor corporation does not assume or substitute for the Award, the Participant will fully vest in and have the right to exercise all of his or her outstanding Options and Stock Appreciation Rights, including Shares as to which such Awards would not otherwise be vested or exercisable, all restrictions on Restricted Stock and Restricted Stock Units will lapse, and, with respect to Awards with performance-based vesting, all performance goals or other vesting criteria will be deemed achieved at one hundred percent (100%) of target levels and all other terms and conditions met. In addition, if an Option or Stock Appreciation Right is not assumed or substituted in the event of a Change in Control, the Administrator will notify the Participant in writing or electronically that the Option or Stock Appreciation Right will be exercisable for a period of time determined by the Administrator in its sole discretion, and the Option or Stock Appreciation Right will terminate upon the expiration of such period.

For the purposes of this subsection (c), an Award will be considered assumed if, following the Change in Control, the Award confers the right to purchase or receive, for each Share subject to the Award immediately prior to the Change in Control, the consideration (whether stock, cash, or other securities or property) received in the Change in Control by holders of Common Stock for each Share held on the effective date of the transaction (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares); provided, however, that if such consideration received in the Change in Control is not solely common stock of the successor corporation or its Parent, the Administrator may, with the consent of the successor corporation, provide for the consideration to be received upon the exercise of an Option or Stock Appreciation Right or upon the payout of a Restricted Stock Unit, Performance Unit or Performance Share, for each Share subject to such Award, to be solely common stock of the successor corporation or its Parent equal in fair market value to the per share consideration received by holders of Common Stock in the Change in Control.

Notwithstanding anything in this Section 14(c) to the contrary, an Award that vests, is earned or paid-out upon the satisfaction of one or more performance goals will not be

considered assumed if the Company or its successor modifies any of such performance goals without the Participant's consent; provided, however, a modification to such performance goals only to reflect the successor corporation's post-Change in Control corporate structure will not be deemed to invalidate an otherwise valid Award assumption.

(d) Outside Director Awards. With respect to Awards granted to an Outside Director, in the event of a Change in Control, the Participant will fully vest in and have the right to exercise Options and/or Stock Appreciation Rights as to all of the Shares underlying such Award, including those Shares which otherwise would not be vested or exercisable, all restrictions on Restricted Stock and Restricted Stock Units will lapse, and, with respect to Awards with performance-based vesting, all performance goals or other vesting criteria will be deemed achieved at one hundred percent (100%) of target levels and all other terms and conditions met.

15. Tax.

(a) Withholding Requirements. Prior to the delivery of any Shares or cash pursuant to an Award (or exercise thereof) or such earlier time as any tax withholding obligations are due, the Company will have the power and the right to deduct or withhold, or require a Participant to remit to the Company, an amount sufficient to satisfy federal, state, local, foreign or other taxes (including the Participant's FICA obligation) required to be withheld with respect to such Award (or exercise thereof).

(b) Withholding Arrangements. The Administrator, in its sole discretion and pursuant to such procedures as it may specify from time to time, may permit a Participant to satisfy such tax withholding obligation, in whole or in part by (without limitation) (a) paying cash, (b) electing to have the Company withhold otherwise deliverable cash or Shares having a Fair Market Value equal to the minimum statutory amount required to be withheld, or (c) delivering to the Company already-owned Shares having a Fair Market Value equal to the minimum statutory amount required to be withheld. The Fair Market Value of the Shares to be withheld or delivered will be determined as of the date that the taxes are required to be withheld.

(c) Compliance With Code Section 409A. Awards will be designed and operated in such a manner that they are either exempt from the application of, or comply with, the requirements of Code Section 409A such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Code Section 409A, except as otherwise determined in the sole discretion of the Administrator. The Plan and each Award Agreement under the Plan is intended to meet the requirements of Code Section 409A and will be construed and interpreted in accordance with such intent, except as otherwise determined in the sole discretion of the Administrator. To the extent that an Award or payment, or the settlement or deferral thereof, is subject to Code Section 409A, the Award will be granted, paid, settled or deferred in a manner that will meet the requirements of Code Section 409A, such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Code Section 409A.

16. No Effect on Employment or Service. Neither the Plan nor any Award will confer upon a Participant any right with respect to continuing the Participant's relationship as a

Service Provider with the Company, nor will they interfere in any way with the Participant's right or the Company's right to terminate such relationship at any time, with or without cause, to the extent permitted by Applicable Laws.

17. Date of Grant. The date of grant of an Award will be, for all purposes, the date on which the Administrator makes the determination granting such Award, or such other later date as is determined by the Administrator. Notice of the determination will be provided to each Participant within a reasonable time after the date of such grant.

18. Term of Plan. Subject to Section 22 of the Plan, the Plan will become effective upon the later to occur of (i) its adoption by the Board or (ii) the business day immediately prior to the Registration Date. It will continue in effect for a term of ten (10) years from the date adopted by the Board, unless terminated earlier under Section 19 of the Plan.

19. Amendment and Termination of the Plan.

(a) Amendment and Termination. The Administrator may at any time amend, alter, suspend or terminate the Plan.

(b) Stockholder Approval. The Company will obtain stockholder approval of any Plan amendment to the extent necessary and desirable to comply with Applicable Laws.

(c) Effect of Amendment or Termination. No amendment, alteration, suspension or termination of the Plan will materially impair the rights of any Participant, unless mutually agreed otherwise between the Participant and the Administrator, which agreement must be in writing and signed by the Participant and the Company. Termination of the Plan will not affect the Administrator's ability to exercise the powers granted to it hereunder with respect to Awards granted under the Plan prior to the date of such termination.

20. Conditions Upon Issuance of Shares.

(a) Legal Compliance. Shares will not be issued pursuant to the exercise of an Award unless the exercise of such Award and the issuance and delivery of such Shares will comply with Applicable Laws and will be further subject to the approval of counsel for the Company with respect to such compliance.

(b) Investment Representations. As a condition to the exercise of an Award, the Company may require the person exercising such Award to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required.

21. Inability to Obtain Authority. The inability of the Company to obtain authority from any regulatory body having jurisdiction or to complete or comply with the requirements of any registration or other qualification of the Shares under any state, federal or foreign law or under the rules and regulations of the Securities and Exchange Commission, the stock exchange on which Shares of the same class are then listed, or any other governmental or regulatory body, which authority, registration, qualification or rule compliance is deemed by the Company's

counsel to be necessary or advisable for the issuance and sale of any Shares hereunder, will relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority, registration, qualification or rule compliance will not have been obtained.

22. Stockholder Approval. The Plan will be subject to approval by the stockholders of the Company within twelve (12) months after the date the Plan is adopted by the Board. Such stockholder approval will be obtained in the manner and to the degree required under Applicable Laws.

**Exhibit 10.5**

**CAPNIA, INC.**

**2014 EMPLOYEE STOCK PURCHASE PLAN**

1. Purpose. The purpose of the Plan is to provide employees of the Company and its Designated Companies with an opportunity to purchase Common Stock through accumulated Contributions. The Company intends for the Plan to have two components: a Code Section 423 Component ("423 Component") and a non-Code Section 423 Component ("Non-423 Component"). The Company's intention is to have the 423 Component of the Plan qualify as an "employee stock purchase plan" under Section 423 of the Code. The provisions of the 423 Component, accordingly, will be construed so as to extend and limit Plan participation in a uniform and nondiscriminatory basis consistent with the requirements of Section 423 of the Code. In addition, this Plan authorizes the grant of an option to purchase shares of Common Stock under the Non-423 Component that does not qualify as an "employee stock purchase plan" under Section 423 of the Code; such an option will be granted pursuant to rules, procedures or sub-plans adopted by the Administrator designed to achieve tax, securities laws or other objectives for Eligible Employees and the Company. Except as otherwise provided herein, the Non-423 Component will operate and be administered in the same manner as the 423 Component.

2. Definitions.

(a) "Administrator" means the Board or any Committee designated by the Board to administer the Plan pursuant to Section 14.

(b) "Affiliate" means any entity, other than a Subsidiary, in which the Company has an equity or other ownership interest.

(c) "Applicable Laws" means the requirements relating to the administration of equity-based awards under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any foreign country or jurisdiction where options are, or will be, granted under the Plan.

(d) "Board" means the Board of Directors of the Company.

(e) "Change in Control" means the occurrence of any of the following events:

(i) A change in the ownership of the Company which occurs on the date that any one person, or more than one person acting as a group ("Person"), acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than fifty percent (50%) of the total voting power of the stock of the Company; provided, however, that for purposes of this subsection, the acquisition of additional stock by any

one Person, who is considered to own more than fifty percent (50%) of the total voting power of the stock of the Company will not be considered a Change in Control; or

(ii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board is replaced during any twelve (12) month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this clause (ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control; or

(iii) A change in the ownership of a substantial portion of the Company's assets which occurs on the date that any Person acquires (or has acquired during the twelve (12) month period ending on the date of the most recent acquisition by such person or persons) assets from the Company that have a total gross fair market value equal to or more than fifty percent (50%) of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection, the following will not constitute a change in the ownership of a substantial portion of the Company's assets: (A) a transfer to an entity that is controlled by the Company's stockholders immediately after the transfer, or (B) a transfer of assets by the Company to: (1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's stock, (2) an entity, fifty percent (50%) or more of the total value or voting power of which is owned, directly or indirectly, by the Company, (3) a Person, that owns, directly or indirectly, fifty percent (50%) or more of the total value or voting power of all the outstanding stock of the Company, or (4) an entity, at least fifty percent (50%) of the total value or voting power of which is owned, directly or indirectly, by a Person described in this subsection (iii)(B)(3). For purposes of this subsection, gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition, persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company.

Notwithstanding the foregoing, a transaction will not be deemed a Change in Control unless the transaction qualifies as a change in control event within the meaning of Code Section 409A, as it has been and may be amended from time to time, and any proposed or final U.S. Treasury Regulations and Internal Revenue Service guidance that has been promulgated or may be promulgated thereunder from time to time.

Further and for the avoidance of doubt, a transaction will not constitute a Change in Control if: (i) its sole purpose is to change the state of the Company's incorporation, or (ii) its sole purpose is to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transaction.

(f) "Code" means the U.S. Internal Revenue Code of 1986, as amended. Reference to a specific section of the Code or U.S. Treasury Regulation thereunder will include

such section or regulation, any valid regulation or other official applicable guidance promulgated under such section, and any comparable provision of any future legislation or regulation amending, supplementing or superseding such section or regulation.

(g) "Committee" means a committee of the Board appointed in accordance with Section 14 hereof.

(h) "Common Stock" means the common stock of the Company.

(i) "Company" means Capnia, Inc., a Delaware corporation, or any successor thereto.

(j) "Compensation" means an Eligible Employee's base straight time gross earnings, but exclusive of payments for incentive compensation, bonuses, payments for overtime and shift premium, equity compensation income and other similar compensation. The Administrator, in its discretion, may, on a uniform and nondiscriminatory basis, establish a different definition of Compensation for a subsequent Offering Period.

(k) "Contributions" means the payroll deductions and other additional payments that the Company may permit to be made by a Participant to fund the exercise of options granted pursuant to the Plan.

(l) "Designated Company" means any Subsidiary or Affiliate that has been designated by the Administrator from time to time in its sole discretion as eligible to participate in the Plan. For purposes of the 423 Component, only the Company and its Subsidiaries may be Designated Companies, provided, however that at any given time, a Subsidiary that is a Designated Company under the 423 Component will not be a Designated Company under the Non-423 Component.

(m) "Director" means a member of the Board.

(n) "Eligible Employee" means any individual who is a common law employee providing services to the Company or a Designated Company and is customarily employed for at least twenty (20) hours per week and more than five (5) months in any calendar year by the Employer, or any lesser number of hours per week and/or number of months in any calendar year established by the Administrator (if required under applicable local law) for purposes of any separate Offering or for Eligible Employees participating in the Non-423 Component. For purposes of the Plan, the employment relationship will be treated as continuing intact while the individual is on sick leave or other leave of absence that the Employer approves or is legally protected under Applicable Laws. Where the period of leave exceeds three (3) months and the individual's right to reemployment is not guaranteed either by statute or by contract, the employment relationship will be deemed to have terminated three (3) months and one (1) day following the commencement of such leave. The Administrator, in its discretion, from time to time may, prior to an Enrollment Date for all options to be granted on such Enrollment Date in an Offering, determine (on a uniform and nondiscriminatory basis or as otherwise permitted by Treasury Regulation Section 1.423-2) that the definition of Eligible Employee will or will not include an individual if he or she: (i) has not completed at least two (2) years of service since his or her last hire date (or such lesser period of time as may be determined

by the Administrator in its discretion), (ii) customarily works not more than twenty (20) hours per week (or such lesser period of time as may be determined by the Administrator in its discretion), (iii) customarily works not more than five (5) months per calendar year (or such lesser period of time as may be determined by the Administrator in its discretion), (iv) is a highly compensated employee within the meaning of Section 414(q) of the Code, or (v) is a highly compensated employee within the meaning of Section 414(q) of the Code with compensation above a certain level or is an officer or subject to the disclosure requirements of Section 16(a) of the Exchange Act, provided the exclusion is applied with respect to each Offering in an identical manner to all highly compensated individuals of the Employer whose Employees are participating in that Offering. Each exclusion will be applied with respect to an Offering in a manner complying with U.S. Treasury Regulation Section 1.423-2(e)(2)(ii).

(o) "Employer" means the employer of the applicable Eligible Employee(s).

(p) "Enrollment Date" means the first Trading Day of each Offering Period.

(q) "Exchange Act" means the U.S. Securities Exchange Act of 1934, as amended, including the rules and regulations promulgated thereunder.

(r) "Exercise Date" means such dates on which each outstanding option granted under the Plan will be exercised (except if the Plan has been terminated), as may be determined by the Administrator, in its discretion and on a uniform and nondiscriminatory basis from time to time prior to an Enrollment Date for all options to be granted on such Enrollment Date.

(s) "Fair Market Value" means, as of any date and unless the Administrator determines otherwise, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the New York Stock Exchange, NASDAQ Global Select Market, the NASDAQ Global Market or the NASDAQ Capital Market of The NASDAQ Stock Market, its Fair Market Value will be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system on the date of determination, as reported in The *Wall Street Journal* or such other source as the Administrator deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, its Fair Market Value will be the mean between the high bid and low asked prices for the Common Stock on the date of determination (or if no bids and asks were reported on that date, as applicable, on the last Trading Day such bids and asks were reported), as reported in The *Wall Street Journal* or such other source as the Administrator deems reliable; or

(iii) In the absence of an established market for the Common Stock, the Fair Market Value thereof will be determined in good faith by the Administrator.

(t) "Fiscal Year" means the fiscal year of the Company.

(u) "New Exercise Date" means a new Exercise Date if the Administrator shortens any Offering Period then in progress.

(v) "Offering" means an offer under the Plan of an option that may be exercised during an Offering Period as further described in Section 4. For purposes of the Plan, the Administrator may designate separate Offerings under the Plan (the terms of which need not be identical) in which Employees of one or more Employers will participate, even if the dates of the applicable Offering Periods of each such Offering are identical and the provisions of the Plan will separately apply to each Offering. To the extent permitted by U.S. Treasury Regulation Section 1.423-2(a)(1), the terms of each Offering need not be identical provided that the terms of the Plan and an Offering together satisfy U.S. Treasury Regulation Section 1.423-2(a)(2) and (a)(3).

(w) "Offering Periods" means the period beginning on such date, and ending on an Exercise Date (and for purposes of clarification, there may be multiple Exercise Dates during an Offering Period), as may be determined by the Administrator, in its discretion and on a uniform and nondiscriminatory basis. The duration and timing of Offering Periods may be changed pursuant to Sections 4 and 20.

(x) "Parent" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(y) "Participant" means an Eligible Employee that participates in the Plan.

(z) "Plan" means this Capnia, Inc. 2014 Employee Stock Purchase Plan.

(aa) "Purchase Period" means the period, as determined by the Administrator in its discretion on a uniform and nondiscriminatory basis, commencing on the Enrollment Date and ending with the next Exercise Date, except that if the Administrator determines that more than one Purchase Period should occur within an Offering Period, subsequent Purchase Periods within such Offering Period commence after one Exercise Date and end with the next Exercise Date at such time or times as the Administrator determines prior to the commencement of the applicable Offering Period.

(bb) "Purchase Price" means the price per Share of the Shares purchased under any option granted under the Plan as determined by the Administrator from time to time, in its discretion and on a uniform and nondiscriminatory basis for all options to be granted on an Enrollment Date. However, in no event will the Purchase Price be less than eighty-five percent (85%) of the lower of the Fair Market Value of a share of Common Stock on the Enrollment Date or the Fair Market Value of a share of Common Stock on the Exercise Date and at all times in compliance with Section 423 of the Code (or any successor rule or provision or any other Applicable Law, regulation or stock exchange rule).

(cc) "Subsidiary" means a "subsidiary corporation," whether now or hereafter existing, as defined in Section 424(f) of the Code.

(dd) "Trading Day" means a day on which the national stock exchange upon which the Common Stock is listed is open for trading.

(ee) "U.S. Treasury Regulations" means the Treasury regulations of the Code. Reference to a specific Treasury Regulation or Section of the Code will include such Treasury Regulation or Section, any valid regulation promulgated under such Section, and any comparable provision of any future legislation or regulation amending, supplementing or superseding such Section or regulation.

3. Eligibility.

(a) Offering Periods. Any Eligible Employee on a given Enrollment Date will be eligible to participate in the Plan, subject to the requirements of Section 5.

(b) Non-U.S. Employees. Eligible Employees who are citizens or residents of a non-U.S. jurisdiction (without regard to whether they also are citizens or residents of the United States or resident aliens (within the meaning of Section 7701(b)(1)(A) of the Code)) may be excluded from participation in the Plan or an Offering if the participation of such Eligible Employees is prohibited under the laws of the applicable jurisdiction or if complying with the laws of the applicable jurisdiction would cause the Plan or an Offering to violate Section 423 of the Code. In the case of the Non-423 Component, Eligible Employees may be excluded from participation in the Plan or an Offering if the Administrator has determined that participation of such Eligible Employees is not advisable or practicable.

(c) Limitations. Any provisions of the Plan to the contrary notwithstanding, no Eligible Employee will be granted an option under the Plan (i) to the extent that, immediately after the grant, such Eligible Employee (or any other person whose stock would be attributed to such Eligible Employee pursuant to Section 424(d) of the Code) would own capital stock of the Company or any Parent or Subsidiary of the Company and/or hold outstanding options to purchase such stock possessing five percent (5%) or more of the total combined voting power or value of all classes of the capital stock of the Company or of any Parent or Subsidiary of the Company, or (ii) to the extent that his or her rights to purchase stock under all employee stock purchase plans (as defined in Section 423 of the Code) of the Company or any Parent or Subsidiary of the Company accrues at a rate, which exceeds twenty-five thousand dollars ($25,000) worth of stock (determined at the Fair Market Value of the stock at the time such option is granted) for each calendar year in which such option is outstanding at any time, as determined in accordance with Section 423 of the Code and the regulations thereunder.

4. Offering Periods. Offering Periods will expire on the earliest to occur of (a) the completion of the purchase of Shares on the last Exercise Date occurring within 27 months of the applicable Enrollment Date on which the option to purchase Shares was granted, or (b) such shorter period as may be established by the Administrator from time to time, in its discretion and on a uniform and nondiscriminatory basis, prior to an Enrollment Date for all options to be granted on such Enrollment Date.

5. Participation. An Eligible Employee may participate in the Plan by (i) submitting to the Company's stock administration office (or its designee), on or before a date determined by the Administrator prior to an applicable Enrollment Date, a properly completed subscription agreement authorizing Contributions in the form provided by the Administrator for such purpose, or (ii) following an electronic or other enrollment procedure determined by the Administrator.

6. Contributions.

(a) At the time a Participant enrolls in the Plan pursuant to Section 5, he or she will elect to have Contributions (in the form of payroll deductions or otherwise, to the extent permitted by the Administrator) made on each pay day during the Offering Period in an amount that the Administrator may establish from time to time, in its discretion and on a uniform and nondiscriminatory basis, for all options to be granted on any Enrollment Date, which he or she receives on each pay day during the Offering Period (for illustrative purposes, should a pay day occur on an Exercise Date, a Participant will have any payroll deductions made on such day applied to his or her account under the then-current Purchase Period or Offering Period). The Administrator, in its sole discretion, may permit all Participants in a specified Offering to contribute amounts to the Plan through payment by cash, check or other means set forth in the subscription agreement prior to each Exercise Date of each Purchase Period. A Participant's subscription agreement will remain in effect for successive Offering Periods unless terminated as provided in Section 10 hereof.

(b) In the event Contributions are made in the form of payroll deductions, such payroll deductions for a Participant will commence on the first pay day following the Enrollment Date and will end on the last pay day prior to the Exercise Date of such Offering Period to which such authorization is applicable, unless sooner terminated by the Participant as provided in Section 10 hereof.

(c) All Contributions made for a Participant will be credited to his or her account under the Plan and Contributions will be made in whole percentages only. A Participant may not make any additional payments into such account.

(d) A Participant may discontinue his or her participation in the Plan as provided in Section 10. Except as may be permitted by the Administrator, as determined in its sole discretion, a Participant may not change the rate of his or her Contributions during an Offering Period.

(e) Notwithstanding the foregoing, to the extent necessary to comply with Section 423(b)(8) of the Code and Section 3(c), a Participant's Contributions may be decreased to zero percent (0%) at any time during a Purchase Period. Subject to Section 423(b)(8) of the Code and Section 3(c) hereof, Contributions will recommence at the rate originally elected by the Participant effective as of the beginning of the first Purchase Period scheduled to end in the following calendar year, unless terminated by the Participant as provided in Section 10.

(f) Notwithstanding any provisions to the contrary in the Plan, the Administrator may allow Eligible Employees to participate in the Plan via cash contributions instead of payroll deductions if (i) payroll deductions are not permitted under applicable local law, (ii) the Administrator determines that cash contributions are permissible under Section 423 of the Code or (iii) for Participants participating in the Non-423 Component.

(g) At the time the option is exercised, in whole or in part, or at the time some or all of the Common Stock issued under the Plan is disposed of (or any other time that a taxable event related to the Plan occurs), the Participant must make adequate provision for the

Company's or Employer's federal, state, local or any other tax liability payable to any authority including taxes imposed by jurisdictions outside of the U.S., national insurance, social security or other tax withholding obligations, if any, which arise upon the exercise of the option or the disposition of the Common Stock (or any other time that a taxable event related to the Plan occurs). At any time, the Company or the Employer may, but will not be obligated to, withhold from the Participant's compensation the amount necessary for the Company or the Employer to meet applicable withholding obligations, including any withholding required to make available to the Company or the Employer any tax deductions or benefits attributable to sale or early disposition of Common Stock by the Eligible Employee. In addition, the Company or the Employer may, but will not be obligated to, withhold from the proceeds of the sale of Common Stock or any other method of withholding the Company or the Employer deems appropriate to the extent permitted by U.S. Treasury Regulation Section 1.423-2(f).

7. Grant of Option. On the Enrollment Date of each Offering Period, each Eligible Employee participating in such Offering Period will be granted an option to purchase on each Exercise Date during such Offering Period (at the applicable Purchase Price) up to a number of shares of Common Stock determined by dividing such Eligible Employee's Contributions accumulated prior to such Exercise Date and retained in the Eligible Employee's account as of the Exercise Date by the applicable Purchase Price; provided that, unless and until otherwise determined by the Administrator, in no event will an Eligible Employee be permitted to purchase during each Purchase Period more than 5,000 shares of Common Stock (subject to any adjustment pursuant to Section 19) and provided further that such purchase will be subject to the limitations set forth in Sections 3(d) and 13. The Eligible Employee may accept the grant of such option by electing to participate in the Plan in accordance with the requirements of Section 5. The Administrator may, for future Offering Periods, increase or decrease, in its absolute discretion, the maximum number of shares of Common Stock that an Eligible Employee may purchase during each Purchase Period of an Offering Period. Exercise of the option will occur as provided in Section 8, unless the Participant has withdrawn pursuant to Section 10. The option will expire on the last day of the Offering Period.

8. Exercise of Option.

(a) Unless a Participant withdraws from the Plan as provided in Section 10, his or her option for the purchase of shares of Common Stock will be exercised automatically on the Exercise Date, and the maximum number of full shares subject to the option will be purchased for such Participant at the applicable Purchase Price with the accumulated Contributions from his or her account. No fractional shares of Common Stock will be purchased; any Contributions accumulated in a Participant's account, which are not sufficient to purchase a full share will be retained in the Participant's account for the subsequent Purchase Period or Offering Period, subject to earlier withdrawal by the Participant as provided in Section 10. Any other funds left over in a Participant's account after the Exercise Date will be returned to the Participant. During a Participant's lifetime, a Participant's option to purchase shares hereunder is exercisable only by him or her.

(b) If the Administrator determines that, on a given Exercise Date, the number of shares of Common Stock with respect to which options are to be exercised may exceed (i) the number of shares of Common Stock that were available for sale under the Plan on the Enrollment

Date of the applicable Offering Period, or (ii) the number of shares of Common Stock available for sale under the Plan on such Exercise Date, the Administrator may in its sole discretion (x) provide that the Company will make a pro rata allocation of the shares of Common Stock available for purchase on such Enrollment Date or Exercise Date, as applicable, in as uniform a manner as will be practicable and as it will determine in its sole discretion to be equitable among all Participants exercising options to purchase Common Stock on such Exercise Date, and continue all Offering Periods then in effect or (y) provide that the Company will make a pro rata allocation of the shares available for purchase on such Enrollment Date or Exercise Date, as applicable, in as uniform a manner as will be practicable and as it will determine in its sole discretion to be equitable among all participants exercising options to purchase Common Stock on such Exercise Date, and terminate any or all Offering Periods then in effect pursuant to Section 20. The Company may make a pro rata allocation of the shares available on the Enrollment Date of any applicable Offering Period pursuant to the preceding sentence, notwithstanding any authorization of additional shares for issuance under the Plan by the Company's stockholders subsequent to such Enrollment Date.

9. Delivery. As soon as reasonably practicable after each Exercise Date on which a purchase of shares of Common Stock occurs, the Company will arrange the delivery to each Participant of the shares purchased upon exercise of his or her option in a form determined by the Administrator (in its sole discretion) and pursuant to rules established by the Administrator. The Company may permit or require that shares be deposited directly with a broker designated by the Company or to a designated agent of the Company, and the Company may utilize electronic or automated methods of share transfer. The Company may require that shares be retained with such broker or agent for a designated period of time and/or may establish other procedures to permit tracking of disqualifying dispositions of such shares. No Participant will have any voting, dividend, or other stockholder rights with respect to shares of Common Stock subject to any option granted under the Plan until such shares have been purchased and delivered to the Participant as provided in this Section 9.

10. Withdrawal.

(a) A Participant may withdraw all but not less than all the Contributions credited to his or her account and not yet used to exercise his or her option under the Plan at any time by (i) submitting to the Company's stock administration office (or its designee) a written notice of withdrawal in the form determined by the Administrator for such purpose (which may be similar to the form attached hereto as Exhibit B), or (ii) following an electronic or other withdrawal procedure determined by the Administrator. All of the Participant's Contributions credited to his or her account will be paid to such Participant promptly after receipt of notice of withdrawal and such Participant's option for the Offering Period will be automatically terminated, and no further Contributions for the purchase of shares will be made for such Offering Period. If a Participant withdraws from an Offering Period, Contributions will not resume at the beginning of the succeeding Offering Period, unless the Participant re-enrolls in the Plan in accordance with the provisions of Section 5.

(b) A Participant's withdrawal from an Offering Period will not have any effect upon his or her eligibility to participate in any similar plan that may hereafter be adopted

by the Company or in succeeding Offering Periods that commence after the termination of the Offering Period from which the Participant withdraws.

11. Termination of Employment. Upon a Participant's ceasing to be an Eligible Employee for any reason, he or she will be deemed to have elected to withdraw from the Plan and the Contributions credited to such Participant's account during the Offering Period but not yet used to purchase shares of Common Stock under the Plan will be returned to such Participant or, in the case of his or her death, to the person or persons entitled thereto under Section 15, and such Participant's option will be automatically terminated. A Participant whose employment transfers between entities through a termination with an immediate rehire (with no break in service) by the Company or a Designated Company will not be treated as terminated under the Plan; however, if a Participant transfers from an Offering under the 423 Component to the Non-423 Component, the exercise of the option will be qualified under the 423 Component only to the extent it complies with Section 423 of the Code.

12. Interest. No interest will accrue on the Contributions of a participant in the Plan, except as may be required by Applicable Law, as determined by the Company, and if so required by the laws of a particular jurisdiction, will apply to all Participants in the relevant Offering under the 423 Component, except to the extent otherwise permitted by U.S. Treasury Regulation Section 1.423-2(f).

13. Stock.

(a) Subject to adjustment upon changes in capitalization of the Company as provided in Section 19 hereof, the maximum number of shares of Common Stock that will be made available for sale under the Plan will be shares of Common Stock. The number of shares of Common Stock available for issuance under the Plan will be increased on the first day of each Fiscal Year beginning with the first Fiscal Year in which the Plan becomes effective equal to the least of (i) shares of Common Stock, (ii) % of the outstanding shares of Common Stock on the last day of the immediately preceding Fiscal Year, or (iii) an amount determined by the Administrator.

(b) Until the shares of Common Stock are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), a Participant will have only the rights of an unsecured creditor with respect to such shares, and no right to vote or receive dividends or any other rights as a stockholder will exist with respect to such shares.

(c) Shares of Common Stock to be delivered to a Participant under the Plan will be registered in the name of the Participant or in the name of the Participant and his or her spouse.

14. Administration. The Plan will be administered by the Board or a Committee appointed by the Board, which Committee will be constituted to comply with Applicable Laws. The Administrator will have full and exclusive discretionary authority to construe, interpret and apply the terms of the Plan, to designate separate Offerings under the Plan, to designate Subsidiaries and Affiliates as participating in the 423 Component or Non-423 Component, to

determine eligibility, to adjudicate all disputed claims filed under the Plan and to establish such procedures that it deems necessary for the administration of the Plan (including, without limitation, to adopt such procedures and sub-plans as are necessary or appropriate to permit the participation in the Plan by employees who are foreign nationals or employed outside the U.S., the terms of which sub-plans may take precedence over other provisions of this Plan, with the exception of Section 13(a) hereof, but unless otherwise superseded by the terms of such sub-plan, the provisions of this Plan will govern the operation of such sub-plan). Unless otherwise determined by the Administrator, the Employees eligible to participate in each sub-plan will participate in a separate Offering or in the Non-423 Component. Without limiting the generality of the foregoing, the Administrator is specifically authorized to adopt rules and procedures regarding eligibility to participate, the definition of Compensation, handling of Contributions, making of Contributions to the Plan (including, without limitation, in forms other than payroll deductions), establishment of bank or trust accounts to hold Contributions, payment of interest, conversion of local currency, obligations to pay payroll tax, determination of beneficiary designation requirements, withholding procedures and handling of stock certificates that vary with applicable local requirements. The Administrator also is authorized to determine that, to the extent permitted by U.S. Treasury Regulation Section 1.423-2(f), the terms of an option granted under the Plan or an Offering to citizens or residents of a non-U.S. jurisdiction will be less favorable than the terms of options granted under the Plan or the same Offering to employees resident solely in the U.S. Every finding, decision and determination made by the Administrator will, to the full extent permitted by law, be final and binding upon all parties.

15. Designation of Beneficiary.

(a) If permitted by the Administrator, a Participant may file a designation of a beneficiary who is to receive any shares of Common Stock and cash, if any, from the Participant's account under the Plan in the event of such Participant's death subsequent to an Exercise Date on which the option is exercised but prior to delivery to such Participant of such shares and cash. In addition, if permitted by the Administrator, a Participant may file a designation of a beneficiary who is to receive any cash from the Participant's account under the Plan in the event of such Participant's death prior to exercise of the option. If a Participant is married and the designated beneficiary is not the spouse, spousal consent will be required for such designation to be effective.

(b) Such designation of beneficiary may be changed by the Participant at any time by notice in a form determined by the Administrator. In the event of the death of a Participant and in the absence of a beneficiary validly designated under the Plan who is living at the time of such Participant's death, the Company will deliver such shares and/or cash to the executor or administrator of the estate of the Participant, or if no such executor or administrator has been appointed (to the knowledge of the Company), the Company, in its discretion, may deliver such shares and/or cash to the spouse or to any one or more dependents or relatives of the Participant, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate.

(c) All beneficiary designations will be in such form and manner as the Administrator may designate from time to time. Notwithstanding Sections 15(a) and (b) above, the Company and/or the Administrator may decide not to permit such designations by

Participants in non-U.S. jurisdictions to the extent permitted by U.S. Treasury Regulation Section 1.423-2(f).

16. Transferability. Neither Contributions credited to a Participant's account nor any rights with regard to the exercise of an option or to receive shares of Common Stock under the Plan may be assigned, transferred, pledged or otherwise disposed of in any way (other than by will, the laws of descent and distribution or as provided in Section 15 hereof) by the Participant. Any such attempt at assignment, transfer, pledge or other disposition will be without effect, except that the Company may treat such act as an election to withdraw funds from an Offering Period in accordance with Section 10 hereof.

17. Use of Funds. The Company may use all Contributions received or held by it under the Plan for any corporate purpose, and the Company will not be obligated to segregate such Contributions except under Offerings or for Participants in the Non-423 Component for which Applicable Laws require that Contributions to the Plan by Participants be segregated from the Company's general corporate funds and/or deposited with an independent third party. Until shares of Common Stock are issued, Participants will have only the rights of an unsecured creditor with respect to such shares.

18. Reports. Individual accounts will be maintained for each Participant in the Plan. Statements of account will be given to participating Eligible Employees at least annually, which statements will set forth the amounts of Contributions, the Purchase Price, the number of shares of Common Stock purchased and the remaining cash balance, if any.

19. Adjustments, Dissolution, Liquidation, Merger or Change in Control.

(a) Adjustments. In the event that any dividend or other distribution (whether in the form of cash, Common Stock, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Common Stock or other securities of the Company, or other change in the corporate structure of the Company affecting the Common Stock occurs, the Administrator, in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan, will, in such manner as it may deem equitable, adjust the number and class of Common Stock that may be delivered under the Plan, the Purchase Price per share and the number of shares of Common Stock covered by each option under the Plan that has not yet been exercised, and the numerical limits of Sections 7 and 13.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, any Offering Period then in progress will be shortened by setting a New Exercise Date, and will terminate immediately prior to the consummation of such proposed dissolution or liquidation, unless provided otherwise by the Administrator. The New Exercise Date will be before the date of the Company's proposed dissolution or liquidation. The Administrator will notify each Participant in writing or electronically, prior to the New Exercise Date, that the Exercise Date for the Participant's option has been changed to the New Exercise Date and that the Participant's option will be exercised automatically on the New Exercise Date, unless prior to such date the Participant has withdrawn from the Offering Period as provided in Section 10 hereof.

(c) Merger or Change in Control. In the event of a merger or Change in Control, each outstanding option will be assumed or an equivalent option substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. In the event that the successor corporation refuses to assume or substitute for the option, the Offering Period with respect to which such option relates will be shortened by setting a New Exercise Date on which such Offering Period will end. The New Exercise Date will occur before the date of the Company's proposed merger or Change in Control. The Administrator will notify each Participant in writing or electronically prior to the New Exercise Date, that the Exercise Date for the Participant's option has been changed to the New Exercise Date and that the Participant's option will be exercised automatically on the New Exercise Date, unless prior to such date the Participant has withdrawn from the Offering Period as provided in Section 10 hereof.

20. Amendment or Termination.

(a) The Administrator, in its sole discretion, may amend, suspend, or terminate the Plan, or any part thereof, at any time and for any reason. If the Plan is terminated, the Administrator, in its discretion, may elect to terminate all outstanding Offering Periods either immediately or upon completion of the purchase of shares of Common Stock on the next Exercise Date (which may be sooner than originally scheduled, if determined by the Administrator in its discretion), or may elect to permit Offering Periods to expire in accordance with their terms (and subject to any adjustment pursuant to Section 19). If the Offering Periods are terminated prior to expiration, all amounts then credited to Participants' accounts that have not been used to purchase shares of Common Stock will be returned to the Participants (without interest thereon, except as otherwise required under Applicable Laws, as further set forth in Section 12 hereof) as soon as administratively practicable.

(b) Without stockholder consent and without limiting Section 20(a), the Administrator will be entitled to change the Offering Periods or Purchase Periods, designate separate Offerings, limit the frequency and/or number of changes in the amount withheld during an Offering Period, establish the exchange ratio applicable to amounts withheld in a currency other than U.S. dollars, permit Contributions in excess of the amount designated by a Participant in order to adjust for delays or mistakes in the Company's processing of properly completed Contribution elections, establish reasonable waiting and adjustment periods and/or accounting and crediting procedures to ensure that amounts applied toward the purchase of Common Stock for each Participant properly correspond with Contribution amounts, and establish such other limitations or procedures as the Administrator determines in its sole discretion advisable that are consistent with the Plan.

(c) In the event the Administrator determines that the ongoing operation of the Plan may result in unfavorable financial accounting consequences, the Administrator may, in its discretion and, to the extent necessary or desirable, modify, amend or terminate the Plan to reduce or eliminate such accounting consequence including, but not limited to:

(i) amending the Plan to conform with the safe harbor definition under the Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto), including with respect to an Offering Period underway at the time;

(ii) altering the Purchase Price for any Offering Period or Purchase Period including an Offering Period or Purchase Period underway at the time of the change in Purchase Price;

(iii) shortening any Offering Period or Purchase Period by setting a New Exercise Date, including an Offering Period or Purchase Period underway at the time of the Administrator action;

(iv) reducing the maximum percentage of Compensation a Participant may elect to set aside as Contributions; and

(v) reducing the maximum number of Shares a Participant may purchase during any Offering Period or Purchase Period.

Such modifications or amendments will not require stockholder approval or the consent of any Participants.

21. Notices. All notices or other communications by a Participant to the Company under or in connection with the Plan will be deemed to have been duly given when received in the form and manner specified by the Company at the location, or by the person, designated by the Company for the receipt thereof.

22. Conditions Upon Issuance of Shares. Shares of Common Stock will not be issued with respect to an option unless the exercise of such option and the issuance and delivery of such shares pursuant thereto will comply with all applicable provisions of law, domestic or foreign, including, without limitation, the U.S. Securities Act of 1933, as amended, the Exchange Act, the rules and regulations promulgated thereunder, and the requirements of any stock exchange upon which the shares may then be listed, and will be further subject to the approval of counsel for the Company with respect to such compliance.

As a condition to the exercise of an option, the Company may require the person exercising such option to represent and warrant at the time of any such exercise that the shares are being purchased only for investment and without any present intention to sell or distribute such shares if, in the opinion of counsel for the Company, such a representation is required by any of the aforementioned applicable provisions of law.

23. Code Section 409A. The 423 Component of the Plan is exempt from the application of Code Section 409A and any ambiguities herein will be interpreted to so be exempt from Code Section 409A. In furtherance of the foregoing and notwithstanding any provision in the Plan to the contrary, if the Administrator determines that an option granted under the Plan may be subject to Code Section 409A or that any provision in the Plan would cause an option under the Plan to be subject to Code Section 409A, the Administrator may amend the terms of the Plan and/or of an outstanding option granted under the Plan, or take such other action the Administrator determines is necessary or appropriate, in each case, without the Participant's consent, to exempt any outstanding option or future option that may be granted under the Plan from or to allow any such options to comply with Code Section 409A, but only to the extent any such amendments or action by the Administrator would not violate Code Section 409A. Notwithstanding the foregoing, the Company will have no liability to a Participant or any other

party if the option to purchase Common Stock under the Plan that is intended to be exempt from or compliant with Code Section 409A is not so exempt or compliant or for any action taken by the Administrator with respect thereto. The Company makes no representation that the option to purchase Common Stock under the Plan is compliant with Code Section 409A.

24. Term of Plan. The Plan will become effective upon the earlier to occur of its adoption by the Board or its approval by the stockholders of the Company. It will continue in effect for a term of twenty (20) years, unless sooner terminated under Section 20.

25. Stockholder Approval. The Plan will be subject to approval by the stockholders of the Company within twelve (12) months after the date the Plan is adopted by the Board. Such stockholder approval will be obtained in the manner and to the degree required under Applicable Laws.

26. Governing Law. The Plan will be governed by, and construed in accordance with, the laws of the State of California (except its choice-of-law provisions).

27. No Right to Employment. Participation in the Plan by a Participant will not be construed as giving a Participant the right to be retained as an employee of the Company or a Subsidiary or Affiliate, as applicable. Furthermore, the Company or a Subsidiary or Affiliate may dismiss a Participant from employment at any time, free from any liability or any claim under the Plan.

28. Severability. If any provision of the Plan is or becomes or is deemed to be invalid, illegal, or unenforceable for any reason in any jurisdiction or as to any Participant, such invalidity, illegality or unenforceability will not affect the remaining parts of the Plan, and the Plan will be construed and enforced as to such jurisdiction or Participant as if the invalid, illegal or unenforceable provision had not been included.

29. Compliance with Applicable Laws. The terms of this Plan are intended to comply with all Applicable Laws and will be construed accordingly.

**EXHIBIT A**

**CAPNIA, INC.**

**2014 EMPLOYEE STOCK PURCHASE PLAN**

**SUBSCRIPTION AGREEMENT**

_____ Original Application Offering Date:_____
_____ Change in Payroll Deduction Rate

1. _____hereby elects to participate in the Capnia, Inc. 2014 Employee Stock Purchase Plan (the "Plan") and subscribes to purchase shares of the Company's Common Stock in accordance with this Subscription Agreement and the Plan.

2. I hereby authorize payroll deductions from each paycheck in the amount of _____% of my Compensation on each payday (from 0 to [__]%) during the Offering Period in accordance with the Plan. (Please note that no fractional percentages are permitted.)

3. I understand that said payroll deductions will be accumulated for the purchase of shares of Common Stock at the applicable Purchase Price determined in accordance with the Plan. I understand that if I do not withdraw from an Offering Period, any accumulated payroll deductions will be used to automatically exercise my option and purchase Common Stock under the Plan.

4. I have received a copy of the complete Plan and its accompanying prospectus. I understand that my participation in the Plan is in all respects subject to the terms of the Plan.

5. Shares of Common Stock purchased for me under the Plan should be issued in the name(s) of _____ (Eligible Employee or Eligible Employee and Spouse only).

6. I understand that if I dispose of any shares received by me pursuant to the Plan within two (2) years after the Offering Date (the first day of the Offering Period during which I purchased such shares) or one (1) year after the Exercise Date, I will be treated for federal income tax purposes as having received ordinary income at the time of such disposition in an amount equal to the excess of the fair market value of the shares at the time such shares were purchased by me over the price that I paid for the shares. I hereby agree to notify the Company in writing within thirty (30) days after the date of any disposition of my shares and I will make adequate provision for federal, state or other tax withholding obligations, if any, which arise upon the disposition of the Common Stock. The Company may, but will not be obligated to, withhold from my compensation the amount necessary to meet any applicable withholding obligation including any withholding necessary to make available to the Company any tax deductions or benefits attributable to sale or early disposition of Common Stock by me. If I dispose of such shares at any time after the expiration of the two (2) year and one (1) year holding periods, I understand that I will be treated for federal income tax purposes as having

received income only at the time of such disposition, and that such income will be taxed as ordinary income only to the extent of an amount equal to the lesser of (a) the excess of the fair market value of the shares at the time of such disposition over the purchase price which I paid for the shares, or (b) 15% of the fair market value of the shares on the first day of the Offering Period. The remainder of the gain, if any, recognized on such disposition will be taxed as capital gain.

7. I hereby agree to be bound by the terms of the Plan. The effectiveness of this Subscription Agreement is dependent upon my eligibility to participate in the Plan.

Employee's [Social Security Number]: _____

Employee's Address: _____

_____

_____

I UNDERSTAND THAT THIS SUBSCRIPTION AGREEMENT WILL REMAIN IN EFFECT THROUGHOUT SUCCESSIVE OFFERING PERIODS UNLESS TERMINATED BY ME.

Dated: _____ _____

Signature of Employee

**EXHIBIT B**

**CAPNIA, INC.**

**2014 EMPLOYEE STOCK PURCHASE PLAN**

**NOTICE OF WITHDRAWAL**

The undersigned Participant in the Offering Period of the Capnia, Inc. 2014 Employee Stock Purchase Plan that began on _____, _____ (the "Offering Date") hereby notifies the Company that he or she hereby withdraws from the Offering Period. He or she hereby directs the Company to pay to the undersigned as promptly as practicable all the payroll deductions credited to his or her account with respect to such Offering Period. The undersigned understands and agrees that his or her option for such Offering Period will be terminated automatically. The undersigned understands further that no further payroll deductions will be made for the purchase of shares in the current Offering Period and the undersigned will be eligible to participate in succeeding Offering Periods only by delivering to the Company a new Subscription Agreement.

Name and Address of Participant:

_____

_____

_____

Signature:

_____

Date: _____

**Exhibit 10.19**

CONSENT TO SUBLEASE

This Consent to Sublease ("**Consent**") is dated for reference purposes the 23rd day of May, 2014 and is entered into by and among Capnia, Inc., a Delaware corporation ("**Tenant**"), Silicon Valley Finance Group, a Delaware corporation ("**Subtenant**") and The Realty Associates Fund VII, L.P., a Delaware limited partnership ("**Landlord**"), with reference to the following recitals:

RECITALS

A. Landlord and Tenant are the parties to that certain lease (the "**Master Lease**") respecting certain premises commonly known as Suite 160 ("**Premises**") and located at 3 Twin Dolphin Drive, Redwood Shores, CA (the "**Building**").

B. Tenant and Subtenant wish to enter into the sublease (the "**Sublease**") respecting the portion of the Premises described in the Sublease (the "**Sublease Premises**").

C. The Master Lease provides that Tenant may not enter into any sublease without Landlord's prior written approval, and Landlord is willing to approve the Sublease on the following terms and conditions.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. Sublease. Tenant and Subtenant hereby represent that a true and complete copy of the Sublease is attached hereto as Exhibit A and incorporated herein by this reference, and Tenant and Subtenant agree that the Sublease shall not be modified without Landlord's prior written consent; provided, however, that no further Landlord consent shall be required in connection with any exercise by Subtenant of its option to extend the Sublease term as provided in the Sublease.

2. Landlord and Tenant Liability. Neither the Master Lease, the Sublease nor this Consent shall be deemed to grant Subtenant any rights whatsoever against Landlord. Landlord is not a party to the Sublease and shall have no liability to Tenant, Subtenant or any broker based on or arising out of the Sublease. Subtenant hereby acknowledges and agrees that its sole remedy for any alleged or actual breach of its rights in connection with the Sublease Premises shall be solely against Tenant. This Consent shall not release Tenant from any existing or future duty, obligation or liability to Landlord pursuant to the Master Lease, nor shall this Consent change, modify or amend the Master Lease in any way. This consent shall not be deemed Landlord's consent to any further subleases, and the Sublease may not be amended without Landlord's consent, which shall not be unreasonably withheld; provided, however, that no further Landlord consent shall be required in connection with any exercise by Subtenant of its option to extend the Sublease term as provided in the Sublease.

3. Attornment.

(a) In the event of Master Lease Termination (as hereinafter defined) prior to the termination of the Sublease, at Landlord's option, Subtenant agrees to attorn to Landlord and to recognize Landlord as Subtenant's landlord under the Sublease, upon the terms and conditions and at the rental rate specified in the Sublease, and for the then remaining term of the Sublease, except that Landlord shall not be bound by any provision of the Sublease which in any way increases Landlord's duties, obligations or liabilities to Subtenant beyond those owed to Tenant under the Master Lease. Subtenant agrees to execute and deliver at any time and from time to time, upon request of Landlord, any instruments which may be necessary or appropriate to evidence such attornment. Landlord shall not (i) be liable to Subtenant for any act, omission or breach of the Sublease by Tenant, (ii) be subject to any offsets or defenses which Subtenant might have against Tenant, (iii) be bound by any rent or additional rent which Subtenant might have paid in advance to Tenant, (iv) be bound to honor any rights of Subtenant in any security deposit made with Tenant except to the extent Tenant has turned over such security deposit to Landlord, (v) be obligated in any manner with respect to the transfer, delivery, use or condition of any furniture, equipment or other personal property in the Sublease Premises which Tenant agreed would be transferred to Subtenant or which Tenant agreed could be used by the Subtenant during the term of the Sublease or (vi) be liable for the payment of any improvement allowance or to otherwise modify the Sublease Premises. Tenant hereby agrees that in the event of Master Lease Termination, Tenant shall immediately pay or transfer to Landlord any security deposit, rent or other sums then held by Tenant. Landlord shall have the right, in Landlord's sole discretion, to elect not to have Subtenant attorn to Landlord and, in this event, the Sublease shall be deemed terminated on the date of Master Lease Termination and, Landlord shall have no obligation to permit Subtenant to continue to occupy the Premises.

(b) "**Master Lease Termination**" means any event, which by voluntary or involuntary act or by operation of law, might cause or permit the Master Lease to be terminated, expired, be cancelled, be foreclosed against, or otherwise come to an end, including but not limited to (i) a default by Tenant under the Master Lease of any of the terms or provisions thereof; (ii) foreclosure proceedings brought by the holder of any mortgage or trust deed to which the Master Lease is subject; or (iii) the termination of Tenant's leasehold estate by dispossession proceeding or otherwise.

(c) In the event of attornment hereunder, Landlord's liability shall be limited to matters arising during Landlord's ownership of the Building, and in the event that Landlord (or any successor owner) shall convey or dispose of the Building to another party, such party shall thereupon be and become landlord hereunder and shall be deemed to have fully

assumed and be liable for all obligations of this Consent or the Sublease to be performed by Landlord which first arise after the date of conveyance, including the return of any security deposit, and Subtenant shall attorn to such other party, and Landlord (or such successor owner) shall, from and after the date of conveyance, be free of all liabilities and obligations hereunder not then incurred. The liability of Landlord to Subtenant for any default by landlord under this Consent or the Sublease after such attornment, or arising in connection with Landlord's operation, management, leasing, repair, renovation, alteration, or any other matter relating to the Building or the Sublease Premises, shall be limited to the interest of the Landlord in the Building (and proceeds thereof). Under no circumstances shall any present or future employee, officer, agent, partner or member of Landlord have any personal liability for the performance of Landlord's obligations under this Consent.

4. Payment of Rent by Subtenant. In addition to Landlord's rights under Section 3 hereof, in the event Tenant is in default under any of the terms and provisions of the Master Lease, Landlord may elect to receive directly from Subtenant all sums due or payable to Tenant by Subtenant pursuant to the Sublease, and upon receipt of Landlord's notice, Subtenant shall thereafter pay to Landlord any and all sums becoming due or payable under the Sublease and Tenant shall receive from Landlord a corresponding credit for such sums against any payments then due or thereafter becoming due from Tenant. Neither the service of such written notice nor the receipt of such direct payments shall cause Landlord to assume any of Tenant's duties, obligations and/or liabilities under the Sublease, nor shall such event impose upon Landlord the duty or obligation to honor the Sublease, nor subsequently to accept Subtenant's attornment pursuant to Section 3(a) hereof.

5. Subtenant Acknowledgement. Subtenant hereby acknowledges that it has read and has knowledge of all of the terms, provisions, rules and regulations of the Master Lease and agrees not to do or omit to do anything which would cause Tenant to be in breach of the Master Lease. Any such act or omission shall also constitute a breach of this Consent and shall entitle Landlord to recover any damage, loss, cost or expense which it thereby suffers, from Subtenant, whether or not Landlord proceeds against Tenant. Subtenant hereby assumes and agrees to perform for Landlord's benefit all of the indemnity and insurance obligations of the Tenant under the Master Lease with respect to the Sublease Premises, provided that the foregoing shall not be construed as relieving or releasing Tenant from any such obligations. Prior to entering the Sublease Premises, Subtenant shall deliver to Landlord certificates of insurance and an endorsement adding Landlord as an additional insured all as more particularly required by the insurance provisions of the Master Lease. Subtenant shall not further sublease the Sublease Premises, assign its interest as the Subtenant under the Sublease or otherwise transfer its interest in the Sublease Premises or the Sublease to any person or entity without the written consent of Landlord.

6. Parking and Services. Any parking rights granted to Subtenant pursuant to the Sublease shall be satisfied out of the parking rights, if any, granted to Tenant under the Master Lease. Tenant hereby authorizes Subtenant, as agent for Tenant, to obtain services and materials for or related to the Sublease Premises, and Tenant agrees to pay for such services and materials as additional rent under the Master Lease upon written demand from Landlord. However, as a convenience to Tenant, Landlord shall have the right, but not the obligation, to bill Subtenant directly for such services and materials, or any portion thereof, in which event Subtenant shall pay for the services and materials so billed upon written demand, provided that such billing shall not relieve Tenant from its primary obligation to pay for such services and materials.

7. Notices. Landlord may deliver notices to Subtenant at the Sublease Premises in the same manner as Landlord is entitled to deliver notices to Tenant pursuant to the Master Lease. If Tenant is subleasing the entire Premises or otherwise vacating the Premises, Tenant's new address for notices to Tenant under the Master Lease shall be as follows: 3 Twin Dolphin Drive, Suite 160, Redwood Shores; and if no address is filled in at the preceding blank (or if a post office box address is used for the preceding blank), then Landlord may continue to send notices to Tenant at the address(es) provided in, and in accordance with the terms of, the Master Lease.

8. Reimbursement of Costs. As a condition to the effectiveness of Landlord's consent to the Sublease, Tenant agrees to pay Landlord concurrently with Tenant's delivery of an executed counterpart hereof, (i) $500.00 to compensate Landlord for its internal administrative costs in processing this Consent; plus (ii) Landlord's reasonable attorneys' fees incurred in connection with this Consent; both of which shall be additional rent. Landlord's acceptance of such fee shall impose no duty on Landlord to approve the Sublease. Tenant shall also promptly pay Landlord any share of bonus rents, or other items required under the Master Lease in connection with subleases.

9. Generally. This Consent shall be binding upon and inure to the benefit of the parties' respective successors and assigns, subject to all agreements and restrictions contained in the Master Lease, the Sublease and herein with respect to subleasing, assignment, or other transfer. The agreements contained herein constitute the entire understanding between the parties with respect to the subject matter hereof, and supersede all prior agreements, written or oral, inconsistent herewith. This Consent may be amended only in writing, signed by all parties hereto. Each party to this Agreement represents hereby that the individual signing this Consent on its behalf has the authority to execute and deliver the same on behalf of the party hereto for which such signatory is acting. In the event of any litigation between the parties hereto with respect to the subject matter hereof, the unsuccessful party agrees to pay the successful party all costs, expenses and reasonable attorney's fees incurred therein by the successful party, which shall be included as a part of the judgment therein rendered.

10. Counterpart Copies; Electronic Signatures. This Consent and any documents or addenda attached hereto may be executed in two or more counterpart copies, each of which shall be deemed to be an original and all of which counterparts shall have the same force and effect as if the parties hereto had executed a single copy of this Consent or the attached document or addenda. The parties acknowledge and agree that notwithstanding any law or presumption to the contrary, Landlord shall have the right to execute this Consent and any documents and addenda attached to this Consent using

an electronic signature, and Landlord's electronic signature shall be deemed valid and binding and admissible by any party against the other as if same were an original ink signature. If Landlord executes this Consent or any documents or addenda attached to this Consent using an electronic signature, Landlord's electronic signature will appear in Landlord's signature block. An email from Landlord, its agents, brokers, attorneys, employees or other representatives shall never constitute Landlord's electronic signature or be otherwise binding on Landlord. Neither Tenant nor Subtenant shall have the right to execute this Consent or any documents or addenda attached hereto using an electronic signature, and Tenant and Subtenant shall execute this Consent and any documents or addenda attached hereto using an original ink signature.

11. Use; Waiver of Subrogation. . Landlord agrees that the releases and waivers set forth in Section 8.4 of the Lease shall apply as between Landlord and Subtenant. Landlord further consents to Subtenant's use of the Subleased Premises for general office, light assembly and other related legal uses, subject to and in compliance with the terms of the Master Lease.

IN WITNESS WHEREOF, the following parties have executed this Consent as of the date first above written.

LANDLORD:

[SEE ATTACHED]

TENANT:

Silicon Valley Finance Group, a Delaware corporation

By: /s/ Jan Reed

Jan Reed
(print name)

Its: CEO
(print title)

SUBTENANT:

Capnia, Inc., a Delaware corporation

By: /s/ Anish Bhatnagar

Anish Bhatnagar
(print name)

Its: CEO
(print title)

The Realty Associates Fund VII, L.P.
a Delaware limited partnership

By: Realty Associates Fund VII, LLC
Its General Partner

By: Realty Associates Advisors LLC, its Manager

By: Realty Associates Advisors Trust,
Its Manager

By: /s/ Scott Amling Scott Amling, Regional Director, May 29 2014 11:01AM
Officer

Exhibit A

(Copy of Sublease)

# Sublease

**Sublessor:** Silicon Valley Finance Group, a Delaware corporation

**Subleased Premises:** 3 Twin Dolphin Drive, Suite 160 Redwood Shores, CA

**Sublessee:** Capnia, Inc., a Delaware corporation

**Date:** May 20, 2014

**1. Parties:**

This Sublease is made and entered into as of May 5, 2014, by and between Silicon Valley Finance Group, a Delaware corporation ("Sublessor"), and Capnia, Inc., a Delaware corporation ("Sublessee"), under the Master Lease dated March 6, 2013, between The Realty Associates Fund VII, L.P., a Delaware limited partnership, (sometimes referred to herein as "Lessor", "Master Lessor" or "Master Landlord") and Sublessor under this Sublease as (Lessee). A copy of the Master Lease is attached hereto as Exhibit "A" and incorporated herein by this reference.

**2. Provisions Constituting Sublease:**

2.1 This Sublease is subject to all of the terms and conditions of the Master Lease. Sublessee hereby assumes and agrees to perform all of the obligations of Lessee under the Master Lease, as incorporated herein, to the extent said obligations apply to the Subleased Premises and Sublessee's use of the common areas, except as specifically set forth herein. Sublessor hereby agrees to exercise due diligence to cause Lessor, under the Master Lease, to perform all of the obligations of Lessor thereunder to the extent said obligations apply to the Subleased Premises and Sublessee's use of the common areas. Sublessee shall not commit or permit to be committed on the Subleased Premises or on any other portion of the Project any act or omission which violates any term or condition of the Master Lease. Except to the extent waived or consented to in writing by the other party or parties hereto who are affected thereby, neither of the parties hereto will, by renegotiation of the Master Lease, assignment, subletting, default or any other voluntary action, avoid or seek to avoid the observance or performance of the terms to be observed or performed hereunder by such party but, will at all times, in good faith assist in carrying out all the terms of this Sublease and in taking all such action as may be necessary or appropriate to protect the rights of the other party or parties hereto who are affected thereby against impairment. Nothing contained in this Section 2.1 or elsewhere in this Sublease shall prevent or prohibit Sublessor (a) from exercising its right to terminate the Master Lease pursuant to the terms thereof or (b) from assigning its interest in this Sublease or subletting the Premises to any other third party; provided, however, that Sublessor agrees that it shall not terminate the Master Lease, except pursuant to the terms thereof, or amend or modify the Master Lease in any manner that adversely affects Sublessee or Sublessee's rights and obligations under this Sublease, without Sublessee's prior approval which approval may be withheld in Sublessee's sole discretion. Regardless, if the Master Lease gives Sublessor any right to terminate the Master Lease in the event of the partial or total damage, destruction, or condemnation of the



Master Premises or the building or project of which the Master Premises are a part, the exercise of this right by Sublessor will not constitute a default or breach. If the Master Lease terminates as a result of a breach or default by Sublessee under this Sublease, the Sublesee will be liable to the Sublessor for the damage suffered as a result of the termination. If the Master Lease terminates at the option of the Master Landlord, this Sublease will terminate and the parties will be relieved of any further liability or obligation under this Sublease, unless such termination is due to Sublessor's breach of the Master Lease.

2.2 All of the terms and conditions contained in the Master Lease are incorporated herein, except as specifically provided below, and shall together with the terms and conditions specifically set forth in this Sublease constitute the complete terms and conditions of this Sublease, with references in such incorporated provisions to "Lease", "Landlord", "Tenant" and "Premises" deemed to refer to this Sublease, Sublessor, Sublessee and the Subleased Premises, respectively. The following paragraphs of the Master Lease shall not be included in this Sublease: Basic Lease Provisions (other than Sections 1.4, 1.8, 1.14, 1.16, 1.17, 1.18 and 1.19), Sections 3, 4.1, 17, 41, 50 and Exhibit D. Exhibit C of the Master Lease is included in this Sublease. References in the Master Lease, as incorporated herein, to "Base Year" shall mean 2014 and references to "Landlord" in the definitions of "Operating Expenses" shall mean Master Lessor. In addition, Sublessor and Sublessee agree that, as between Sublessor and Sublessee, the sale or transfer of Sublessee's capital stock shall not be deemed a Transfer of this Sublease. In the event of a conflict between the provisions of this Sublease and the Master Lease, as between Sublessor and Sublessee, the provisions of this Sublease shall control.

**3. Premises:**

Sublessor leases to Sublessee and Sublessee leases from Sublessor the Subleased Premises upon all of the terms, covenants and conditions contained in this Sublease. The Subleased Premises consist of approximately 6,033± square feet, located at 3 Twin Dolphin Drive, Suite 160 Redwood Shores, CA, as shown and described in Exhibit A of the Master Lease.

**4. Rent:**

Upon execution of this Agreement, Sublessee shall pay to Sublessor as Rent for the Subleased Premises the sum of Eighteen Thousand Ninety Nine and 00/100 Dollars ($18,099.00), representing the first month's rent and a sum of Seventy Two Thousand Three Hundred Ninety Six and 00/100 Dollars ($72,396.00), representing prepaid rent for the last four months of the initial lease term, from February 2015 through May 2015 (the "Prepaid Rent"). Thereafter, rent shall be $18,099.00 per month.

The rental amount shall be paid, without deductions, offset, prior notice or demand. If the commencement date or the termination date of the Sublease occurs on a date other than the first day or the last day, respectively, of a calendar month, then the Rent for such partial month shall be prorated and the prorated Rent shall be payable on the Sublease commencement date or on the first day of the

calendar month in which the Sublease termination date occurs, respectively. The Prepaid Rent shall be automatically applied to Rent for the last four (4) months of the Sublease term. If this Sublease is terminated for any reason other than a default by Sublessee, then the unapplied balance of the Prepaid Rent shall immediately be paid by Sublessor to Sublessee.

**5. Security Deposit:**

Upon execution of this Agreement, Sublessee shall pay to Sublessor an equivalent of one month's rent as a noninterest bearing Security Deposit. In the event Sublessee has performed all of the terms and conditions of this Sublease during the term hereof, Sublessor shall return to Sublessee, within thirty (30) days after Sublessee has vacated the Subleased Premises, the Security Deposit less any sums due and owing to Sublessor. The Security Deposit shall be governed by Section 5 of the Master Lease, as incorporated herein.

**6. Late Charge:**

The rental amount shall be paid on or before the first day of the month. Sublessee shall be assessed and immediately pay a late fee equal to 6%_on any amount owing under this agreement that is not received by Sublessor when such amount shall be due; and Sublessee shall make such payment without any requirement for notice or demand to Sublessor. The parties hereby agree that such late charge represents a fair and reasonable estimate of the costs Sublessor will incur by reason of late payment by Sublessor. Sublessee shall also be charged a rate of 1.5% per month or the maximum rate permitted by law.

**7. Rights of Access and Use:**

Sublessee shall use the Subleased Premises only for general office and other related legal uses, subject to and only as permitted in the Master Lease or otherwise approved by Master Landlord.

**8. Sublease Term:**

8.1 Sublease Term:

The Sublease Term shall be for the period commencing on June 1, 2014,, or when Master Landlord consents to this Sublease (if consent is required under the Master Lease), whichever occurs later, and continuing through May 31, 2015. In no event shall the Sublease Term extend beyond the Term of the Master Lease. Sublessee's obligations with respect to the surrender of the Subleased Premises at the expiration or earlier termination of the Sublease Term shall be fulfilled if Sublessee surrenders possession of the Subleased Premises in accordance with the Master Lease and in the condition existing at the Sublease commencement date, ordinary wear and tear and casualty, excepted.

8.2 Inability to Deliver Possession:

## Sublease

In the event Sublessor is unable to deliver possession of the Subleased Premises at the commencement of the term, Sublessor shall not be liable for any damage caused thereby nor shall this Sublease be void or voidable, but Sublessee shall not be liable for Rent until such time as Sublessor offers to deliver possession of the Subleased Premises to Sublessee, but the term hereof shall not be extended by such delay. Sublessee shall have the right to access the Subleased Premises from and after May 29, 2014 solely for purposes of installing cabling, furniture and equipment and otherwise preparing the Subleased Premises for occupancy (but not for the conduct of business), provided, that, such access shall be subject to all the covenants and conditions hereof, excluding the obligation to pay Rent. In the event Sublessor has been unable to deliver possession of the Subleased Premises within 30 days from the commencement date, Sublessee, at Sublessee's option, may give written notice to Sublessor to terminate this Sublease.

**9. Option to Renew:**

Sublessor shall provide Sublessee with one (1) option to renew the Sublease for the remainder of the Master Lease term, which expires June 30, 2018. Sublessee shall provide no less than three (3) months' prior written notice of its intention to extend the sublease. The rent for the option period shall be 95% of fair market value.

**10. Tenant Improvements:**

Sublessee shall accept the Premises in its current "As-is" condition.

**11. Furniture, Fixtures and Equipment:**

Sublessee shall have the right to use during the Term the office furnishings within the Subleased Premises which are identified on Exhibit "C" attached hereto (the "Furniture") at no additional cost to Sublessee. The Furniture is provided in its "AS IS, WHERE IS" condition, without representation or warranty whatsoever. Sublessee shall insure the Furniture under the property insurance policy required under the Master Lease, as incorporated herein. Sublessee shall maintain the Furniture in good condition and repair, reasonable wear and tear excepted, and shall be responsible for any loss or damage to the same occurring during the Term. Sublessee shall surrender the Furniture to Sublessor upon the termination of this Sublease in the same condition as exists as of the Commencement Date, reasonable wear and tear excepted. Sublessee shall not remove any of the Furniture from the Subleased Premises.

**12. Excess Usage by Sublessee:**

Sublessee shall be responsible for any excess usage of electricity per Section 11.5 of the Master Lease.

**13. Signage:**

Sublessee, at its sole cost and expense, shall comply with any terms under the Master Lease that require Sublessee to put signage in the building lobby and/or the entryway to the Premises.

**14. Notices:**

## Sublease

All notices, demands, consents and approvals which may or are required to be given by either party to the other hereunder shall be given in the manner provided in the Master Lease at the addresses shown below. Sublessor shall notify Sublessee of any Event of Default under the Master Lease, or of any other event of which Sublessor has actual knowledge which will impair Sublessee's ability to conduct its normal business at the Subleased Premises, as soon as reasonably practicable following Sublessor's receipt of notice from the Lessor of an Event of Default or actual knowledge of such impairment.

| | | | |
|---|---|---|---|
| Sublessor's Address: | Silicon Valley Finance Group<br>3 Twin Dolphin Dr, Suite ____<br>Redwood Shores, CA 94065 | Sublessee's Address: | Capnia, Inc.<br>3 Twin Dolphin Dr, Suite 160<br>Redwood Shores, CA 94065 |
| Phone Number: | (650) 594-1633 | Phone Number: | _____ |
| Fax Number: | (650) 249-0206 | Fax Number: | _____ |

**15. Broker Fee:**

After execution of the Sublease, Sublessor shall pay Cornish & Carey Commercial Newmark Knight Frank, a licensed real estate broker, fees set forth in a separate agreement between Sublessor and Broker.

**16. Broker Representation:**

The only Brokers involved in this Sublease are Cornish & Carey Commercial Newmark Knight Frank representing Sublessor and CTBT representing Sublessee. Sublessor agrees that Broker may be the agent of both Sublessor and any prospective Sublessee. In a dual agency situation Broker has a fiduciary duty of utmost care, honesty and loyalty in the dealings with each party. In representing both parties, Broker will not without the permission of the respective party, disclose to the other party that the party will accept a price or terms less than the listing price and terms or that the other party will accept a price or terms greater than the price and term offered.

**17. Intentionally deleted.**

**18. Compliance With Nondiscrimination Regulations:**

It is understood that it is illegal for Sublessor to refuse to display or sublease the Subleased Premises or to assign, surrender or sell the Master Lease, to any person because of race, color, religion, national origin, sex, sexual orientation, marital status or disability.

**19. Toxic Contamination Disclosure:**

Sublessor and Sublessee each acknowledge that they have been advised that numerous federal, state, and/or local laws, ordinances and regulations (Laws) affect the existence and removal, storage, disposal, leakage of and contamination by materials designated as hazardous or toxic (Toxics). Many materials,

some utilized in everyday business activities and property maintenance, are designated as hazardous or toxic.

Some of the Laws require that Toxics be removed or cleaned up by landowners, future landowners or former landowners without regard to whether the party required to pay for "clean up" caused the contamination, owned the property at the time the contamination occurred or even knew about the contamination. Some items, such as asbestos or PCBs, which were legal when installed, now are classified as Toxics and are subject to removal requirements. Civil lawsuits for damages resulting from Toxics may be filed by third parties in certain circumstances.

Sublessor and Sublessee each acknowledge that neither the Broker nor the Sublessor have specific expertise with respect to environmental assessment or physical condition of the Subleased Premises, including, but not limited to, matters relating to: (i) problems which may be posed by the presence or disposal of hazardous or toxic substances on or from the Subleased Premises, (ii) problems which may be posed by the Subleased Premises being within the Special Studies Zone as designated under the Alquist-Priolo Special Studies Zone Act (Earthquake Zones), Section 2621-2630, inclusive of California Public Resources Code, and (iii) problems which may be posed by the Subleased Premises being within a HUD Flood Zone as set forth in the U.S. Department of Housing and Urban Development "Special Flood Zone Area Maps," as applicable.

Sublessor and Sublessee each acknowledge that neither the Broker nor the Sublessor have made an independent investigation or determination of the physical or environmental condition of the Subleased Premises, including, but not limited to, the existence or nonexistence of any underground tanks, sumps, piping, toxic or hazardous substances on the Subleased Premises. Sublessee agrees that it will rely solely upon its own investigation and/or the investigation of professionals retained by it or Sublessor, and neither Sublessor nor Sublessee shall rely upon Broker or Sublessor to determine the physical and environmental condition of the Subleased Premises or to determine whether, to what extent or in what manner, such condition must be disclosed to potential sublessees, assignees, purchasers or other interested parties.

**20. Rent Abatement and Damages to Personal Property:**

In the event Sublessor, pursuant to the terms of the Master Lease, is entitled to and receives rent abatement, then to the extent such rent abatement affects the Subleased Premises, Sublessee shall be entitled to rent abatement in an amount that the net rentable area of the Subleased Premises bears to the total net rentable area of the Master Lease, and only to the extent any such abatement applies to the Sublease Term. In addition, any amounts paid or credited to Sublessor under the terms of the Master Lease for damage to personal property shall be credited to Sublessee, subject to the same limitations set forth above. Notwithstanding the foregoing, if, subsequent to the date of this Sublease, Sublessor and Master Landlord agree to a reduction or abatement of Base Rent payable under the Master Lease (not involving a casualty, condemnation or other interference with access, use or enjoyment of the Subleased

## Sublease

Premises), then such reduction or abatement shall be for the sole benefit of Sublessor and will not reduce or affect the amount of rent owed by Sublessee to Sublessor.

**21. Parking:**

Sublessee shall have the right to its pro rata share of parking free of charge throughout the Sublease term and any extensions thereof, as provided by and subject to the terms of the Master Lease.

**22. Master Lessor Consent:**

This Sublease and Sublessor's and Sublessee's obligations hereunder are conditioned upon the written consent of Master Lessor in a form reasonably satisfactory to Sublessor and Sublessee. If Sublessor fails to obtain Master Lessor's consent within thirty (30) days after execution of this Sublease by Sublessor, then Sublessee may terminate this Sublease by giving Sublessor written notice thereof, and Sublessor shall return to Sublessee the Security Deposit and any prepaid rent.

**23. Assignment and Subletting:**

Sublessee will not assign this Sublease or further sublet all or any part of the Subleased Premises without the prior written consent of Sublessor (and the consent of Master Landlord, if this is required under the terms of the Master Lease). Notwithstanding the foregoing, this Sublease will be binding on and inure to the benefit of the parties to it, their heirs, executors, administrators, successors in interest, and assigns.

**24. Entry:**

Sublessor reserves the right to enter the Subleased Premises on reasonable notice to Sublessor to inspect the Premises or the performance by Sublessor of the terms and conditions of this Sublease and, during the last three (3) months of the Term, to show the Subleased Premises to prospective subtenants. In an emergency, no notice will be required for entry.

**25. Attorney Fees:**

If either party commences an action against the other in connection with this Sublease, the prevailing party will be entitled to recover costs of suit and reasonable attorney's fees.

**26. Entire Agreement:**

This Sublease sets forth all the agreements between Sublessor and Sublessee concerning the Premises, and there are no other agreements either oral or written other than as set forth in this Sublease.

**27. Authority:**

If Sublessee is a corporation, trust or general or limited partnership, Sublessee represents and warrants that each individual executing this Sublease on its behalf is duly authorized to execute and deliver this Sublease on behalf of Sublessee, that Sublessee is duly authorized to enter into this Sublease, and that this Sublease is enforceable against Sublessee in accordance with its terms. If Sublessee is a corporation, trust or partnership, Sublessee shall deliver to Sublessor upon demand evidence of such authority satisfactory to Sublessor.

## Sublease

**Sublessor:** SILICON VALLEY FINANCE GROUP, A DELAWARE CORPORATION

By: /s/ Jan Reed Date: 5-21-014

**Sublessee:** CAPNIA, INC., A DELAWARE CORPORATION

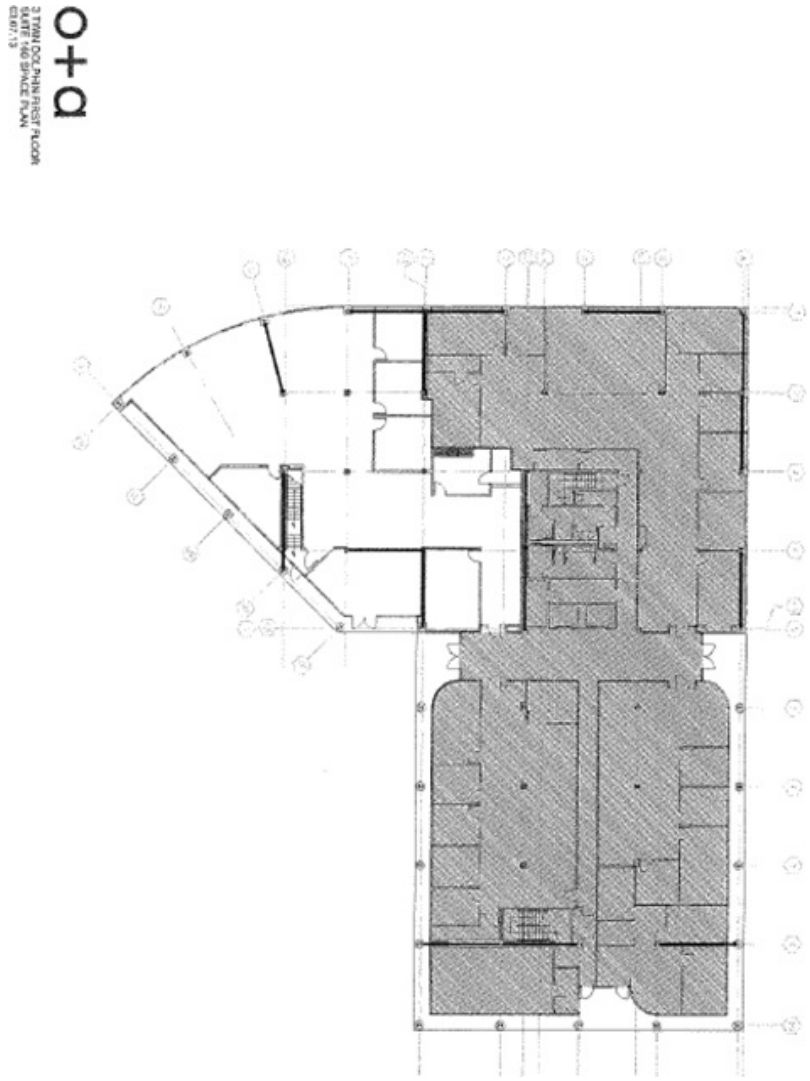
By: /s/ Anish Bhatnagar Date: 5-21-14

NOTICE TO SUBLESSOR AND SUBLESSEE: CORNISH & CAREY COMMERCIAL NEWMARK KNIGHT FRANK, IS NOT AUTHORIZED TO GIVE LEGAL OR TAX ADVICE; NOTHING CONTAINED IN THIS SUBLEASE OR ANY DISCUSSIONS BETWEEN CORNISH & CAREY COMMERCIAL NEWMARK KNIGHT FRANK AND SUBLESSOR AND SUBLESSEE SHALL BE DEEMED TO BE A REPRESENTATION OR RECOMMENDATION BY CORNISH & CAREY COMMERCIAL NEWMARK KNIGHT FRANK, OR ITS AGENTS OR EMPLOYEES AS TO THE LEGAL EFFECT OR TAX CONSEQUENCES OF THIS DOCUMENT OR ANY TRANSACTION RELATING THERETO. ALL PARTIES ARE ENCOURAGED TO CONSULT WITH THEIR INDEPENDENT FINANCIAL CONSULTANTS AND/OR ATTORNEYS REGARDING THE TRANSACTION CONTEMPLATED BY THIS PROPOSAL.

## Sublease

Exhibit “A” Master Lease (attached)

Exhibit “B” Premises



## Sublease

Exhibit “C” Furniture Inventory List

1. Three sets of workstations (each set is 4 workstations, each workstation with a desk, chair, and one or two file cabinets).

2. White board in large conference room

3. Conference table, side table and chairs in triangular conference room

4. Two lobby chairs and end table

5. One set of storage shelves in server room

6. The modular office furniture in the middle private office

7. 4 bar stools in kitchen

8. 2 Credenzas in reception area

## Sublease

LESSOR CONSENT

The undersigned, Lessor under the Master Lease attached as Attachment I, hereby consents to the subletting of the Subleased Premises described herein on the terms and conditions contained in this Sublease. This Consent shall apply only to this Sublease and shall not be deemed to be a consent to any other Sublease. Lessor agrees that the releases and waivers set forth in Section 8.4 of the Master Lease shall apply as between Lessor and Sublessee. Lessor further consents to Sublessee's use of the Premises for general office, light assembly and other related legal uses, subject to and in compliance with the terms of the Master Lease.

**Lessor:** THE REALTY ASSOCIATES FUND VII, L.P.,
A DELAWARE LIMITED PARTNERSHIP

By: _____ Date: _____

ATTORNMENT AGREEMENT

If the Master Lease terminates, Subtenant will, if requested, attorn to Master Landlord and recognize Master Landlord as Sublessor under this Sublease. Sublessee shall attorn to Lessor and perform all of Sublessee's obligations under the Sublease directly to Lessor as if Lessor were the sublessor under the Sublease. If Sublessee is not, at the time of the notice, in default, the intent of the parties is that Lessor shall continue to recognize the estate of Sublessee created under the Sublease. If Sublessee is not in default, the intent of the parties is that the Sublease shall continue with the same force and effect as if Lessor and Sublessor had entered into a lease on the same provisions as those contained in the Sublease, including, without limitation, the Sublessee's right to extend the term of the Lease.

**Lessor:** THE REALTY ASSOCIATES FUND VII, L.P.,
A DELAWARE LIMITED PARTNERSHIP

By: _____ Date: _____

**Exhibit 23.2**

**Independent Registered Public Accounting Firm's Consent**

We consent to the inclusion in this Amendment No. 1 to Form S-1 Registration Statement of Capnia, Inc. (Registration No. 333-196635) of our report dated May 7, 2014, which includes an explanatory paragraph as to the Company's ability to continue as a going concern with respect to our audits of the financial statements of Capnia, Inc. as of December 31, 2013 and 2012 and for the years ended December 31, 2013 and 2012 and for the period from August 25, 1999 (inception) to December 31, 2013, which report appears in the Prospectus, which is part of this Registration Statement. We also consent to the reference to our Firm under the heading "Experts" in such Prospectus.

/s/ Marcum LLP

Marcum LLP
New York, NY
June 30, 2014