

PROSPECTUS SUPPLEMENT
(To Prospectus dated October 3, 2012)

\$30,000,000
plus 150,000 Commitment Shares



Pursuant to this prospectus supplement and the accompanying prospectus, we are offering up to \$30,000,000 plus 150,000 Commitment Shares of our common stock, par value \$0.001 per share ("Common Stock"), to Aspire Capital Fund, LLC under a Common Stock Purchase Agreement entered into on March 10, 2014.

The shares offered include (i) 150,000 shares of Common Stock to be issued to Aspire Capital Fund, LLC in consideration for entering into the Common Stock Purchase Agreement and (ii) additional shares of Common Stock with an aggregate offering price of up to \$30,000,000 which may be sold from time to time to Aspire Capital Fund, LLC until June 2, 2016. The purchase price for the additional shares of stock will be based upon one of two formulas set forth in the Common Stock Purchase Agreement depending on the type of purchase notice we submit to Aspire Capital from time to time.

Our Common Stock is listed on The NASDAQ Capital Market under the symbol "NBS." On May 30, 2014, the last reported sale price of our common stock was \$6.81 per share.

Our business and an investment in our common stock involve significant risks. See "Risk Factors" beginning on page S-6 of this prospectus supplement and page 4 of the accompanying prospectus to read about factors that you should consider before making an investment decision.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is June 2, 2014

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of the offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus dated October 3, 2012, including the documents incorporated by reference, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or in any document incorporated by reference that was filed with the Securities and Exchange Commission, or SEC, before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date - for example, a document incorporated by reference in the accompanying prospectus - the statement in the document having the later date modifies or supersedes the earlier statement. You should read this prospectus supplement and the accompanying prospectus, including the information incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision.

You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus, along with the information contained in any free writing prospectus that we have authorized for use in connection with this offering. If the description of the offering varies between this prospectus supplement and the accompanying prospectus, you should rely on the information in this prospectus supplement. We have not authorized anyone to provide you with different or additional information. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering is accurate only as of the respective dates of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in this prospectus supplement or the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties and covenants were accurate only as of the date when made; therefore, such representations, warranties and covenants should not be relied on as accurate representations of the current state of our affairs.

Unless we have indicated otherwise, or the context otherwise requires, references in this prospectus supplement and the accompanying prospectus to "NeoStem," the "Company," "we," "us" and "our" refer to NeoStem, Inc. and its subsidiaries.

This prospectus supplement, the accompanying prospectus and the information incorporated by reference includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus supplement or the accompanying prospectus are the property of their respective owners.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights certain information about us, this offering and information appearing elsewhere in this prospectus supplement, in the accompanying prospectus and in the documents we incorporate by reference. This summary is not complete and does not contain all of the information that you should consider before making an investment decision. To fully understand this offering and its consequences to you, you should read this entire prospectus supplement and the accompanying prospectus carefully, including the factors described under the heading "Risk Factors" in this prospectus supplement beginning on page S-7 and page 4 of the accompanying prospectus, together with any free writing prospectus we have authorized for use in connection with this offering and the financial statements and all other information incorporated by reference in this prospectus supplement and the accompanying prospectus. When used in this prospectus supplement and the accompanying prospectus, except where the context otherwise requires, the terms "NeoStem," "we," "us" and "our" refer to NeoStem, Inc. and its subsidiaries.

About NeoStem

NeoStem, Inc. ("we," "NeoStem" or the "Company") is a leader in the emerging cellular therapy industry. We are pursuing the preservation and enhancement of human health globally through the development of cell based therapeutics that prevent, treat or cure disease. We have multiple cell therapy platforms that work to address the pathology of disease using a person's own cells to amplify the body's natural repair mechanisms including enhancing the destruction of cancer initiating cells, repairing and replacing damaged or aged tissue, cells and organs and restoring their normal function. We believe that cell therapy will play a large role in changing the natural history of diseases as more breakthrough therapies are developed, ultimately lessening the overall burden of disease on patients and their families as well as the economic burden that these diseases impose upon modern society.

Our business includes the development of novel proprietary cell therapy products, as well as a revenue-generating contract development and manufacturing service business that we leverage for the development of our therapeutics while providing service to other companies in the cell therapy industry developing products. The combination of our own therapeutic development business and a revenue-generating service provider business provides the Company with unique capabilities for cost effective in-house product development and immediate revenue and future cash flow to help underwrite our internal development programs. This business model enables the Company to be opportunistic in growing its pipeline as evidenced by the Company's acquisition in May 2014, through the issuance of equity, of California Stem Cell, Inc. ("CSC"), a cell biotechnology company that is developing cellular immunotherapies for cancer, an area we view to be one of the most promising sub-sectors in biotechnology. CSC, now known as NeoStem Oncology, LLC, is driving the Company's Targeted Immunotherapy Program for cancer through the development of its lead product candidate, Melapuldencel-T, to treat Stage IV or recurrent melanoma. The Phase 3 protocol is the subject of a Special Protocol Assessment (SPA), indicating that the Food and Drug Administration ("FDA") is in agreement with the design, clinical endpoints, and planned clinical analyses of the Phase 3 trial that will serve as the basis for a Biologics License Application ("BLA"). This protocol calls for enrolling 250 patients and is expected to be initiated in 2014.

We are currently developing therapies to address ischemia through our CD34 Cell Program. Ischemia occurs when the supply of oxygenated blood in the body is restricted. We seek to reverse this restriction through the development and formation of new blood vessels. AMR-001 is our most clinically advanced product candidate in our CD34 Cell Program and is being developed to treat damaged heart muscle following an acute myocardial infarction (heart attack) ("AMI"). In December 2013, the Company completed enrollment in its PreSERVE AMI study. PreSERVE AMI is a randomized, double-blinded, placebo-controlled Phase 2 clinical trial testing AMR-001, an autologous (donor and recipient are the same) adult stem cell product for the treatment of patients with left ventricular dysfunction following acute ST segment elevation myocardial infarction (STEMI). With the last patient of the planned 160 patient trial infused in late December 2013, we expect the last patient six-month follow-up to occur in June 2014. Once the primary end point six-month data is collected, the data set will be locked and analysis will begin with a submission for a possible presentation of the study at the American Heart Association's Scientific Sessions to be held November 15-19, 2014. If approved by Food and Drug Administration (the "FDA ") and/or other worldwide regulatory agencies following successful completion of further trials, AMR-001 would address a significant medical need for which there is currently no effective treatment, potentially improving longevity and quality of life for those suffering a STEMI, and positioning the Company to capture a meaningful share of this worldwide market. We also expect to advance the technology into other clinical indications such as chronic heart failure ("CHF"), traumatic brain injury ("TBI"), and/or critical limb ischemia ("CLI").

Another platform technology we are developing utilizes T Regulatory Cells ("Tregs") to treat diseases caused by imbalances in an individual's immune system. In collaborating with Becton-Dickinson and the University of California, San Francisco, we are utilizing this technology platform of our majority-owned subsidiary, Athelos Corporation ("Athelos"), to restore immune balance by enhancing Treg cell number and function. Tregs are a natural part of the human immune system and regulate the activity of T effector cells, the cells that are responsible for protecting the body from viruses and other foreign antigen exposure. When Tregs function properly, only harmful foreign materials are attacked by T effector cells. In autoimmune disease it is thought that deficient Treg activity permits the T effector cells to attack the body's own tissues, and in allergic diseases, like asthma, the immune system overreacts to harmless foreign substances. We plan to initiate a Phase 2 study of Treg based therapeutics to treat type 1 diabetes in 2014. We also plan to initiate a Phase 1 study in Canada of Treg based therapeutics in support of a steroid resistant asthma indication in 2014.

Pre-clinical assets include our VSEL™ (Very Small Embryonic Like) Technology regenerative medicine platform. Regenerative medicine holds the promise of improving clinical outcomes and reducing overall healthcare costs. We are working on a Department of Defense funded study of VSELS™ for the treatment of chronic wounds. Other preclinical work with VSELS™ includes exploring macular degeneration as a target indication.

Progenitor Cell Therapy, LLC ("PCT") is a contract manufacturer that generates revenue. This wholly owned subsidiary, which we acquired in 2011, is an industry leader in providing high quality manufacturing capabilities and support to developers of cell-based therapies to enable them to improve efficiencies and profitability and reduce capital investment for their own development activities. Since its inception more than 15 years ago, PCT has provided pre-clinical and clinical current Good Manufacturing Practice ("cGMP") development and manufacturing services to more than 100 clients. PCT has experience advancing regenerative medicine product candidates from product inception through rigorous quality standards all the way through to human testing, BLA filing and FDA product approval. PCT's core competencies in the cellular therapy industry include manufacturing of cell therapy-based products, engineering and innovation services, product and process development, cell and tissue processing, regulatory support, storage, distribution and delivery and consulting services. PCT has two cGMP, state-of-the art cell therapy research, development, and manufacturing facilities in New Jersey and California, serving the cell therapy community with integrated and regulatory compliant distribution capabilities. The Company is pursuing commercial expansion of our manufacturing operations both in the U.S. and internationally. Additionally, with the acquisition of CSC, PCT can leverage CSC's additional manufacturing capacity in Irvine, California as well as the personnel experience and expertise in immunotherapy to provide additional manufacturing and /or development work to advance NeoStem's platform technology as well as technologies of PCT's client base.

Strategic acquisitions have been the cornerstone of NeoStem's growth and have been selected in order to provide value to stockholders by taking advantage of the infrastructure we have created which includes strong development, regulatory and manufacturing expertise. By adding Melapuldencel-T, a late stage novel proprietary cancer cell therapy into our pipeline, we look to further advance towards our goal of delivering transformative cell based therapies to the market to help patients suffering from life-threatening medical conditions. Coupled with our best in class manufacturing capability, the stage is set for us to realize meaningful clinical development and manufacturing efficiencies, further positioning NeoStem to lead the cell therapy industry.

NeoStem Corporate Information

Our principal executive offices are located at 420 Lexington Avenue, Suite 350, New York, New York 10170, and our telephone number is (212) 584-4180. Our Common Stock is currently traded on The NASDAQ Capital Market under the symbol "NBS." We maintain a corporate website at www.neostem.com. The contents of our website are not incorporated by reference into this prospectus and should not be considered to be a part of this prospectus or relied upon in connection herewith.

NeoStem, Inc. was incorporated under the laws of the State of Delaware in September 1980 under the name Fidelity Medical Services, Inc. and commenced operations in the adult stem cell collection, processing and storage services business in January 2006. Unless otherwise stated, all references to "us," "our," "NeoStem," "we," the "Company" and similar designations refer to NeoStem, Inc. and its subsidiaries. Unless otherwise stated, all stock prices and exercise prices referenced in this prospectus supplement give effect to the one-for-ten reverse stock split effected by the Company on July 16, 2013.

THE OFFERING

On March 10, 2014, we entered into a Common Stock Purchase Agreement (the “Purchase Agreement”) with Aspire Capital Fund, LLC, an Illinois limited liability company (“Aspire Capital”), which provides that, upon the terms and subject to the conditions and limitations set forth therein, Aspire Capital is committed to purchase up to an aggregate of \$30.0 million of shares of our common stock (the “Purchase Shares”) from time to time over the term of the Purchase Agreement. As consideration for entering into the Purchase Agreement, we agreed to issue 150,000 shares of our common stock to Aspire Capital (the “Commitment Shares”).

We are filing this prospectus supplement with regard to the offering of our common stock consisting of (i) the Commitment Shares and (ii) additional shares of our common stock having an aggregate offering price of up to \$30.0 million that we may sell to Aspire Capital pursuant to the Purchase Agreement.

On any business day over the 24-month term of the 2014 Purchase Agreement (until June 2, 2016), we have the right, in our sole discretion, to present Aspire Capital with a purchase notice (each, a “Purchase Notice”) directing Aspire Capital to purchase up to 50,000 Purchase Shares per business day; however, no sale pursuant to such a Purchase Notice may exceed five hundred thousand dollars (\$500,000) per business day, unless we and Aspire Capital mutually agree. We and Aspire Capital also may mutually agree to increase the number of shares that may be sold to as much as an additional 2,000,000 Purchase Shares per business day. The purchase price per Purchase Share pursuant to such Purchase Notice (the “Purchase Price”) is the lower of:

- (i) the lowest sale price for our common stock on the date of sale; or
- (ii) the average of the three lowest closing sale prices for our common stock during the 12 consecutive business days ending on the business day immediately preceding the purchase date.

The applicable Purchase Price will be determined prior to delivery of any Purchase Notice.

In addition, on any date on which we submit a Purchase Notice to Aspire Capital for at least 50,000 Purchase Shares, we also have the right, in our sole discretion, to present Aspire Capital with a volume-weighted average price purchase notice (each, a “VWAP Purchase Notice”) directing Aspire Capital to purchase an amount of our common stock equal to up to 30% of the aggregate shares of common stock traded on the next business day (the “VWAP Purchase Date”), subject to a maximum number of shares determined by us (the “VWAP Purchase Share Volume Maximum”). The purchase price per Purchase Share pursuant to such VWAP Purchase Notice (the “VWAP Purchase Price”) shall be 95% of the volume weighted average price for our common stock traded on (i) the VWAP Purchase Date if the aggregate shares to be purchased on that date does not exceed the VWAP Purchase Share Volume Maximum, or (ii) the portion of such business day until such time as the aggregate shares to be purchased will equal the VWAP Purchase Share Volume Maximum. Further, if on the VWAP Purchase Date the sale price of our common stock falls below the greater of (i) 80% of the closing price of our common stock on the business day immediately preceding the VWAP Purchase Date or (ii) the price set by us in the VWAP Purchase Notice (the “VWAP Minimum Price Threshold”), the VWAP Purchase Amount will be determined using the percentage in the VWAP Purchase Notice of the total shares traded for such portion of the VWAP Purchase Date prior to the time that the sale price of our common stock fell below the VWAP Minimum Price Threshold and the VWAP Purchase Price will be 95% of the volume weighted average price of our common stock sold during such portion of the VWAP Purchase Date prior to the time that the sale price of our common stock fell below the VWAP Minimum Price Threshold.

The number of Purchase Shares covered by and timing of each Purchase Notice or VWAP Purchase Notice are determined by the Company, at our sole discretion. The aggregate number of shares that we can sell to Aspire Capital under the Purchase Agreement may in no case exceed 5,687,942 shares of our common stock (which is equal to approximately 19.9% of the common stock outstanding on the date of the Purchase Agreement, including the 150,000 Commitment Shares (the “Exchange Cap”), unless (i) shareholder approval is obtained to issue more, in which case the Exchange Cap will not apply, or (ii) stockholder approval has not been obtained and at any time the Exchange Cap is reached and at all times thereafter the average price paid for all shares issued under the Purchase Agreement (including the Commitment Shares) is equal to or greater than \$7.22 (the “Minimum Price”), a price equal to the closing sale price of our common stock on the execution date of the Purchase Agreement; provided that at no time shall Aspire Capital (together with its affiliates) beneficially own more than 19.9% of our common stock. Aspire Capital has no right to require any sales by us, but is obligated to make purchases from us as we direct in accordance with the Purchase Agreement. There are no limitations on use of proceeds, financial or business covenants, restrictions on future fundings, rights of first refusal, participation rights, penalties or liquidated damages in the Purchase Agreement. We did not pay any additional amounts to reimburse or otherwise compensate Aspire Capital in connection with the transaction. The Purchase Agreement may be terminated by us at any time, at our discretion, without any penalty or cost to us.

Our net proceeds will depend on the Purchase Price, the VWAP Purchase Price and the frequency of our sales of Purchase Shares to Aspire Capital; subject to the maximum \$30.0 million available amount. Our delivery of Purchase Notices and VWAP Purchase Notices will be made subject to market conditions, in light of our capital needs from time to time. We currently intend to use the net proceeds from sales of Purchase Shares for working capital, including research and development of cell therapeutic product candidates, expansion of business units and other general corporate purposes. See “Use of Proceeds” on page S-11 of this prospectus supplement.

RISK FACTORS

Investing in our common stock involves a high degree of risk. This prospectus supplement does not describe all of those risks. You should consider the risk factors described in this prospectus under the caption "Risks Related to This Offering and Our Securities" below, as well as the those described under the caption "Risk Factors" in the documents incorporated by reference herein, including our Annual Report on Form 10-K for the fiscal year ended December 31, 2013 filed with the SEC on March 13, 2014, and our Quarterly Report on Form 10-Q filed with the SEC on May 8, 2014, together with the other information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering, before making an investment decision.

Additionally, the CSC Acquisition and the ongoing operations of our NeoStem Oncology, LLC will subject the Company to additional risks. Our Current Report on Form 8-K filed on May 8, 2014 reporting the closing of the CSC Acquisition contains a discussion of the "Risk Factors" related to the CSC Acquisition and our NeoStem Oncology, LLC subsidiary, which are also incorporated herein by reference into this prospectus supplement and accompanying prospectus.

If any of the these risks occur, our business, financial condition, results of operations and future prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock would likely decline and you may lose all or part of your investment. Share information set forth in these risk factors is as of the dates set forth herein or therein and unless otherwise indicated, does not give effect to the issuance of the securities in connection with this offering.

Risks Related to This Offering and Our Securities

Sales of our common stock to Aspire Capital may cause substantial dilution to our existing stockholders and the sale of the shares of our common stock acquired by Aspire Capital could cause the price of our common stock to decline.

This prospectus supplement relates to \$30.0 million of our common stock that we may issue and sell to Aspire Capital from time to time pursuant to the Purchase Agreement, together with the Commitment Shares. It is anticipated that shares offered to Aspire Capital in this offering will be sold over a period of up to 24 months from the date of this prospectus supplement. The number of shares ultimately offered for sale to Aspire Capital under this prospectus supplement is dependent upon the number of shares we elect to sell to Aspire Capital under the Purchase Agreement. Depending upon market liquidity at the time, sales of shares of our common stock under the Purchase Agreement may cause the trading price of our common stock to decline.

Aspire Capital may ultimately purchase all, some or none of the \$30.0 million of our common stock that, together with the 150,000 Commitment Shares, is the subject of this prospectus supplement. After Aspire Capital has acquired shares under the Purchase Agreement, it may sell all, some or none of those shares. Sales to Aspire Capital by us pursuant to the Purchase Agreement under this prospectus supplement may result in substantial dilution to the interests of other holders of our common stock. The sale of a substantial number of shares of our common stock to Aspire Capital in this offering, or anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales. However, we have the right to control the timing and amount of any sales of our shares to Aspire Capital and the Purchase Agreement may be terminated by us at any time at our discretion without any cost to us.

We anticipate that we will need substantial additional financing in the future to continue our operations, including the operations of CSC acquired in the CSC Acquisition. If we are unable to raise additional capital as and when needed, or on acceptable terms, we may be forced to delay, reduce or eliminate one or more of our product development programs or expansion of our contract and manufacturing operations and our business will be harmed.

We anticipate that we will require substantial additional capital to fund our current operating plan, including, among other things, the continued development of our cell therapy product candidates and the operation, enhancement and expansion of our contract development and manufacturing operations to support our customers and clinical development activities and could require additional funding to not only expand our current business units but those we may obtain through strategic transactions.

The CSC business that we have acquired will require significant additional financing. CSC is a development stage company with no commercial products. CSC's current clinical development candidate Melapuldencel-T (and any other product candidates) will require significant investment before they can be commercialized. A Phase 3 clinical trial of

Melapuldencel-T to treat Stage IV or recurrent melanoma is expected to be initiated in 2014. Our research and development expenses will increase with the addition of the ongoing activities of the CSC business, particularly as the Phase 3 clinical trial commences with respect to CSC's lead product candidate Melapuldencel-T. Subject to obtaining regulatory approval of any present or future CSC product candidate, we expect to incur significant commercialization expenses for product sales and marketing. In addition, the research and development expenses associated with our existing products have increased significantly over the past two years as a result of the initiation of the AMR-001 Phase 2 clinical trial in 2012. This trial completed enrollment in December 2013. Research and development expenses also have been increasing with respect to our T Regulatory Cell Program, particularly due to the licensing of patents, data and collaboration with third parties. Our clinical activities are expected to continue to grow as AMR-001 is developed for AMI and other clinical trials for indications are launched under our CD34 Cell Program and T Regulatory Cell Program. These programs will require significant investment over a period of several years before they could be approved by FDA and commercialized by us, if ever. If the results of the current Phase 2 and other clinical trials are positive, we will need to conduct additional clinical studies of the product, including larger and more expensive pivotal Phase 3 studies. To do so, we will need to raise additional money in the capital markets, enter into collaboration agreements with third parties or undertake some combination thereof. If we are unsuccessful in these efforts, we will likely need to otherwise delay or abandon the foregoing trials.

The amount and timing of our future capital requirements also will likely depend on many other factors, including:

- the scope, progress, results, costs, timing and outcomes of our other cell therapy research and development programs and product candidates;
- our ability to enter into any collaboration agreements with third parties for our other product candidates and the timing and terms of any such agreements;
- the costs associated with the consummation of one or more strategic transactions;
- the timing of and the costs involved in obtaining regulatory approvals for our product candidates, a process which could be particularly lengthy or complex given the FDA's limited experience with marketing approval for cell therapy products;
- the costs of maintaining, expanding and protecting our intellectual property portfolio, including potential litigation costs and liabilities; and
- the cost of expansion of our contract development and manufacturing operations, including but not limited to the costs of expanded facilities, equipment costs, engineering and innovation initiatives and personnel.

To both fund our clinical studies and support our future operations, we would likely seek to raise capital through a variety of different public and/or private financings vehicles. This could include, but not be limited to, use of our Purchase Agreement with Aspire Capital, potential warrant exercises, option exercises, issuances of other debt or equity securities in public or private financings, and/or sale of assets. If we raise capital through the sale of equity, or securities convertible into equity, it would result in dilution to our then existing stockholders. Servicing the interest and principal repayment obligations under debt facilities could divert funds that would otherwise be available to support research and development, clinical or commercialization activities. In certain cases, we also may seek funding through collaborative arrangements, that would likely require us to relinquish certain rights to our technology or product candidates and share in the future revenues associated with the partnered product.

Future cash requirements of the combined company may vary materially from those currently anticipated because of expenses relating to marketing, advertising, sales, distribution, research and development and regulatory affairs (including the expenses related to clinical trials), as well as the costs of maintaining, expanding and protecting our intellectual property portfolio, including potential litigation costs and liabilities. Ultimately, we may be unable to raise capital or enter into collaborative relationships on terms that are acceptable to us, if at all. Our inability to obtain necessary capital or financing to fund our future operating needs could adversely affect our business, results of operations and financial condition.

We have a right to sell up to a maximum of 50,000 Purchase Shares per day under our Purchase Agreement with Aspire Capital, which total may be increased by mutual agreement up to an additional 2,000,000 Purchase Shares per day. In addition, under certain circumstances we also have the right to sell to Aspire Capital an amount of stock equal to up to 30% of the aggregate shares of the Company's Common Stock traded on NASDAQ on the next business day, subject to a maximum number of shares determined by the Company. The extent to which we rely on Aspire Capital as a source of funding will depend on a number of factors, including the prevailing market price of our common stock and the extent to

which we are able to secure working capital from other sources. The aggregate number of shares that we can sell to Aspire Capital under the Purchase Agreement may in no case exceed 5,687,942 shares of our common stock (which is equal to approximately 19.9% of the common stock outstanding on the date of the Purchase Agreement, including the 150,000 Commitment Shares (the “Exchange Cap”), unless (i) shareholder approval is obtained to issue more, in which case the Exchange Cap will not apply, or (ii) stockholder approval has not been obtained and at any time the Exchange Cap is reached and at all times thereafter the average price paid for all shares issued under the Purchase Agreement (including the Commitment Shares) is equal to or greater than \$7.22 (the “Minimum Price”), a price equal to the closing sale price of our common stock on the execution date of the Purchase Agreement.

Management will have broad discretion as to the use of the proceeds from this offering, and we may not use the proceeds effectively.

Our management will have broad discretion in the application of the proceeds from sales of our common stock to Aspire Capital offered by this prospectus supplement, and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. Our failure to apply these funds effectively could have a material adverse effect on our business, delay the development of our product candidates and cause the price of our common stock to decline.

The market price of our common stock may fluctuate significantly, and may be subject to enhanced volatility as a result of the CSC Acquisition.

There has been significant volatility in the market prices for publicly traded shares of biopharmaceutical companies, including shares of our common stock. We expect that the market price of our common stock will continue to fluctuate. The price of our common stock fluctuated from a high of \$9.89 per share to a low of \$5.00 per share (as adjusted for our July 2013 reverse stock split) for the year ended December 31, 2013, and during 2014 (through May 30, 2014), fluctuated from a high of \$7.98 per share to a low of \$4.57 per share. The price of our common stock may not remain at or exceed current levels. The following key factors related to our business, among others, may have an adverse impact on the market price of our common stock:

- adverse results of our clinical trials or adverse events associated with our marketed products (including adverse results or, if commercialized, adverse events with respect to Melapuldencel-T);
- our products’ ability to demonstrate efficacy or an acceptable safety profile;
- product introductions and sales by our competitors;
- new product discovery and development by our competitors;
- our ability to obtain and maintain regulatory approval for our existing products as well as for new products in development;
- announcements of technical or product developments by our competitors;
- our failure to effectively implement our business strategy or our adoption and implementation of a business strategy that places us at a disadvantage to our competitors;
- market conditions for pharmaceutical and biotechnology stocks;
- market conditions generally;
- governmental regulation;
- new accounting pronouncements, regulatory rulings or actions by the FDA;
- health care legislation generally and potential changes in insurance or governmental reimbursement policies on our products and pipeline products;
- public announcements by competitors regarding medical advances in the treatment of the disease states that we are targeting;
- patent or proprietary rights developments and/or changes in patent laws, including our ability to successfully protect and enforce our intellectual property rights;
- royalties and contract revenues that we become obligated to pay;
- reimbursement policies or rates for our products;
- product manufacturing, including our arrangements with third party suppliers;
- our expenses and net income;
- our liquidity;
- our asset and liability risk management;
- the outcome of litigation involving our products or processes related to production and formulation of those products or uses of those products;
- competition; and

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- operational and legal risks.

Our common stock may be subject to additional volatility as a result of any adverse developments in connection with the development of our recently-acquired Melapuldencel-T product. In addition, the stock market in general and the biotechnology sector in particular have experienced extreme volatility that has often been unrelated to the operating performance of a particular company. These broad market fluctuations may adversely affect the market price of our common stock.

In addition to potential dilution associated with future fundraising transactions, we currently have significant numbers of securities outstanding that are exercisable for our common stock, and potential milestone payment obligations, which could result in significant additional dilution and downward pressure on our stock price.

As of May 30, 2014, there were 33,921,456 shares of our common stock outstanding. In addition, as of May 30, 2014, there were outstanding stock options and warrants representing the potential issuance of an additional 8,041,404 shares of our common stock. The issuance of these shares in the future would result in significant dilution to our current stockholders and could adversely affect the price of our common stock and the terms on which we could raise additional capital. In addition, the issuance and subsequent trading of shares could cause the supply of our common stock available for purchase in the market to exceed the purchase demand for our common stock. Such supply in excess of demand could cause the market price of our common stock to decline.

Future sales of a significant number of our shares of common stock in the public markets, or the perception that such sales could occur, could depress the market price of our shares of common stock.

Sales of a substantial number of our shares of common stock in the public markets, or the perception that such sales could occur, could depress the market price of our shares of common stock and impair our ability to raise capital through the sale of additional equity securities. A substantial number of shares of common stock are being offered by this prospectus supplement, and we cannot predict if and when Aspire Capital may sell such shares in the public markets. Additionally, a substantial number of shares of common stock are being issued in connection with the closing of the CSC Acquisition, and a significant number of shares may become issuable in the future in connection with any milestone payments that may become payable in connection with the acquisition. We cannot predict if and when the recipients of the merger consideration may sell such shares of common stock in the public markets, after such time as the closing merger consideration is released from lock-up restrictions or escrow, as applicable (or, in the case of milestone payments, after such become payable). We cannot predict the number of these shares that might be sold nor the effect that future sales of our shares of common stock would have on the market price of our shares of common stock.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement the accompanying prospectus and the documents incorporated by reference herein or therein contain “forward-looking” statements within the meaning of the Private Securities Litigation Reform Act of 1995, as well as historical information. Such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements, or industry results, to be materially different from anticipated results, performance or achievements expressed or implied by such forward-looking statements. When used in this prospectus supplement and accompanying prospectus, statements that are not statements of current or historical fact may be deemed to be forward-looking statements. Without limiting the foregoing, the words “plan,” “intend,” “may,” “will,” “expect,” “believe,” “could,” “anticipate,” “estimate,” or “continue” or similar expressions or other variations or comparable terminology are intended to identify such forward-looking statements, although some forward-looking statements are expressed differently. We remind readers that forward-looking statements are merely predictions and therefore inherently subject to uncertainties and other factors and involve known and unknown risks that could cause the actual results, performance, levels of activity or our achievements or industry results, to be materially different from any future results, performance levels of activity or our achievements or industry results expressed or implied by such forward-looking statements. Such forward looking statements appear in this prospectus supplement and accompanying prospectus. Factors that could cause our actual results to differ materially from anticipated results expressed or implied by forward-looking statements include, among others:

- our ability to obtain sufficient capital or strategic business arrangements to fund our operations and expansion plans, including meeting our financial obligations under various licensing and other strategic arrangements, the funding of our clinical trials for product candidates in our development programs for our Targeted Immunotherapy Program, our CD34 Cell Program and our T Regulatory Cell Program, and the commercialization of the relevant technology;
- our ability to build and maintain the management and human resources infrastructure necessary to support the growth of our business;
- our ability to integrate our acquired businesses successfully and grow such acquired businesses as anticipated, including expanding our PCT business internationally;
- whether a large global market is established for our cellular-based products and services and our ability to capture a meaningful share of this market;
- scientific and medical developments beyond our control;
- our ability to obtain and maintain, as applicable, appropriate governmental licenses, accreditations or certifications or comply with healthcare laws and regulations or any other adverse effect or limitations caused by government regulation of our business;
- whether any of our current or future patent applications result in issued patents, the scope of those patents and our ability to obtain and maintain other rights to technology required or desirable for the conduct of our business; our ability to commercialize products without infringing the claims of third party patents;
- whether any potential strategic benefits of various licensing transactions will be realized and whether any potential benefits from the acquisition of these licensed technologies will be realized;
- the results of our development activities, including the results of our planned Melapuldencel-T Phase 3 clinical trial, our PreSERVE Phase 2 clinical trial of AMR-001 and planned clinical trials;
- our ability to complete our other planned clinical trials (or initiate other trials) in accordance with our estimated timelines due to delays associated with enrolling patients due to the novelty of the treatment, the size of the patient population and the need of patients to meet the inclusion criteria of the trial or otherwise;
- the other factors discussed in “Risk Factors” in our Form 10-K filed with the Securities and Exchange Commission (“the SEC”) on March 13, 2014, and elsewhere in the Annual Report on Form 10-K; and
- The CSC Acquisition and the ongoing operations of our NeoStem Oncology, LLC will subject the Company to additional risks. Our Current Report on Form 8-K filed on May 8, 2014 reporting the closing of the CSC Acquisition contains a discussion of the risk factors related to the CSC Acquisition and our NeoStem Oncology, LLC subsidiary.

The factors discussed herein, including those risks described in Item 1A. “Risk Factors” in the Company’s Annual Report on Form 10-K filed with the SEC on March 13, 2014, the “Risk Factors” described in the Current Report on Form 8-K filed by the Company on May 8, 2014 and in the Company’s other periodic filings with the Securities and Exchange Commission (the “SEC”) which are available for review at www.sec.gov under “Search for Company Filings” could cause actual results and developments to be materially different from those expressed or implied by such statements. All forward-looking statements attributable to us are expressly qualified in their entirety by these and other factors. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. Except as required by law, the Company undertakes no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.

USE OF PROCEEDS

We currently intend to use the net proceeds of this offering for working capital, including research and development of cell therapeutic product candidates, expansion of business units organically or from strategic transactions and other general corporate purposes. As of the date of this prospectus supplement and except as explicitly set forth herein, we cannot specify with certainty all of the particular uses of the proceeds from this offering. Accordingly, we will retain broad discretion over the use of such proceeds. Pending use of the net proceeds of this offering received from time to time in connection with purchases under the Purchase Agreement described above, we intend to invest such net proceeds in short-term interest-bearing investment grade instruments.

General

On March 10, 2014, we entered into a Common Stock Purchase Agreement (the “Purchase Agreement”) with Aspire Capital Fund, LLC, an Illinois limited liability company (“Aspire Capital”), which provides that, upon the terms and subject to the conditions and limitations set forth therein, Aspire Capital is committed to purchase up to an aggregate of \$30.0 million of shares of our common stock (the “Purchase Shares”) from time to time over the term of the Purchase Agreement. As consideration for entering into the Purchase Agreement, we agreed to issue 150,000 shares of our common stock to Aspire Capital (the “Commitment Shares”).

We are filing this prospectus supplement with regard to the offering of our common stock consisting of (i) the Commitment Shares and (ii) additional shares of our common stock having an aggregate offering price of up to \$30.0 million that we may sell to Aspire Capital pursuant to the Purchase Agreement.

Purchase of Shares under the Purchase Agreement

On any business day over the 24-month term of the 2014 Purchase Agreement (until June 2, 2016), we have the right, in our sole discretion, to present Aspire Capital with a purchase notice (each, a “Purchase Notice”) directing Aspire Capital to purchase up to 50,000 Purchase Shares per business day; however, no sale pursuant to such a Purchase Notice may exceed five hundred thousand dollars (\$500,000) per business day, unless we and Aspire Capital mutually agree. We and Aspire Capital also may mutually agree to increase the number of shares that may be sold to as much as an additional 2,000,000 Purchase Shares per business day. The purchase price per Purchase Share pursuant to such Purchase Notice (the “Purchase Price”) is the lower of:

- (i) the lowest sale price for our common stock on the date of sale; or
- (ii) the average of the three lowest closing sale prices for our common stock during the 12 consecutive business days ending on the business day immediately preceding the purchase date.

The applicable Purchase Price will be determined prior to delivery of any Purchase Notice.

In addition, on any date on which we submit a Purchase Notice to Aspire Capital for at least 50,000 Purchase Shares, we also have the right, in our sole discretion, to present Aspire Capital with a volume-weighted average price purchase notice (each, a “VWAP Purchase Notice”) directing Aspire Capital to purchase an amount of our common stock equal to up to 30% of the aggregate shares of common stock traded on the next business day (the “VWAP Purchase Date”), subject to a maximum number of shares determined by us (the “VWAP Purchase Share Volume Maximum”). The purchase price per Purchase Share pursuant to such VWAP Purchase Notice (the “VWAP Purchase Price”) shall be 95% of the volume weighted average price for our common stock traded on (i) the VWAP Purchase Date if the aggregate shares to be purchased on that date does not exceed the VWAP Purchase Share Volume Maximum, or (ii) the portion of such business day until such time as the aggregate shares to be purchased will equal the VWAP Purchase Share Volume Maximum. Further, if on the VWAP Purchase Date the sale price of our common stock falls below the greater of (i) 80% of the closing price of our common stock on the business day immediately preceding the VWAP Purchase Date or (ii) the price set by us in the VWAP Purchase Notice (the “VWAP Minimum Price Threshold”), the VWAP Purchase Amount will be determined using the percentage in the VWAP Purchase Notice of the total shares traded for such portion of the VWAP Purchase Date prior to the time that the sale price of our common stock fell below the VWAP Minimum Price Threshold and the VWAP Purchase Price will be 95% of the volume weighted average price of our common stock sold during such portion of the VWAP Purchase Date prior to the time that the sale price of our common stock fell below the VWAP Minimum Price Threshold.

The number of Purchase Shares covered by and timing of each Purchase Notice or VWAP Purchase Notice are determined by the Company, at our sole discretion. The aggregate number of shares that we can sell to Aspire Capital under the Purchase Agreement may in no case exceed 5,687,942 shares of our common stock (which is equal to approximately 19.9% of the common stock outstanding on the date of the Purchase Agreement, including the 150,000 Commitment Shares (the “Exchange Cap”), unless (i) shareholder approval is obtained to issue more, in which case the Exchange Cap will not apply, or (ii) stockholder approval has not been obtained and at any time the Exchange Cap is reached and at all times thereafter the average price paid for all shares issued under the Purchase Agreement (including the Commitment Shares) is equal to or greater than \$7.22 (the “Minimum Price”), a price equal to the closing sale price of our common stock on the execution date of the Purchase Agreement; provided that at no time shall Aspire Capital (together with its affiliates) beneficially own more than 19.9% of our common stock. Aspire Capital has no right to require any sales by us, but is obligated to make purchases from us as we direct in accordance with the Purchase Agreement. There are no limitations on use of proceeds, financial or business covenants, restrictions on future fundings, rights of first refusal, participation rights, penalties or liquidated damages in the Purchase Agreement. We did not pay any additional amounts

to reimburse or otherwise compensate Aspire Capital in connection with the transaction. The Purchase Agreement may be terminated by us at any time, at our discretion, without any penalty or cost to us.

Events of Default

Aspire Capital may terminate the Purchase Agreement upon the occurrence of any of the following events of default:

- the effectiveness of any registration statement that is required to be maintained effective pursuant to the terms of the registration rights agreement between us and Aspire Capital lapses for any reason (including, without limitation, the issuance of a stop order) or is unavailable for sale of our shares of Common Stock in accordance with the terms of the registration rights agreement, and such lapse or unavailability continues for a period of ten consecutive business days or for more than an aggregate of thirty business days in any 365-day period;
- the suspension from trading or failure of our Common Stock to be listed on our principal market for a period of three consecutive business days;
- the delisting of our Common Stock from our principal market, provided our Common Stock is not immediately thereafter trading on the New York Stock Exchange, the Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market or the OTC Bulletin Board;
- our transfer agent's failure to issue to Aspire Capital shares of our Common Stock which Aspire Capital is entitled to receive under the Purchase Agreement within five business days after an applicable purchase date;
- any breach by us of the representations or warranties or covenants contained in the Purchase Agreement or any related agreements which could have a material adverse effect on us subject to a cure period of five business days;
- if we become insolvent or are generally unable to pay our debts as they become due; or
- any participation or threatened participation in insolvency or bankruptcy proceedings by or against us.

Our Termination Rights

We may terminate the Purchase Agreement at any time, in our discretion, without any cost or penalty.

No Short-Selling or Hedging by Aspire Capital

Aspire Capital has agreed that neither it nor any of its agents, representatives and affiliates shall engage in any direct or indirect short-selling or hedging of our Common Stock during any time prior to the termination of the Purchase Agreement.

Effect of Performance of the Purchase Agreement on Our Stockholders

The Purchase Agreement does not limit the ability of Aspire Capital to sell any or all of the shares it currently owns or receives in this offering. It is anticipated that shares sold to Aspire Capital in this offering will be sold to Aspire Capital over a period of up to 24 months from the date of this prospectus supplement, or until June 2, 2016. The subsequent resale by Aspire Common Stock to decline or to be highly volatile. Aspire Capital may ultimately purchase all, some or none of the additional \$30 million of Common Stock offered, together with the Commitment Shares, under this prospectus supplement. Aspire Capital may resell all, some or none of the Commitment Shares and any Purchase Shares it acquires. Therefore, sales to Aspire Capital by us pursuant to the Purchase Agreement and this prospectus supplement also may result in substantial dilution to the interests of other holders of our Common Stock. However, we have the right to control the timing and amount of any sales of our shares to Aspire Capital and the Purchase Agreement may be terminated by us at any time at our discretion without any cost to us.

Amount of Potential Proceeds to be Received under the Purchase Agreement

Under the Purchase Agreement, we may sell Purchase Shares having an aggregate offering price of up to \$30 million to Aspire from time to time. The number of shares ultimately offered for sale to Aspire Capital in this offering is dependent

upon the number of shares we elect to sell to Aspire Capital under the Purchase Agreement. The following table sets forth the amount of proceeds we would receive from Aspire Capital from the sale of shares at varying purchase prices:

Assumed Average Purchase Price	Number of Shares to be Sold if Full Purchase ⁽¹⁾	Percentage of Outstanding Shares After Giving Effect to the Sale to Aspire Capital ⁽²⁾	Proceeds from the Sale of Shares to Aspire Capital Under the Purchase Agreement
4.50	5,687,942	14.3%	\$25,595,739
5.00	5,687,942	14.3%	\$28,439,710
5.50	5,454,545	13.8%	\$30,000,000
6.00	5,000,000	12.8%	\$30,000,000
6.50	4,615,385	11.9%	\$30,000,000
7.00	4,285,714	11.2%	\$30,000,000
7.50	4,000,000	10.5%	\$30,000,000

(1) Excludes the 150,000 shares issued as Commitment Shares, and assumes the purchase by Aspire Capital of the full \$30 million of Common Stock.

(2) The denominator is based on 33,921,456 shares outstanding as of May 30, 2014, adjusted to include the 150,000 shares issued as Commitment Shares, and the number of shares set forth in the adjacent column which we would have sold to Aspire Capital. The numerator is based on the number of shares which we would have sold under the Purchase Agreement at the corresponding assumed purchase price set forth in the adjacent column.

Information With Respect to Aspire Capital

Aspire Capital Partners, LLC is the managing member of Aspire Capital Fund, LLC. SGM Holdings Corp. is the managing member of Aspire Capital Partners, LLC. Steven G. Martin is the president and sole shareholder of SGM Holdings Corp. Erik J. Brown is a principal of Aspire Capital Partners, LLC. Christos Komissopoulos is a principal of Aspire Capital Partners, LLC. Each may be deemed to have shared voting and investment power over shares owned by Aspire Capital Fund, LLC. Each of Aspire Capital Partners, LLC, SGM Holdings Corp., Mr. Martin, Mr. Brown and Mr. Komissopoulos disclaim beneficial ownership of the shares of common stock held by Aspire Capital Fund, LLC. Aspire Capital is not a licensed broker dealer or an affiliate of a licensed broker dealer

The Company and Aspire Capital were parties to a previous Common Stock Purchase Agreement, dated as of September 28, 2011, as amended August 23, 2012, which terminated pursuant to its terms in January 2014 upon the sale of the full \$20 million of common stock issuable thereunder.

DILUTION

Our net tangible book value as of March 31, 2014 was approximately \$34.2 million, or \$1.75 per share of common stock. Net tangible book value per share of common stock is calculated by subtracting our total liabilities from our total tangible assets, which is total assets less intangible assets, and dividing this amount by the number of shares of common stock outstanding.

After giving effect to (i) the issuance of 150,000 Commitment Shares and (ii) the assumed sale of 4,405,286 shares of Common Stock in the aggregate amount of \$30.0 million at an assumed offering price of \$6.81 per share (the closing price of our Common Stock on May 30, 2014) (which assumes, for purposes of this calculation, the applicability of the 19.9% Exchange Cap limitation), and after deducting the estimated offering expenses payable by us, our as adjusted net tangible book value as of March 31, 2014 would have been approximately \$64.2 million, or \$2.66 per share of Common Stock. This represents an immediate increase in net tangible book value of \$0.91 per share to existing stockholders and immediate dilution in net tangible book value of \$4.15 per share to investors participating in this offering. The following table illustrates this dilution on a per share basis:

Assumed public offering price per share ⁽¹⁾	\$ 6.81
Historical net tangible book value per share as of March 31, 2014	\$ 1.75
Increase per share attributable to investors participating in this offering	<u>\$ 0.91</u>
As adjusted net tangible book value per share after this offering	\$ 2.66
Dilution per share to investors participating in this offering	<u><u>\$ 4.15</u></u>

(1) Solely for purposes of the calculations in this table, based on the most recent practicable closing price of our Common Stock.

The shares sold in this offering in addition to the Commitment Shares, if any, will be sold from time to time at various prices. An increase of \$0.50 per share in the price at which the shares are sold from the assumed offering price at a recent price of \$6.81 per share shown in the table above, assuming all of our Common Stock in the aggregate amount of \$30.0 million is sold at that price, would increase our adjusted net tangible book value per share after the offering to \$0.94 per share and would increase the dilution in net tangible book value per share to new investors in this offering to \$4.62 per share, after deducting estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only.

The above discussion and table are based on 28,593,410 shares of common stock outstanding as of the close of business on March 31, 2014. This number excludes the following:

- options representing the right to purchase a total of 3,912,697 shares of common stock at a weighted average exercise price of \$10.22 per share;
- 1,859,802 shares of common stock which were reserved for future equity awards that may be granted in the future under our equity incentive plans;
- warrants representing the right to purchase a total of 4,491,028 shares of common stock at a weighted average exercise price of \$15.38 per share (including 225,168 warrants with a current exercise price of \$12.26 per share, issued in connection with our formerly outstanding Series E Preferred Stock, which will be subject to a weighted average anti-dilution adjustment following this offering);
- 5,329,593 shares issued in connection with the closing of our CSC Acquisition, and any shares that may be issued in the future in connection with any CSC milestone payments that become payable;
- up to 409,277 shares of common stock which may become issuable as “Contingent Shares” upon achievement of specified business milestones pursuant to the agreement governing our acquisition of Amorcyte; and
- 100 shares of common stock issuable upon conversion of our outstanding Series B Convertible Redeemable Preferred Stock.

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock. We currently intend to retain our future earnings, if any, for use in our business and therefore do not anticipate paying cash dividends in the foreseeable future. Payment of future dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs.

CAPITALIZATION

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

- on an actual basis, without giving effect to this offering and the use of net proceeds as discussed in “Use of Proceeds”;
- on an as adjusted basis to reflect the (i) issuance of the 150,000 Commitment Shares and (ii) the sale of 4,405,286 shares of Common Stock in the aggregate amount of \$30.0 million at an assumed offering price of \$6.81 per share (which assumes, for purposes of this calculation, the applicability of the 19.9% Exchange Cap limitation), and after deducting estimated offering expenses payable by us.*

* Solely for purposes of the calculations in the table below, based on the closing price of our Common Stock on May 30, 2014.

This capitalization table should be read in conjunction with management's discussion and analysis of results of operations and our consolidated financial statements and related notes included in our annual report on Form 10-K for the year ended December 31, 2013 and in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, and the other financial information included and incorporated by reference in this prospectus supplement, including the historical financial statements of CSC and the Company's pro forma financial statements included in our Current Report on Form 8-K filed on May 8, 2014.

	(in thousands)	
	As of March 31, 2014	
	Actual	Pro Forma, As Adjusted
Cash and Cash Equivalents	\$ 41,359.7	\$ 71,359.7
Shareholder's equity:		
Preferred stock, par value \$0.01, 20,000,000 shares authorized, 10,000 shares of Series B convertible redeemable preferred stock issued and outstanding actual and pro forma, as adjusted	\$ 0.1	\$ 0.1
Common stock, par value \$0.001, 500,000,000 shares authorized, 28,593,410 shares issued and outstanding, actual and 34,063,149 shares issued and outstanding, pro forma, as adjusted ⁽¹⁾	\$ 28.6	\$ 33.1
Additional paid in capital	\$ 310,377.1	\$ 340,372.5
Treasury stock, at cost	\$ (705.7)	\$ (705.7)
Accumulated deficit	\$ (250,055.7)	\$ (250,055.7)
Total shareholders' equity	\$ 59,644.4	\$ 89,644.3
Total capitalization	\$ 59,644.4	\$ 89,644.3

(1) Outstanding shares of common stock as of March 31, 2014 excludes:

- options representing the right to purchase a total of 3,912,697 shares of common stock at a weighted average exercise price of \$10.22 per share;
- 1,859,802 shares of common stock which were reserved for future equity awards that may be granted in the future under our equity incentive plans;
- warrants representing the right to purchase a total of 4,491,028 shares of common stock at a weighted average exercise price of \$15.38 per share (including 225,168 warrants with a current exercise price of \$12.26 per share, issued in connection with our formerly outstanding Series E Preferred Stock, which will be subject to a weighted average anti-dilution adjustment following this offering);
- 5,329,593 shares issued in connection with the closing of our CSC Acquisition, and any shares that may be issued in the future in connection with any CSC milestone payments that become payable;
- up to 409,277 shares of common stock which may become issuable as “Contingent Shares” upon achievement of specified business milestones pursuant to the agreement governing our acquisition of Amorcyte; and

- 100 shares of common stock issuable upon conversion of our outstanding Series B Convertible Redeemable Preferred Stock.

PLAN OF DISTRIBUTION

We entered into the Purchase Agreement with Aspire Capital on March 10, 2014. In consideration for entering into the Purchase Agreement, we will issue 150,000 shares of Common Stock to Aspire Capital. The Purchase Agreement provides that, upon the terms and subject to the conditions set forth therein, Aspire Capital is irrevocably committed to purchase up to an aggregate of \$30.0 million of shares of our Common Stock over the approximately 24-month term of the Purchase Agreement.

On any business day over the 24-month term of the 2014 Purchase Agreement (until June 2, 2016), we have the right, in our sole discretion, to present Aspire Capital with a purchase notice (each, a "Purchase Notice") directing Aspire Capital to purchase up to 50,000 Purchase Shares per business day; however, no sale pursuant to such a Purchase Notice may exceed five hundred thousand dollars (\$500,000) per business day, unless we and Aspire Capital mutually agree. We and Aspire Capital also may mutually agree to increase the number of shares that may be sold to as much as an additional 2,000,000 Purchase Shares per business day. The purchase price per Purchase Share pursuant to such Purchase Notice (the "Purchase Price") is the lower of (i) the lowest sale price for our common stock on the date of sale; or (ii) the average of the three lowest closing sale prices for our common stock during the 12 consecutive business days ending on the business day immediately preceding the purchase date. The applicable Purchase Price will be determined prior to delivery of any Purchase Notice.

In addition, on any date on which we submit a Purchase Notice to Aspire Capital for at least 50,000 Purchase Shares, we also have the right, in our sole discretion, to present Aspire Capital with a volume-weighted average price purchase notice (each, a "VWAP Purchase Notice") directing Aspire Capital to purchase an amount of our common stock equal to up to 30% of the aggregate shares of common stock traded on the next business day (the "VWAP Purchase Date"), subject to a maximum number of shares determined by us (the "VWAP Purchase Share Volume Maximum"). The purchase price per Purchase Share pursuant to such VWAP Purchase Notice (the "VWAP Purchase Price") shall be 95% of the volume weighted average price for our common stock traded on (i) the VWAP Purchase Date if the aggregate shares to be purchased on that date does not exceed the VWAP Purchase Share Volume Maximum, or (ii) the portion of such business day until such time as the aggregate shares to be purchased will equal the VWAP Purchase Share Volume Maximum. Further, if on the VWAP Purchase Date the sale price of our common stock falls below the greater of (i) 80% of the closing price of our common stock on the business day immediately preceding the VWAP Purchase Date or (ii) the price set by us in the VWAP Purchase Notice (the "VWAP Minimum Price Threshold"), the VWAP Purchase Amount will be determined using the percentage in the VWAP Purchase Notice of the total shares traded for such portion of the VWAP Purchase Date prior to the time that the sale price of our common stock fell below the VWAP Minimum Price Threshold and the VWAP Purchase Price will be 95% of the volume weighted average price of our common stock sold during such portion of the VWAP Purchase Date prior to the time that the sale price of our common stock fell below the VWAP Minimum Price Threshold.

The number of Purchase Shares covered by and timing of each Purchase Notice or VWAP Purchase Notice are determined by the Company, at our sole discretion. The aggregate number of shares that we can sell to Aspire Capital under the Purchase Agreement may in no case exceed 5,687,942 shares of our common stock (which is equal to approximately 19.9% of the common stock outstanding on the date of the Purchase Agreement, including the 150,000 Commitment Shares (the "Exchange Cap"), unless (i) shareholder approval is obtained to issue more, in which case the Exchange Cap will not apply, or (ii) stockholder approval has not been obtained and at any time the Exchange Cap is reached and at all times thereafter the average price paid for all shares issued under the Purchase Agreement (including the Commitment Shares) is equal to or greater than \$7.22 (the "Minimum Price"), a price equal to the closing sale price of our common stock on the execution date of the Purchase Agreement; provided that at no time shall Aspire Capital (together with its affiliates) beneficially own more than 19.9% of our common stock. Aspire Capital has no right to require any sales by us, but is obligated to make purchases from us as we direct in accordance with the Purchase Agreement. There are no limitations on use of proceeds, financial or business covenants, restrictions on future fundings, rights of first refusal, participation rights, penalties or liquidated damages in the Purchase Agreement. We did not pay any additional amounts to reimburse or otherwise compensate Aspire Capital in connection with the transaction. The Purchase Agreement may be terminated by us at any time, at our discretion, without any penalty or cost to us.

Aspire Capital may be an "underwriter" within the meaning of the Securities Act.

Neither we nor Aspire Capital can presently estimate the amount of compensation that any agent will receive. We know of no existing arrangements between Aspire Capital, any other shareholder, broker, dealer, underwriter, or agent relating to the sale or distribution of the shares offered by this prospectus supplement. At the time a particular offer of shares is made, a prospectus supplement, if required, will be distributed that will set forth the names of any agents, underwriters, or dealers and any other required

information.

We will pay all of the expenses incident to the registration, offering, and sale of the shares to Aspire Capital. We have agreed to indemnify Aspire Capital and certain other persons against certain liabilities in connection with the offering of shares of common stock offered hereby, including liabilities arising under the Securities Act or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Aspire Capital has agreed to indemnify us against liabilities under the Securities Act that may arise from certain written information furnished to us by Aspire Capital specifically for use in this prospectus or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities.

Aspire Capital and its affiliates have agreed not to engage in any direct or indirect short selling or hedging of our common stock during the term of the Purchase Agreement.

We have advised Aspire Capital that it is required to comply with Regulation M promulgated under the Securities Exchange Act of 1934, as amended. With certain exceptions, Regulation M precludes the selling shareholder, any affiliated purchasers, and any broker-dealer or other person who participates in the distribution from bidding for or purchasing, or attempting to induce any person to bid for or purchase any security which is the subject of the distribution until the entire distribution is complete. Regulation M also prohibits any bids or purchases made in order to stabilize the price of a security in connection with the distribution of that security. All of the foregoing may affect the marketability of the shares offered hereby this prospectus.

We may suspend the sale of shares to Aspire Capital pursuant to this prospectus for certain periods of time for certain reasons, including if the prospectus is required to be supplemented or amended to include additional material information.

This offering will terminate on the date that all shares offered by this prospectus have been sold to Aspire Capital.

LEGAL MATTERS

Lowenstein Sandler LLP, Roseland, New Jersey will pass upon the validity of the issuance of the securities offered by this prospectus supplement and the accompanying prospectus. Lowenstein Sandler LLP owns 30,100 shares of the common stock of the Company as of the date of this prospectus supplement.

EXPERTS

The consolidated financial statements as of and for the years ended December 31, 2013 and 2012, incorporated in this prospectus supplement and elsewhere in the registration statement of which this prospectus supplement forms a part, by reference from the Company's Annual Report on Form 10-K for the year ended December 31, 2013, have been audited by Grant Thornton LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

The consolidated financial statements for CSC and its subsidiaries as of and for the years ended December 31, 2013 and 2012, incorporated in this prospectus supplement and elsewhere in the registration statement of which this prospectus supplement forms a part, by reference from the Company's Current Report on Form 8-K filed with the SEC on May 8, 2014, have been audited by McGladrey LLP, an independent auditor, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus supplement is part of a registration statement on Form S-3 that we filed with the SEC. The registration statement that contains this prospectus supplement, including the exhibits to the registration statement, contains additional information about us and the common stock offered by this prospectus supplement.

We file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E. Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our public filings, including reports, proxy and information statements, are also available on the SEC's web site at <http://www.sec.gov>.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" the information contained in documents that we file with them, which means that we can disclose important information to you by referring to those documents. The information incorporated by reference is considered to be part of this prospectus supplement. Information in this prospectus supplement modifies or supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus supplement, and information that we file later with the SEC also will automatically update and supersede this information.

We incorporated by reference into this prospectus, the documents listed below and any documents that we file in the future with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, after the date of this prospectus supplement and before the completion of the offering:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2013, filed with the SEC on March 13, 2014;
- Our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2014, filed with the SEC on May 8, 2014;
- Our Current Reports on Form 8-K filed with the SEC on May 8, 2014, April 18, 2014, April 14, 2014, April 11, 2014, and March 13, 2014 (excluding any information deemed furnished pursuant to Item 2.02 or Item 7.01 of such Current Report on Form 8-K); and
- The description of our common stock set forth in our Registration Statement on Form 8-A, filed with the SEC on August 2, 2013 (including any amendment or report filed with the SEC for the purpose of updating such description).

To the extent that any statement in this prospectus supplement is inconsistent with any statement that is incorporated by reference and that was made on or before the date of this prospectus supplement, the statement in this prospectus supplement shall supersede such incorporated statement. The incorporated statement shall not be deemed, except as modified or superseded, to constitute a part of this prospectus supplement, the accompanying prospectus or the registration statement. Statements contained in this prospectus supplement as to the contents of any contract or other document are not necessarily complete and, in each instance, we refer you to the copy of each contract or document filed as an exhibit to the registration statement.

We will furnish without charge to you, upon written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. You should direct any requests for documents to:

NeoStem, Inc.
420 Lexington Avenue, Suite 350
New York, New York 10170
(212) 584-4180
Attention: Catherine M. Vaczy, Esq., General Counsel

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this document.

\$150,000,000



NEOSTEM, INC.

Common Stock
Preferred Stock
Debt Securities
Warrants
Units

We may from time to time offer and sell common stock, preferred stock, debt securities, warrants and units, having an aggregate offering price of up to \$150,000,000. We may offer and sell these securities separately or together in any combination. We may offer and sell these securities to or through underwriters, directly to investors or through agents. We will specify the terms of the securities, and the names of any underwriters or agents and their respective compensation, in supplements to this prospectus.

Our common stock is listed on the on the NYSE MKT and traded under the symbol "NBS." The closing bid price of our common stock on the NYSE MKT on August 23, 2012 was \$0.60 per share.

Investing in our securities involves risks. See "Risk Factors" at page 4 of this prospectus.

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.

This prospectus may not be used to consummate sales of securities unless it is accompanied by a prospectus supplement.

The date of this prospectus is October 3, 2012.

No dealer, salesperson or other person has been authorized to give any information or to make any representations other than those contained or incorporated by reference in this prospectus or any accompanying prospectus supplement in connection with the offer made by this prospectus or any accompanying prospectus supplement and, if given or made, such information or representations must not be relied upon as having been authorized by NeoStem, Inc. or any such person. Neither the delivery of this prospectus or any accompanying prospectus supplement nor any sale made hereunder and thereunder shall under any circumstances create an implication that there has been no change in the affairs of NeoStem, Inc. since the date hereof. This prospectus or any accompanying prospectus supplement does not constitute an offer or solicitation by anyone in any state in which such offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, using a “shelf” registration process. Under this shelf process, we may sell any combination of the securities described in this prospectus in one or more offerings up to a total dollar amount of \$150,000,000. We have provided to you in this prospectus a general description of the securities we may offer. Each time we sell securities under this shelf registration process, we will provide a prospectus supplement that will contain specific information about the terms of the offering. We may also add, update or change in the prospectus supplement or any “free writing prospectus” we may authorize to be delivered to you any of the information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus and the prospectus supplement or any free writing prospectus we may authorize to be delivered to you, you should rely on the information in the prospectus supplement or free writing prospectus, as the case may be, provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in this prospectus or any prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement. This prospectus, together with the applicable prospectus supplements and any free writing prospectus we may authorize to be delivered to you, includes all material information relating to this offering.

An investment in our securities involves certain risks that should be carefully considered by prospective investors. See “Risk Factors.”

You should read this prospectus and any prospectus supplement as well as additional information described under “Incorporation of Certain Documents by Reference” and “Where You Can Find More Information” on pages 41 and 42, respectively.

Overview

NeoStem, Inc. (“we,” “NeoStem” or the “Company”) continues to develop and build on its core capabilities in cell therapy to capitalize on the paradigm shift that we see occurring in medicine. In particular, we anticipate that cell therapy will have a large role in the fight against chronic disease and in lessening the economic burden that these diseases pose to modern society.

We are emerging as a technology and market leading company in this fast developing cell therapy market. Our multi-faceted business strategy combines a state-of-the-art contract development and manufacturing organization (CDMO) with a medically important cell therapy product development program enabling near and long-term revenue growth opportunities. Our service business and pipeline of proprietary cell therapy products work in concert, giving us a competitive advantage that we believe is unique to the biotechnology and pharmaceutical industries. Supported by an experienced scientific and business management team and a patent and patent pending (IP) portfolio, we believe we are well positioned to succeed.

Cell therapy, which now represents approximately a \$50 billion worldwide market opportunity in the burgeoning regenerative medicine industry, describes the process of introducing new cells into the body (tissue) in order to treat a disease, and comprises a separate therapeutic platform technology to that of the current three pillars of healthcare: pharmaceuticals, biologics and medical devices. It is widely considered a disruptive technology, e.g. “medicine from you for you.” Cell therapy has its origins rooted in blood transfusion, bone marrow and organ transplantation, tissue banking and reproductive *in vitro* fertilization. This 200-year journey, based initially on clinical trial and error and more recently on meaningful laboratory science, has culminated in the necessary critical mass to justify being a distinct industry in its own right. Thus, today cell therapy is considered the fourth and most recent therapeutic pillar of global healthcare. The first cell therapy approved by the U.S. Food and Drug Administration (FDA) in 2010 was PROVENGE®, (Dendreon Corporation) an autologous cellular immunotherapy for the treatment of asymptomatic or minimally symptomatic metastatic castrate resistant (hormone refractory) prostate cancer. The second approved therapy was Osiris' Prochymal® approved in Canada in May 2012 for 'graft vs. host disease' (“GVHD”). The growth rate of the cell therapy market is projected to be 15% compounded annually reaching an estimated \$88 billion by 2014 (MDB Capital Group report, 2011).

NeoStem's mission is to introduce the first cardiovascular cell therapy product to treat acute myocardial infarction. To that end through our wholly-owned subsidiary Amorcyte, LLC (“Amorcyte”), we are enrolling patients into the PreSERVE Phase 2 clinical trial in the U.S. for post AMI (acute myocardial infarction) patients and anticipate completing enrollment in 2013 with 6 months initial data readout near the end of 2013.

Supporting the regenerative medicine market, including NeoStem's Amorcyte product development pipeline, is Progenitor Cell Therapy, LLC (“PCT”), a wholly owned subsidiary of NeoStem. PCT is a leading CDMO, which is akin to the pharmaceutical industry's Contract Research Organization (CRO). This subsidiary generates approximately 14% of our current revenue and is continuing to grow.

PCT prides itself on being a problem solver (consultant), implementation expert and cGMP manufacturing service provider from product discovery to commercialization for product developers. PCT has manufactured clinical products for over 5,000 patients (14,000 products shipped), participated in over 100 peer reviewed publications, collaborated in more than 50 FDA and EU regulatory filings and has passed each and every customer and regulatory agency audit to which it has been subject.

By the end of 2012 with the merging and closing of its Boston, MA facility, PCT will have consolidated its US operations to two facilities in the U.S.: Allendale, NJ (30,000 sq. ft.) and Mountain View, CA (25,000 sq. ft.), which enables the company to more efficiently and cost effectively service the U.S. and Canadian markets with timely and responsive services. Expansion into the growing European and Asian market is also being evaluated. We anticipate that newly identified and on-going clinical trial programs combined with FDA and EU approved products will continue to expand the CDMO outsourcing market.

Other significant programs include Athelos Corporation (“Athelos”), which is approximately 80%-owned by our subsidiary, PCT. Athelos is engaged in a collaboration with Becton-Dickinson that is exploring the earlier stage clinical development of a T-cell therapy for autoimmune conditions. In addition, our pre-clinical assets include our VSEL™ Technology platform as well as our MSC (mesenchymal stem cells) product candidate for regenerative medicine. NeoStem's origins are in adult stem cell research and the collection and storage of adult stem cells.

Recent NeoStem Developments

Honing our Focus - Sale of NeoStem's 51% Interest in Erye

In October 2009, NeoStem acquired its interest in Suzhou Erye Pharmaceutical Co. Limited ("Erye") which was considered at the time to be an innovative business move into the emerging Chinese pharmaceutical industry. In 2011, the Chinese government imposed new policies affecting price and volume controls of certain pharmaceutical products, including generic antibiotics, which reduced the division's profitability and positive cash flows. The dampening of Erye's operating results was the catalyst for the Company's interest in monetizing its investment. Accordingly, on June 18, 2012, we entered into an Equity Purchase Agreement to sell our 51% interest in Erye to Suzhou Erye Economy & Trading Co., Ltd. ("EET"), the 49% owner, and its affiliate. The divestiture will bolster NeoStem's cash position through the receipt of the cash purchase price of \$12,280,000 and eliminate over \$37 million in short and long-term debt obligations. The sale of Erye will also return approximately 1,040,000 shares of the Company's Common Stock and cancels 1,170,000 Common Stock options and 640,000 Common Stock warrants. The transaction is expected to close during the 4th quarter of 2012, subject to the satisfaction of various closing conditions including Chinese regulatory approvals.

Summary of the Erye Divestiture Transaction

Pursuant to the Equity Purchase Agreement, the Total Cash Purchase Price is payable in the following manner:

- (i) the initial down payment of \$1,228,000, being 10% of the Total Cash Purchase Price, was received by us in July 2012;
- (ii) \$4,912,000, being 40% of the Total Cash Purchase Price, was paid by the Purchasers into escrow in August 2012 (the "Second Purchase Price Payment"), as follows: (x) \$2,456,000 (the "Offshore Second Purchase Price Payment") was deposited by the Purchasers into a U.S.-based escrow account (the "Offshore Escrow Account") (the Equity Purchase Agreement providing that the Offshore Second Purchase Price Payment shall be released to our subsidiary CBH upon the receipt of approval of the Erye Sale by the PRC Ministry of Commerce and/or its local counterparts as applicable ("MOFCOM Transfer Approval")) and (y) the RMB equivalent of \$2,456,000 (the "Onshore Second Purchase Price Payment") was deposited by the Purchasers into an escrow account inside the PRC (the "Onshore Escrow Account");
- (iii) also in August 2012, pursuant to an amendment to the Equity Purchase Agreement, the RMB equivalent of \$1,228,000, representing an additional 10% of the Total Cash Purchase Price, was paid by the Purchasers into the Onshore Escrow Account; and
- (iv) the RMB equivalent of \$4,912,000, being the remaining 40% of the Total Cash Purchase Price, shall be paid by the Purchasers into the Onshore Escrow Account no later than the day prior to the date on which Erye submits the application seeking approval of the Erye Sale to the MOFCOM provincial counterpart.

Closing of the Erye Sale is expected to occur by the fourth quarter of 2012, subject to the receipt of PRC regulatory approvals and the satisfaction of various closing conditions. Erye has informed us that it has completed the "Capital Increase Procedures" involving an increase to Erye's registered capital which will permit Erye to repay to EET portions of certain outstanding shareholder loans that EET had made to Erye, the Equity Purchase Agreement contemplating that the Purchasers will use the proceeds of these repayments to pay 90% of the total cash purchase price for the Erye Sale. PRC regulatory approvals that remain to be received include MOFCOM Transfer Approval (at each of the district, city and provincial levels), registration with the applicable PRC State Administration of Industry and Commerce and/or its local counterparts with respect to the Erye Sale ("SAIC Transfer Registration"), and approval of the PRC State Administration of Foreign Exchange and/or its local counterparts for the currency exchange in connection with the Erye Sale ("SAFE Transfer Approval"). Pursuant to the Equity Purchase Agreement, Erye has agreed to use its commercially reasonable best efforts to make regulatory filings and submit information necessary for the purpose of obtaining these approvals. No assurances can be given that all closing conditions will be satisfied or waived, or that the foregoing PRC regulatory approvals will be obtained on a timely basis, or at all. Furthermore, the portions of the Total Cash Purchase Price that will initially be deposited into escrow in RMB will require the approval of SAFE to be converted into U.S. dollars and repatriated into the United States. The Purchasers may terminate the Equity Purchase Agreement at any time prior to the earlier of September 30, 2012 and the MOFCOM Transfer Submission Date (that is, the date of the initial MOFCOM submission at the district level), in which case our sole right would be to retain the \$1,228,000 initial payment already received from the Purchasers.

Subject to the receipt of PRC regulatory approvals and the satisfaction of other closing conditions, we anticipate that the Erye Sale will close by fourth quarter 2012, at which time we will exit the Pharmaceutical Manufacturing - China segment. In consideration of ASC 205-20-45-1 and ASC 360-10-45-9, we have reported the financial position, results of operations and related cash flow for our Pharmaceutical Manufacturing - China segment as a discontinued operation in our Quarterly Report on Form

10-Q for the quarter ended June 30, 2012, which is incorporated by reference into this prospectus. In addition, our recast financial statements for the years ended December 31, 2010 and 2011, which reflect our Pharmaceutical Manufacturing - China and Regenerative Medicine- China segments as discontinued operations, are incorporated by reference into this prospectus from our Current Report on Form 8-K filed with the Securities and Exchange Commission on August 15, 2012.

Upon consummation of the sale transaction, we will continue as a public company focused on devoting all our time and resources to our cell therapy business, including the enrollment of patients in our PreSERVE Phase 2 clinical trial of AMR-001 for preserving heart function after a heart attack and expanding our cell therapeutic contract manufacturing business operated through our PCT subsidiary. Approximately 14% of our total revenue for fiscal year 2011 was attributable to our PCT CDMO business. Despite the fact that to date, the majority of our revenue has been generated by Erye we believe that focusing our attention and resources on cell therapy, a business that we believe is fundamentally changing the way medicine is administered, and becoming a leader in this field will be a much more rewarding direction for the Company

We intend to continue our emergence as a technology and market leading company in the fast developing cell therapy market. Our multifaceted business strategy combines a state-of-the-art CDMO with a medically important cell therapy product development program enabling near and long-term revenue growth opportunities. Our service business and pipeline of proprietary cell therapy products work in concert, giving us a competitive advantage that is unique to the biotechnology and pharmaceutical industries. Supported by an experienced scientific and business management team and a patent and patent pending (IP) portfolio, we believe we are well positioned to succeed.

NeoStem Corporate Information

Our principal executive offices are located at 420 Lexington Avenue, New York, New York 10170, and our telephone number is (212) 584-4180. We are currently located in Suite 450 and will be relocating to larger space in Suite 347 in September 2012. Our Common Stock is currently traded on the NYSE MKT under the symbol "NBS." We maintain a corporate website at www.neostem.com. The contents of our website are not incorporated by reference into this prospectus and should not be considered to be a part of this prospectus or relied upon in connection herewith.

NeoStem, Inc. was incorporated under the laws of the State of Delaware in September 1980 under the name Fidelity Medical Services, Inc. and commenced operations in the adult stem cell collection, processing and storage services business in January 2006. Unless otherwise stated, all references to "us," "our," "NeoStem," "we," the "Company" and similar designations refer to NeoStem, Inc.

This prospectus and the information incorporated by reference includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus are the property of their respective owners.

RISK FACTORS

Investing in our securities involves risk. Please see the risk factors set forth under the heading "Risk Factors" beginning on page 38 of our Annual Report on Form 10-K for the year ended December 31, 2011, as well as those set forth under the headings "Risk Factors" and "Risks Associated With the Erye Sale and the Equity Purchase Agreement" beginning on page 37 of our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2012, each of which documents is on file with the Securities and Exchange Commission and is incorporated by reference into this prospectus. Before making an investment decision, you should carefully consider these risks as well as other information we include or incorporate by reference in this prospectus and any prospectus supplement. The risks and uncertainties we have described are not the only ones facing our Company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING INFORMATION

This prospectus, any prospectus supplement and the documents we incorporate by reference in this prospectus contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements, other than statements of historical facts, that we include in this prospectus, any prospectus supplement, and in the documents we incorporate by reference in this prospectus, may be deemed forward-looking statements for purposes of the Securities Act and the Exchange Act. We use the words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "project," "will," "would" and similar expressions to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We cannot guarantee that we actually will achieve the plans, intentions or expectations disclosed in our forward-looking statements and, accordingly, you should not place undue reliance on our forward-looking statements. There are a number of important factors that could cause actual results or events to differ materially from the forward-looking statements that we make, including the factors included in the documents we incorporate by reference in this prospectus. You should read these factors and the other cautionary statements made in the documents we incorporate by reference as being applicable to all related forward-looking statements wherever they appear in this prospectus, any prospectus supplement, and any document incorporated by reference. We caution you that we do not undertake any obligation to update forward-looking statements made by us.

USE OF PROCEEDS

Unless otherwise provided in the applicable prospectus supplement, we intend to use the net proceeds from the sale of the securities under this prospectus for working capital, including research and development of cell therapeutic product candidates, expansion of our business, strategic transactions and other general corporate purposes. We will set forth in the prospectus supplement our intended use for the net proceeds received from the sale of any securities. Pending the use of the net proceeds, we may use the net proceeds to invest in investment-grade, interest-bearing securities.

THE SECURITIES WE MAY OFFER

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize all the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, about material United States federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

We may sell from time to time, in one or more offerings:

- common stock;

- preferred stock;
- debt securities;
- warrants to purchase any of the securities listed above; and
- units consisting of any combination of the securities listed above.

In this prospectus, we refer to the common stock, preferred stock, debt securities, warrants and units collectively as “securities.” The total dollar amount of all securities that we may sell will not exceed \$150,000,000.

If we issue debt securities at a discount from their original stated principal amount, then, for purposes of calculating the total dollar amount of all securities issued under this prospectus, we will treat the initial offering price of the debt securities as the total original principal amount of the debt securities.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

The following is a summary of all material characteristics of our capital stock as set forth in our certificate of incorporation and bylaws, and our outstanding warrants. The summary does not purport to be complete and is qualified in its entirety by reference to our certificate of incorporation and bylaws and the Class D warrants, the warrants issued in our November 2010 Common Stock Offering and in our November 2010 Preferred Stock Offering, the warrants issued in connection with the PCT Merger and the Amorcyte Merger, the Series NA Warrants, the warrants issued in our March 2012 underwritten offering, the warrants issued in our May-July 2012 Private Placement, the July 2012 New Warrants issued upon exercise of certain of our May-July 2012 Private Placement Warrants, the warrants issued in our August 2012 private placement, and the Certificate of Designations relating to our Series E 7% Senior Convertible Preferred Stock themselves, all of which are incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and to the provisions of the General Corporation Law of the State of Delaware, as amended.

Common Stock

We are authorized to issue 500,000,000 shares of common stock, par value \$0.001 per share ("Common Stock"). Holders of our Common Stock are entitled to one vote per share in the election of directors and on all other matter on which stockholders are entitled or permitted to vote. Holders of our Common Stock are not entitled to cumulative voting rights. Therefore, holders of a majority of the shares voting for the election of directors can elect all of the directors. Subject to the terms of any outstanding series of preferred stock, the holders of our Common Stock are entitled to dividends in the amounts and at times as may be declared by the Board of Directors out of funds legally available. Upon liquidation or dissolution, holders of our Common Stock are entitled to share ratably in all net assets available for distribution to stockholders after payment of any liquidation preferences to holders of our preferred stock. Holders of our Common Stock have no redemption, conversion or preemptive rights.

As of August 17, 2012, we had 152,545,253 shares of Common Stock issued and outstanding, exclusive of existing convertible preferred stock, options and warrants and the shares and warrants to be issued in this offering.

Preferred Stock

We are authorized to issue up to 20,000,000 shares of preferred stock, par value \$0.01 per share, with such designations, rights, and preferences as may be determined from time to time by our Board of Directors. Accordingly, our Board of Directors is empowered, without stockholder approval, to issue preferred stock with dividend, liquidation, conversion, voting, or other rights that could adversely affect the voting power or other rights of the holders of our Common Stock. The issuance of preferred stock could have the effect of restricting dividends on our Common Stock, diluting the voting power of our Common Stock, impairing the liquidation rights of our Common Stock, or delaying or preventing a change in control of our company, all without further action by our stockholders.

As of August 17, 2012, there were:

- 10,000 shares of our Series B Convertible Redeemable Preferred Stock, \$0.01 par value per share ("Series B Preferred Stock"), issued and outstanding; and
- 3,919,263 shares of our Series E 7% Senior Convertible Preferred Stock, \$0.01 par value per share (the "Series E Preferred Stock," or the "Series E Preferred Shares"), issued and outstanding.

Series B Preferred Stock

The Series B Preferred Stock ranks *pari passu* with our Common Stock with respect to the payment of dividends and to the distribution of assets upon liquidation, dissolution or winding up.

So long as any shares of the Series B Preferred Stock are outstanding, no dividend shall be declared or paid or set aside for payment or other distribution declared or made upon our Common Stock or upon any other stock ranking junior to, or on a parity with, the Series B Preferred Stock as to dividends or upon liquidation, dissolution or winding up, unless, in the case of our preferred stock, the same dividend is declared, paid or set aside for payment on all outstanding shares of the Series B Preferred Stock or in the case of our Common Stock, ten times such dividend per share is declared, paid or set aside for payment on each outstanding share of the Series B Preferred Stock.

Except as otherwise provided by law, each share of the Series B Preferred Stock has the same voting rights as ten shares of our Common Stock and the holders of the Series B Preferred Stock and the Common Stock shall vote together as one class on all matters.

The holder of any share of Series B Preferred Stock has the right, at such holder's option, to convert such share into one fully paid and non-assessable share of our Common Stock, subject to adjustment.

In the event of any voluntary or involuntary dissolution, liquidation or winding up of our Company, after any distribution of assets is made to the holders of any other class or series of stock that ranks prior to the Series B Preferred Stock in respect of distributions upon the liquidation of our company, the holder of each share of Series B Preferred Stock then outstanding shall be entitled to be paid out of our assets available for distribution to our stockholders, an amount on a *pari passu* basis equal to ten times the amount per share distributed to the holders of our Common Stock. After payment of the full amount of the distribution

to which they are entitled, the holders of shares of the Series B Preferred Stock will not be entitled to any further participation in any distribution of assets by the corporation.

Shares of Series B Preferred Stock issued and reacquired by us shall have the status of authorized and unissued shares of preferred stock, undesignated as to series, subject to later issuance.

Holders of shares of Series B Preferred Stock are not entitled to any preemptive or subscription rights in respect of any securities of the corporation.

Series E 7% Senior Convertible Preferred Stock

General. We are authorized to issue up to 20,000,000 shares of preferred stock, par value \$0.01 per share, with such designations, rights and preferences as may be determined from time to time by our Board of Directors, without further stockholder approval. Accordingly, our Board of Directors has created out of the authorized and unissued shares of our preferred stock a series of preferred stock designated as the Series E 7% Senior Convertible Preferred Stock. As of August 17, 2012, there were 3,919,263 shares of Series E 7% Senior Convertible Preferred Stock, par value \$0.01 per share (the "Series E Preferred Stock," or the "Series E Preferred Shares") issued and outstanding.

The following is a brief description of the terms of our Series E Preferred Stock. The description of the Series E Preferred Stock contained herein does not purport to be complete and is qualified in its entirety by reference to the Certificate of Designations for the Series E Preferred Stock.

Dividends. Holders of Series E Preferred Stock shall be entitled to receive dividends payable in cash (or, at our option, in shares of our Common Stock if the Equity Conditions are satisfied) on the Liquidation Preference (as defined below) of such Series E Preferred Share at the per share rate of seven percent (7%) per annum, which shall be cumulative. Dividends on the Series E Preferred Shares shall commence accruing on the Initial Issuance Date and shall be computed on the basis of a 360-day year of twelve 30-day months. Dividends shall be payable in arrears on each Mandatory Redemption Date. "Mandatory Redemption Date" is defined in the certificate of designations as March 19, 2011, and the 19th day of each calendar month thereafter (or the next trading day thereafter) and ending on and including May 20, 2013 (the "Maturity Date"). The Maturity Date will be deemed to be a Mandatory Redemption Date.

Liquidation Preference. In the event of any liquidation, dissolution or winding up of our company, either voluntary or involuntary (a "Liquidation Event"), the holders of the Series E Preferred Shares shall be entitled to receive, out of our assets available for distribution to stockholders ("Liquidation Funds"), prior and in preference to any distribution of any of our assets to the holders of any other class or series of equity securities, the amount of one dollar (\$1.00) per share plus all accrued but unpaid dividends (the "Liquidation Preference"). After payment of the full amount of the Liquidation Preference, in the case of a Liquidation Event, the holders will not be entitled to any further participation in any distribution of our assets; provided that the foregoing shall not affect any rights which holders may have with respect to any requirement that our company repurchase the Series E Preferred Shares or for any right to monetary damages. All the preferential amounts to be paid to the holders of the Series E Preferred Shares shall be paid or set apart for payment before the payment or setting apart for payment of any amount for, or the distribution of any Liquidation Funds of our company to the holders of shares of other classes or series of our preferred stock junior in rank to the Series E Preferred Shares in connection with a Liquidation Event.

Mandatory Monthly Redemption.

The certificate of designations provides that "Mandatory Redemption Shares" means, with respect to (a) any Mandatory Redemption Date (other than the Maturity Date) an amount equal to 1/27th of the Series E Preferred Shares initially issued pursuant to the stock purchase agreement (regardless of whether any holder has converted any Series E Preferred Shares or we have optionally redeemed any Series E Preferred Shares) and (b) the Maturity Date, all outstanding Series E Preferred Shares. On each applicable Mandatory Redemption Date, we shall redeem the Mandatory Redemption Shares at an aggregate redemption price equal to the sum of (x) the product of (A) the Liquidation Preference and (B) the number of Mandatory Redemption Shares required to be redeemed on such Mandatory Redemption Date plus (y) any and all accrued but unpaid dividends on all of the outstanding Series E Preferred Shares (the "Mandatory Redemption Price"). The Mandatory Redemption Price shall be payable, at our option, in cash or shares of our Common Stock or any combination of cash and shares of our Common Stock, provided, however, that no portion of the Mandatory Redemption Price may be paid in shares of our Common Stock unless the Equity Conditions are satisfied or waived by the holders of a majority of the Series E Preferred Shares (the "Required Holders") in writing prior to delivery of the applicable Mandatory Redemption Notice (as defined below); provided, further, however, that the portion of the applicable Mandatory Redemption Price that we elect to pay in shares of our Common Stock (if any) shall not exceed the Dollar Volume Limitation (unless waived by the Required Holders in writing).

On a date not less than twenty-two (22) trading days, but in no event more than twenty-five (25) trading days, prior to each Mandatory Redemption Date (the “Mandatory Redemption Notice Date”), we shall deliver a written notice (a “Mandatory Redemption Notice”) to the holders, which shall either: (i) confirm that the entire applicable Mandatory Redemption Price shall be paid in cash; or (ii) (A) state that we elect to pay all or a portion of the Mandatory Redemption Price in shares of our Common Stock, (B) specify the portion that we elect to pay in cash (expressed in dollars) (such amount, the “Cash Payment Amount”) and the portion that we elect to pay in shares of our Common Stock (expressed in dollars) (such portion a “Stock Payment Amount”), which amounts when added together must equal the applicable Mandatory Redemption Price, (C) certify that the Equity Conditions (as defined below) are then satisfied (or waived by the Required Holders), (D) state the Dollar Volume Limitation (expressed in dollars) and certify that the Stock Payment Amount does not exceed such Dollar Volume Limitation and (E) certify that the Maximum Share Amount (as defined below) has not been exceeded. If (x) we do not timely deliver a Mandatory Redemption Notice or (y) the Equity Conditions are not satisfied (unless waived by the Required Holders), then we shall be deemed to have delivered, a Mandatory Redemption Notice electing to pay the entire Mandatory Redemption Price in cash. The certificate of designations provides that “Dollar Volume Limitation” means fifteen percent (15%) of the aggregate dollar trading volume of our Common Stock on the NYSE MKT (or other applicable trading market) over the twenty-two (22) consecutive trading day period ending on the trading day immediately preceding the date of the Mandatory Redemption Notice or Optional Redemption Notice, as applicable. The term “dollar trading volume” for any trading day shall be determined by multiplying the Daily VWAP by the volume as reported on Bloomberg for such trading day.

The term “Equity Conditions” means each of the following: (i) on each day during the Equity Conditions Measuring Period, all shares of our Common Stock to be issued on the applicable Mandatory Redemption Date (or such other date on or event for which the Equity Conditions are required to be satisfied) shall be eligible for resale by the holder without restriction and without need for additional registration under any applicable federal or state securities laws, and we shall have no knowledge of any fact that would cause any shares of Common Stock not to be so eligible for resale by the holder without restriction and without need for additional registration under any applicable federal or state securities laws; (ii) on each day during the Equity Conditions Measuring Period, the shares of Common Stock are designated for listing on a trading market and shall not have been suspended from trading on such trading market nor shall delisting or suspension by such exchange or market have been threatened or pending in writing by such exchange nor shall there be any Securities and Exchange Commission or judicial stop trade order or trading suspension stop order; (iii) any shares of our Common Stock to be issued in connection with the applicable Mandatory Redemption Date (or such other date on or event for which the Equity Conditions are required to be satisfied) may be issued in full without violating the rules or regulations of the trading market or any applicable laws; (iv) on each day during the Equity Conditions Measuring Period, there shall not have occurred and be continuing, unless waived by the holder, either (A) a Trigger Event (as defined below) or (B) an event that with the passage of time or giving of notice would constitute a Trigger Event; (v) on each day during the Equity Conditions Measuring Period, we have not provided any holder with any non-public information; (vi) on each day during the Equity Conditions Measuring Period, neither the registration statement of which the prospectus supplement pertaining to our senior convertible preferred stock offering is a part nor the prospectus nor such prospectus supplement contains any untrue statement of a material fact or omits to state a material fact necessary in order to make the statements made therein, in the light of the circumstances under which they were made, not misleading and such registration statement, prospectus and such prospectus supplement comply with all applicable securities laws as to form and substance (unless the issuable shares of Common Stock may be sold without restriction); (vii) our transfer agent for the shares of our Common Stock is participating in the Depository Trust Company (“DTC”) Fast Automated Securities Transfer Program; and (viii) all shares of our Common Stock to be issued in connection with the applicable Mandatory Redemption Date (or such other date on or event for which the Equity Conditions are required to be satisfied) are duly authorized and will be validly issued, fully paid and non-assessable upon issuance, free and clear of all liens, claims or encumbrances, and the issuance thereof will not require any further approvals of our board of directors or stockholders. “Equity Conditions Measuring Period” means the period beginning twenty (20) trading days prior to the applicable Mandatory Redemption Date (or such other date on or event for which the Equity Conditions are required to be satisfied) and ending on and including such Mandatory Redemption Date.

To the extent that we elect (or are required) to pay all or any portion of the applicable Mandatory Redemption Price in shares of our Common Stock, the applicable Stock Payment Amount will be paid as follows:

- (A) twenty-one (21) trading days prior to the applicable Mandatory Redemption Date (the “First Advance Date”), we shall deliver to the holders a number of shares of our Common Stock determined by dividing (x) the Stock Payment Amount for such Mandatory Redemption Date by (y) ninety-two percent (92%) of the Daily VWAP on the trading day immediately preceding such Advance Date (the “First Advance Shares”);
- (B) eleven (11) trading days prior to the applicable Mandatory Redemption Date (the “Second Advance Date” and together with the First Advance Date, the “Advance Dates” and each, an “Advance Date”), we shall deliver to the holders a number of shares of our Common Stock equal to the positive difference (if any) between (x) the quotient of (1) the Stock Payment Amount and (2) the average of the five lowest Daily VWAPs during the first (10) ten trading days of the applicable Stock

Payment Pricing Period and (y) the number of First Advance Shares delivered to the holders in connection with such Mandatory Redemption Date (the “Second Advance Shares” and together with the First Advance Shares, the “Advance Shares”); and

- (C) not later than three (3) trading days after the applicable Mandatory Redemption Date, we shall deliver an additional number of shares of our Common Stock (the “True-Up Shares”), if any, to the holders equal to the positive difference between (a) the Stock Payment Amount divided by the Stock Payment Price for such Mandatory Redemption Date and (b) the Advance Shares; provided; however, that if clause (b) exceeds clause (a), then each holder shall return its pro rata portion of such excess number of shares of our Common Stock to us, and such excess shares shall immediately be deemed cancelled effective as of the True Up.

“Daily VWAP” means, for any date, (i) the daily volume weighted average price of our Common Stock for such date on the NYSE MKT as reported by Bloomberg; (ii) if our Common Stock is not then listed on the NYSE MKT, the daily volume weighted average price of our Common Stock for such date on such other trading market where our Common Stock is then listed as reported by Bloomberg; (iii) if the foregoing do not apply, the volume weighted average price of our Common Stock in the over-the-counter market on the electronic bulletin board for our Common Stock as reported by Bloomberg, or, if no volume weighted average price is reported for such security by Bloomberg, the highest bid as reported on the “pink sheets” at the close of trading; or (iv) in all other cases, the fair market value of a share of our Common Stock as determined by an independent appraiser selected in good faith by the Required Holders and reasonably acceptable to us.

To the extent that we elect to pay all or any portion of the applicable Mandatory Redemption Price in shares of our Common Stock:

- (A) to the extent that the aggregate number of Advance Shares or True-Up Shares to be delivered to a holder in respect of any individual Stock Payment Amount would cause such holder to exceed the Beneficial Ownership Limitation (as defined below under “Ownership Cap”), then, (I) the holder shall provide written notice to us that such delivery of all or a portion of the Advance Shares or True-Up Shares would cause such holder to exceed the Beneficial Ownership Limitation, and (II) in addition to delivery of the number of Advance Shares or True-Up Shares that would not cause such holder to exceed the Beneficial Ownership Limitation, we shall pay to such holder in lieu of such number of Advance Shares or True-Up Shares that would cause such holder to exceed the Beneficial Ownership Limitation (such excess number of shares, the “Excess Shares”), not more than the later of three (3) trading days after the Mandatory Redemption Date or ten (10) trading days after the date of such holder’s written notice, an amount in cash equal to the portion of the Stock Payment Amount that would otherwise be payable in respect of the Excess Shares;
- (B) to the extent that such Stock Payment Amount, when aggregated with any shares of our Common Stock already issued in respect of all of the Series E Preferred Shares, would cause the Maximum Share Amount to be exceeded, then that portion of such Stock Payment Amount that would not exceed the Maximum Share Amount shall be delivered to the holders hereunder in shares of our Common Stock as provided above, ratably based on the holders’ relative ownership of the outstanding Series E Preferred Shares, and we shall pay to the holders, not more than three (3) trading days after the Mandatory Redemption Date, an amount in cash equal to the Stock Replacement Payment in lieu of any portion of such Stock Payment Amount that would cause the Maximum Share Amount to be exceeded;
- (C) if the Equity Conditions are neither (x) satisfied nor (y) waived, on the trading day immediately preceding the First Advance Date and/or on the First Advance Date, or if the Daily VWAP cannot be determined on the trading day immediately preceding the First Advance Date, or if we fail to deliver the First Advance Shares to the holders on the First Advance Date, then the holder may, at its option upon written notice to us, require us to pay to such holder, not later than three (3) trading days after the Mandatory Redemption Date, an amount of cash equal to the Stock Replacement Payment in lieu of such Stock Payment Amount; or
- (D) if subsequent to the delivery of the First Advance Shares (A) the Equity Conditions are neither (x) satisfied nor (y) waived in accordance with the terms hereof, as applicable, on any day of the Stock Payment Pricing Period or (B) if the Daily VWAP cannot be determined on any day of the Stock Payment Pricing Period, then each holder may, at its option, elect in a written notice to us to redeliver all or any portion of the Advance Shares to us and we will pay to such holder, not later than three (3) trading days after the Mandatory Redemption Date, an amount of cash equal to the Stock Replacement Payment in lieu of such portion of the Stock Payment Amount for which such holder has elected in writing to redeliver Advance Shares to us.

The “Stock Replacement Payment” shall be determined according to the following formula:

$$\text{SRP} = (\text{X}/\text{Y}) * \text{S}$$

For the purposes of the foregoing formula:

SRP = Stock Replacement Payment

X = the average Daily VWAP of the shares of our Common Stock for the applicable Stock Payment Pricing Period

Y = the Stock Payment Price for the applicable Stock Payment Pricing Period

S = the Stock Payment Amount (or, (A) in the case that either or both of Maximum Share Amount and/or Beneficial Ownership Limitation is exceeded as provided above, only that portion of such Stock Payment Amount that would exceed the Maximum Share Amount and/or Beneficial Ownership Limitation, as applicable, and/or (B) that portion of the Stock Payment Amount for which the holder has elected in its written notice to redeliver Advance Shares to us).

Any shares of our Common Stock required to be delivered by us to a holder shall be credited to such holder's or its designee's balance account with DTC through its Deposit/Withdrawal at Custodian system ("DWAC").

Each mandatory redemption (and the related payment of the Mandatory Redemption Price) shall be made pro rata among the holders based on each holder's relative percentage ownership of the outstanding Series E Preferred Shares.

Notwithstanding the delivery of a Mandatory Redemption Notice, the holder may deliver a Conversion Notice with respect to all or any portion of the specific Mandatory Redemption Shares to be redeemed on the applicable Mandatory Redemption Date at any time prior to such Mandatory Redemption Date. Any Advance Shares delivered to such holder in connection with such Mandatory Redemption Date shall count towards the number of shares of our Common Stock that we will be obligated to deliver on the applicable Share Delivery Date (as defined below), and to the extent that the Advance Shares exceeds the number of shares of our Common Stock that we would be required to deliver on the applicable Share Delivery Date, the holder shall return such excess to us.

Each and every time that we sell any shares of our Common Stock pursuant to any Equity Line, we shall immediately deliver a written notice to each holder (an "Equity Line Draw Notice"), which Equity Line Draw Notice shall state the aggregate purchase price for such shares of our Common Stock (the "Equity Line Aggregate Purchase Price"). Each holder may, at its option, by delivering a written notice to us, require us to pay the Mandatory Redemption Price (or the appropriate portion thereof) on the next succeeding Mandatory Redemption Date (or to the extent that the date of such Equity Line Draw notice is subsequent to the date of the Mandatory Redemption Notice for such Mandatory Redemption Date, then the next succeeding Mandatory Redemption Date) in shares of our Common Stock in an amount equal to its pro rata portion of the Equity Line Aggregate Purchase Price. To the extent that the Equity Line Aggregate Purchase Price exceeds the aggregate amount of the entire Mandatory Redemption Price for such Mandatory Redemption Date, then on each succeeding Mandatory Redemption Date the holder may, at its option, by delivering a written notice to us, require us to pay its pro rata portion of the applicable Mandatory Redemption Price in shares of our Common Stock until we have made aggregate payments in shares of our Common Stock equal to its pro rata portion of the entire Equity Line Aggregate Purchase Price. Notwithstanding anything to the contrary, all payments of Mandatory Redemption Price made in shares of our Common Stock shall be subject the requirement to make the appropriate Stock Replacement Payment if applicable. Pro rata portion for a holder is the number of Series E Preferred Shares then held by such holder divided by the aggregate number of outstanding Series E Preferred Shares.

Optional Redemption. We may, at our option, redeem the Series E Preferred Shares, at any time and from time to time, in whole or in part (but not less than 1,000,000 Series E Preferred Shares at any one time) for an amount equal to (a) the liquidation preference per Series E Preferred Share plus any accrued and unpaid dividends through the optional redemption date (the "Base Redemption Price") plus (b) (i) if such prepayment occurs on or before the twelve month anniversary of the closing, an amount equal to 15% of the Base Redemption Price or (ii) if such prepayment occurs at any time after the twelve month anniversary of the closing date, an amount equal to 10% of the Base Redemption Price (the additional amount under clause (b) being referred to as the "Additional Redemption Price"). The Base Redemption Price will be paid in cash and the Additional Redemption Price will be paid in cash or, at our option and provided (w) the Equity Conditions are satisfied (unless waived by the Required Holders), (x) the portion of the Additional Redemption Price to be paid in shares of our Common Stock does not exceed the Dollar Volume Limitation (unless waived by the Required Holders), (y) the Maximum Share Amount is not exceeded and (z) the Daily VWAP is available on the trading day immediately preceding the First Optional Redemption Advance Date and on each day of the Stock Payment Pricing Period, in shares of our Common Stock.

We will deliver written notice of optional redemption to the holders 30 trading days prior to the date we set for such optional redemption, which may not be a Mandatory Redemption Date or any day of a Stock Payment Pricing Period with respect to any mandatory redemption date. Each holder may submit a conversion notice for the specific Series E Preferred Shares to be redeemed at any time prior to the optional redemption date. The optional redemption notice will specify the number of Series E Preferred Shares to be redeemed and what portion of the Additional Redemption Price will be paid in shares of our Common Stock (expressed in dollars), what portion of the Additional Redemption Price will be paid in cash (expressed in dollars) and (A) certify that the Equity Conditions are satisfied, (B) state the Dollar Volume Limitation (expressed in dollars) and certify that the portion of the Additional Redemption Price to be paid in shares of our Common Stock does not exceed such Dollar Volume Limitation and (C) certify that the Maximum Share Amount has not been exceeded. The optional redemption notice will be irrevocable.

To the extent that any portion of the Additional Redemption Price will be paid in shares of our Common Stock, 21 trading days prior to the optional redemption date (the "First Optional Redemption Advance Date"), we will advance to the holders a number of shares of our Common Stock determined by dividing (x) that portion of the Additional Redemption Price to be paid in shares of our Common Stock by (y) 92% of the Daily VWAP on the trading day immediately preceding the First Optional Redemption Advance Date (the "First Optional Redemption Advance Shares"). In addition, 11 trading days prior to the applicable optional redemption date (the "Second Optional Redemption Advance Date" and together with the First Optional Redemption Advance Date, the "Optional Redemption Advance Dates" and each, an "Optional Redemption Advance Date"), we will advance to the holders an additional number of shares of our Common Stock equal to the positive difference (if any) between (x) the quotient of (1) the portion of the Additional Redemption Price to be paid in shares of our Common Stock and (2) the average of the five lowest Daily VWAPs during the first 10 trading days of the applicable Stock Payment Pricing Period and (y) the number of First Optional Redemption Advance Shares delivered to the holders in connection with such optional redemption date (the "Second Optional Redemption Advance Shares" and together with the First Optional Redemption Advance Shares, the "Optional Redemption Advance Shares"). Not later than three trading days after the optional redemption date, we will deliver an additional number of shares of our Common Stock, if any, to the holder equal to the positive difference between (1) that portion of the Additional Redemption Price to be paid in shares of our Common Stock divided by the Stock Payment Price and (2) the Optional Redemption Advance Shares. If clause (2) of the immediately preceding sentence exceeds clause (1) of the immediately preceding sentence, then each holder shall return to us its pro rata portion of such excess number of shares of our Common Stock. No holder shall have any liability to us to the extent that any Optional Redemption Advance Shares that are returned to us pursuant to the immediately preceding sentence decrease in value following the applicable Optional Redemption Advance Date.

Optional Conversion by the Holders. Each holder of the Series E Preferred Shares shall have the right at any time and from time to time, at the option of such holder, to convert all or any portion of the Series E Preferred Shares held by such holder, for such number shares of our Common Stock, free and clear of any liens, claims or encumbrances, as is determined by dividing (i) the Liquidation Preference times the number of Series E Preferred Shares being converted, by (ii) the Conversion Price (as defined below) in effect on the Conversion Date (as defined below). Immediately following such conversion, the persons entitled to receive the shares of our Common Stock upon the conversion of Series E Preferred Shares shall be treated for all purposes as having become the owners of such shares of our Common Stock, subject to the rights provided herein to holders. Pursuant to the certificate of designations, the initial "Conversion Price" was \$2.0004, subject to adjustment as provided therein. As of August 17, 2012, the adjusted Conversion Price was \$1.20. The Conversion Price is subject to further adjustment in accordance with the terms of the certificate of designations.

The Conversion Price is subject to adjustment under the following circumstances:

- (i) in the event we effect a stock split or combination of our outstanding Common Stock, then the conversion price then in effect will be proportionately decreased or increased, as applicable.
- (ii) in the event we make, issue or set a record date for the determination of holders of our Common Stock entitled to receive a dividend or other distribution payable in shares of our Common Stock, then the conversion price shall be decreased by multiplying the conversion price then in effect by a fraction equal to: (a) the total number of shares of our Common Stock issued and outstanding immediately prior to such issuance or the close of business on such record date divided by (b) the total number of shares our Common Stock issued and outstanding immediately prior to such issuance or the close of business on such record date plus the number of shares of our Common Stock issuable in payment of such dividend or distribution.
- (iii) in the event we make, issue or set a record date for the determination of holders of our Common Stock entitled to receive a dividend or other distribution payable in securities or property other than shares of our Common Stock, then an appropriate revision shall be made to conversion price then in effect such that the holders of the Series E Preferred Shares shall receive upon conversion thereof, in addition to the shares of our Common Stock to which the holders would be

entitled, the number of securities or other property that they would have received had such holders converted their Series E Preferred Shares into shares of our Common Stock on the date of such event.

- (iv) in the event we issue or sell shares of our Common Stock (other than as provided above in connection with a stock split or combination or the payment of certain dividends and distributions) at a price per share less than the Conversion Price, or without consideration, the Conversion Price then in effect upon each such issuance shall be adjusted by multiplying the Conversion Price by a fraction equal to: (a) the total number of shares of our Common Stock issued and outstanding immediately prior to such issuance plus the number of shares of our Common Stock which the aggregate consideration for the total number of such additional shares of our Common Stock so issued would purchase at a price per share equal to the Conversion Price then in effect divided by (b) the number of shares of our Common Stock outstanding immediately after the issuance of such additional shares.
- (v) in the event we shall issue or sell any rights, warrants or options to purchase or other securities convertible into or exchangeable or exercisable for, directly or indirectly, any shares of our Common Stock or securities convertible into or exchangeable or exercisable for, directly or indirectly, shares of our Common Stock or common stock equivalents and the price per share at which such additional shares of our Common Stock may be issued pursuant to any such common stock equivalent shall be less than the Conversion Price then in effect, or if after the issuance of any common stock equivalents, the price per share at for which such additional shares of our Common Stock may be issued pursuant to any such common stock equivalent is thereafter amended or adjusted such that the price as so amended or adjusted shall be less than the Conversion Price then in effect, then the conversion price then in effect upon each such issuance or adjustment shall be adjusted by multiplying the conversion price by a fraction equal to: (a) the total number of shares of our Common Stock issued and outstanding immediately prior to such issuance plus the number of shares of our Common Stock which the aggregate consideration for the total number of such additional shares of our Common Stock so issued would purchase at a price per share equal to the conversion price then in effect divided by (b) the number of shares of our Common Stock outstanding immediately after the issuance of such additional shares.

Notwithstanding the foregoing, the Conversion Price will not be adjusted for the sale or issuance of “Excluded Securities,” which are defined in the certificate of designations as the following: (a) shares of our Common Stock or common stock equivalents issued pursuant to a stock option plan that has been approved by our Board of Directors and our stockholders, pursuant to which our securities may be issued only to a person eligible for award under such plan, (b) shares of our Common Stock or common stock equivalents issued to employees or consultants (including in connection with investor relations activities) for compensatory purposes, (c) shares of our Common Stock or common stock equivalents issued upon the exercise or conversion of common stock equivalents outstanding on the closing date for the offering of the Series E Preferred Stock, (d) shares of our Common Stock or common stock equivalents issued to investors in our common stock offering that was conducted concurrently with the offering of Series E Preferred Stock, (e) shares of our Common Stock or common stock equivalents issued in the PCT Merger, (f) shares of our Common Stock or common stock equivalents issued in the offering of the Series E Preferred Stock, including pursuant to the certificate of designations or upon exercise of the warrants offered in connection with the Series E Preferred Stock, and (g) shares of our Common Stock or common stock equivalents issued or deemed to be issued in connection with any acquisition by our company, whether through a merger, an acquisition of stock or an acquisition of assets, or a license, of any business, product, assets or technologies, or any strategic partnership, strategic investment or joint venture involving any technology or product, or any other transaction the primary purpose of which is not to raise capital; provided however, that the number of shares of our Common Stock which may be issued pursuant to this clause (g) in any transaction or series of related transactions shall not exceed 33% of the number of shares of our Common Stock outstanding immediately prior to any such transaction.

In case of any reorganization or any reclassification of our capital stock or any consolidation or merger of our company with or into any other corporation or corporations or a sale or transfer of all or substantially all of our assets to any other person or a “going private” transaction under Rule 13e-3 promulgated pursuant to the Securities Exchange Act of 1934 (the “Exchange Act”), as amended, then, as part of such reorganization, consolidation, merger, or transfer if the holders of shares of our Common Stock receive any publicly traded securities as part or all of the consideration for such reorganization, reclassification, consolidation, merger or sale, then it shall be a condition precedent of any such event or transaction that provision shall be made such that each Series E Preferred Share shall thereafter be convertible into such new securities at a conversion price and pricing formula which places the holders of Series E Preferred Shares in an economically equivalent position as they would have been if not for such event. The foregoing does not limit the right that holders of the Series E Preferred Shares have to require us to repurchase the Series E Preferred Shares. See “Mandatory Repurchase By Us” below.

Reservation of Shares Issuable Upon Conversion. We shall at all times reserve and keep available out of our authorized but unissued shares of our Common Stock, solely for the purposes of effecting the conversion and/or redemption of the Series E Preferred Shares, an number of shares of our Common Stock equal to 200% of the number of shares issuable upon conversion of the Series E Preferred Shares at the conversion price then in effect. If at any time while any of the Series E Preferred Shares remain

outstanding we do not have a sufficient number of authorized and unreserved shares of our Common Stock to satisfy such obligation to reserve for issuance upon conversion and/or redemption of the Series E Preferred Shares, then we shall promptly take all action necessary to increase the number of authorized shares of our Common Stock to an amount sufficient to allow us to satisfy such obligation to reserve for issuance upon conversion and/or redemption of the Series E Preferred Shares. Without limiting the generality of the foregoing sentence, as soon as practicable after the date on which we fail to have a sufficient number of authorized but unissued shares of our Common Stock available to satisfy such obligation, but in no event later than sixty (60) days (or the lesser of (i) ninety (90) days if the proxy statement is reviewed by the staff of the Securities and Exchange Commission or (ii) ten (10) days after the staff of the SEC indicated that it has no further comments to such proxy statement) after the occurrence of such failure, we shall hold a meeting of our stockholders for the approval of an increase in the number of authorized shares of our Common Stock. In connection with such meeting, we shall provide each stockholder with a proxy statement and shall use our reasonable best efforts to solicit our stockholders' approval of such increase in authorized shares of our Common Stock and to cause our board of directors to recommend to the stockholders that they approve such proposal.

Fractional Shares. No fractional shares shall be issued upon the conversion of any Series E Preferred Shares. All shares of our Common Stock (including fractions thereof) issuable upon conversion of more than one Series E Preferred Share by a holder thereof and all Series E Preferred Shares issuable upon the purchase thereof shall be aggregated for purposes of determining whether the conversion and/or purchase would result in the issuance of any fractional share. If, after the aforementioned aggregation, the conversion and/or purchase would result in the issuance of a fraction of a share of our Common Stock, we shall, in lieu of issuing any fractional share, either round up the number of shares to the next highest whole number or, at our option, pay the holder otherwise entitled to such fraction a sum in cash equal to the fair market value of such fraction on the conversion date (as determined in good faith by our Board of Directors).

Failure to Redeliver. If any holder fails to re-deliver shares of our Common Stock to us within ten (10) trading days of being required to do so in connection with a Mandatory Redemption or an optional redemption by us, then, unless such shares of Common Stock have been called by us, we may, at our option, redeem a number of Series E Preferred Shares having a Liquidation Preference equal in value to the product of (x) such number of shares of our Common Stock and (y) the Stock Payment Price for such Mandatory Redemption Date or Optional Redemption Date, the case may be, in lieu of requiring such holder to return such shares of Common Stock.

Mandatory Repurchase by Us. Each holder of Series E Preferred Shares shall have the unilateral option and right to compel us to repurchase for cash any or all of such holder's Series E Preferred Shares within three days of a written notice requiring such repurchase (provided that no written notice shall be required for if any of the events described in clauses (v) and (vi) below occur and demand for repurchase shall be deemed automatically made upon the occurrence of any of those events), at a price per Series E Preferred Share equal to the sum of (a) the liquidation preference plus (b) any and all accrued and unpaid dividends on the Series E Preferred Shares (the sum of (a) and (b), the "Base Mandatory Repurchase Price") plus (c) (i) if such demand for repurchase occurs on or before the twelve month anniversary of the closing date, an amount equal to 15% of the Base Mandatory Repurchase Price, or (ii) if such demand for repurchase occurs at any time after the twelve month anniversary of the closing date, an amount equal to 10% of the Base Mandatory Repurchase Price, if any of the following events shall have occurred or are continuing:

- (i) A Change in Control Transaction (as defined below);
- (ii) A "going private" transaction under SEC rules;
- (iii) A tender offer by our company under SEC Rule 13e-4;
- (iv) the suspension from trading or the failure of our Common Stock to be listed on a trading market for a period of five consecutive trading days or for more than an aggregate of 10 trading days in any 365-day period;
- (v) the entry by a competent court of (i) a decree or order for relief pertaining to our company or any of our subsidiaries under any applicable federal or state bankruptcy, insolvency, reorganization or other similar law or (ii) a decree or order adjudging our company or any of our subsidiaries as bankrupt or insolvent or (iii) appointing a custodian, receiver, trustee or other similar official for our company or any of our subsidiaries or of any substantial part of our property, or ordering the liquidation of our company's affairs, and the continuance of any such decree or order for a period of 60 consecutive days;
- (vi) the commencement by our company or any of our subsidiaries of a voluntary case or proceeding under any applicable federal or state bankruptcy, insolvency, reorganization or other similar law, or the consent by us to the entry of a decree or order for relief in an involuntary case or proceeding under any applicable federal or state bankruptcy, insolvency, reorganization or other similar law or to the commencement of any bankruptcy or insolvency case or proceeding against

our company, or the consent by us to the appointment of or taking possession by a custodian, receiver, trustee or other similar official of our company or of any substantial part of our property, or the making by us of an assignment for the benefit of creditors, or the admission by our company in writing of its inability to pay its debts generally as they become due;

- (vii) following an Authorized Share Failure (as defined), our failure to receive stockholder approval to approve the required increase in the number of shares of our Common Stock within five days after the Meeting Outside Date (as defined); or
- (viii) our failure to deliver shares of our Common Stock on any Share Delivery Date, Advance Date, mandatory redemption date or optional redemption date, if such failure continues for two (2) trading days after the date that delivery of shares of Common Stock is due;
- (ix) our failure to pay any amounts when and as due pursuant to the certificate of designations or any other document relating to the issuance of the Series E Preferred Shares, if such failure continues for two (2) trading days after the date that such payment is due;
- (x) our breach of certain covenants contained in the certificate of designations and the stock purchase agreement;
- (xi) our company or any of its subsidiaries shall (A) default in any payment of any amount or amounts of principal of or interest on any indebtedness the aggregate principal amount of which indebtedness is in excess of \$1,000,000 or (B) default in the observance or performance of any other agreement or condition relating to any such indebtedness, or any other event shall occur or condition exist, as a result of which the holder or holders or beneficiary or beneficiaries of such indebtedness or a trustee on their behalf have declared such indebtedness to be due prior to its stated maturity;
- (xii) the effectiveness of the registration statement pertaining to the Series E Preferred Shares or the ability to use the applicable prospectus supplement and the prospectus lapses for any reason and continues for a period of 10 consecutive days or for more than an aggregate of 20 days in any 365-day period;
- (xiii) we breach any representation, warranty, covenant or other term or condition of the certificate of designations, the stock purchase agreement or the warrant to be issued with the Series E Preferred Shares, except to the extent that such breach would not have a material adverse effect (as defined in the stock purchase agreement), and except in the case of a breach of a covenant which is curable, only if such breach remains uncured for a period of at least 10 calendar days (the events described in clauses (v), (vi), (viii), (ix), (x), (xi), (xii) and (xiii) are collectively referred to as the “Trigger Events” and each, as a “Trigger Event”).

A “Change in Control Transaction” will be deemed to exist if (i) there occurs any consolidation or merger of our company with or into any other corporation or other entity or person (whether or not our company is the surviving corporation), or any other corporate reorganization or transaction or series of related transactions in which in excess of 50% of the voting power in our company is transferred through a merger, consolidation, tender offer or similar transaction, (ii) any person, together with its affiliates and associates, beneficially owns or is deemed to beneficially own (as described in Rule 13d-3 under the Exchange Act without regard to the 60-day exercise period) in excess of 50% of the voting power in our company (provided, however, that if any person is immediately prior to the closing date a beneficial owner of 40% or more of our Common Stock, it shall not be deemed to be a Change of Control Transaction if such person increases its beneficial ownership percentage by not more than 10 percentage points), (iii) there is a replacement of more than one-half of the members of our board of directors which is not approved by those individuals who are members of our board on the date thereof, in one or a series of related transactions or (iv) a sale or transfer of all or substantially all of our assets, determined on a consolidated basis; provided, however, that a Change in Control Transaction will not be deemed to have occurred pursuant to clause (iv) if such sale or transfer is the sale or transfer of not more than one business segment during the period from the closing of the offering of the Series E Preferred Shares (November 19, 2010) through the Maturity Date and we remain a publicly traded corporation and if, on the effective date of the sale or transfer described therein, we deposit funds in the escrow account (as defined in the stock purchase agreement) such that the balance in the escrow account after such deposit is the lesser of \$5 million or 100% of the aggregate liquidation preference of the outstanding Series E Preferred Shares.

Ownership Cap. Notwithstanding anything to the contrary set forth herein, at no time may we issue to a holder, shares of our Common Stock if the number of shares of our Common Stock to be issued pursuant to such issuance would exceed, when aggregated with all other shares of our Common Stock beneficially owned by such holder at such time (as determined in accordance with relevant Exchange Act rules), the number of shares of our Common Stock that would result in the holder beneficially owning (as determined in accordance with relevant Exchange Act rules) more than 4.9% (the “Beneficial Ownership Limitation”) of our then issued and outstanding Common Stock. Each holder shall have the right (with respect to itself only) to waive such ownership cap

upon not less than sixty-five (65) days' prior notice to us. Notwithstanding the foregoing, the holder shall have the right to: (A) at any time and from time to time immediately reduce the Beneficial Ownership Limitation and (B) (subject to waiver) at any time and from time to time, increase the Beneficial Ownership Limitation immediately in the event of the announcement as pending or planned of a Change in Control Transaction.

Participation. The holders of the Series E Preferred Shares shall be entitled to such dividends paid and distributions made to the holders of shares of our Common Stock to the same extent as if such holders of the Series E Preferred Shares had converted the Series E Preferred Shares into shares of our Common Stock (without regard to any limitations on conversion herein or elsewhere) and had held such shares of Common Stock on the record date for such dividends and distributions.

Voting Rights. Except as expressly provided in the certificate of designations, holders of the Series E Preferred Shares shall not have any voting rights. So long as any Series E Preferred Shares are outstanding, in addition to any other vote or consent of our stockholders required by law or by our amended and restated certificate of incorporation and except where the vote or written consent of holders of a greater than number of shares is required by law or by another provision of our amended and restated certificate of incorporation, the affirmative vote, at a meeting duly called for such purpose or the written consent without a meeting, of the holders of at least a majority of the Series E Preferred Shares then outstanding, voting together as a single class, shall be required before we may: (a) amend or repeal any provision of, or add any provision to, the certificate of designations governing the Series E Preferred Shares, our amended and restated certificate of incorporation or bylaws, or file any articles of amendment, certificate of designations, preferences, limitations and relative rights of any series of preferred stock, if any such action would adversely alter or change the preferences, rights, privileges or powers of, or restrictions provided for the benefit of the Series E Preferred Shares, regardless of whether any such action shall be by means of amendment to our certificate of incorporation or by merger, consolidation or otherwise; (b) increase or decrease (other than by conversion) the authorized number of Series E Preferred Shares (we may increase or decrease our number of authorized shares of undesignated "blank check" preferred stock); (c) create or authorize (by reclassification or otherwise) any new class or series of shares that has a preference over or is on a parity with the Series E Preferred Shares with respect to dividends or the distribution of assets on a Liquidation Event; (d) purchase, repurchase or redeem any shares of our Common Stock or other shares of our capital stock; (e) pay dividends or make any other distribution on our Common Stock or other capital stock; (f) whether or not prohibited by the terms of the Series E Preferred Shares, circumvent a right of the Series E Preferred Shares.

Ranking. The Series E Preferred Shares shall rank senior to our Common Stock and any other class or series of our stock now existing or hereinafter authorized over which the Series E Preferred Shares has preference or priority in the payment of dividends or in the distribution of assets on any voluntary or involuntary dissolution or winding up of our affairs. Without the prior written consent of the Required Holders, we may not authorize or issue additional or other capital stock that is of senior or pari-passu rank to the Series E Preferred Shares in respect of preferences as to dividends and other distributions, amortization and redemption payments and payments upon a liquidation event without the prior express written consent of the holders of a majority of the Series E Preferred Shares. We may issue preferred stock that is junior in rank to the Series E Preferred Shares in respect of the preferences as to dividends and other distributions, amortization and redemption payments and payments upon a liquidation event, provided, that the maturity date (or any other date requiring redemption, repayment or any other payment, including without limitation, dividends) of any such junior preferred shares is not on or before ninety-one (91) days after the maturity date for the Series E Preferred Shares.

Options

As of August 17, 2012, we had outstanding options to purchase an aggregate of 22,627,142 shares of our Common Stock with exercise prices ranging from \$0.35 to \$15.00 per share, with an approximate weighted average exercise price of \$1.35 per share. The shares of our Common Stock underlying all such options are registered with the SEC.

Warrants

As of August 17, 2012, we had outstanding warrants to purchase an aggregate of 54,735,501 shares of our Common Stock with exercise prices ranging from \$0.36 to \$7.00, with an approximate weighted average exercise price of \$1.68 per share. The shares of Common Stock underlying the vast majority of such warrants have been registered for resale.

Class D Warrants

Each Class D warrant entitles the holder to purchase one share of our Common Stock at an exercise price per share of \$2.50. The exercise price per share of each Class D warrant is subject to adjustment upon the occurrence of certain events as provided in the Class D warrant certificate and summarized below. The Class D warrants may be exercised at any time during their five year term, or eight year term in the case of a Class D warrant to purchase an aggregate of 4,000,000 shares held by RimAsia Capital

Partners, L.P., a Cayman Islands exempted limited partnership and an affiliate of NeoStem (“RimAsia”), unless redeemed. The Class D warrants which have not been previously exercised will expire at the expiration date. A Class D warrant holder will not be deemed to be a holder of the underlying Common Stock for any purpose until the Class D warrant is exercised.

In the event our Common Stock is trading at a per share price equal to or exceeding the redemption threshold of \$3.50, or \$5.00 in the case of the Class D warrant held by RimAsia, for twenty consecutive trading days, we have the option to call the Class D warrants. If the holders of Class D warrants have not exercised the Class D Warrants within 30 days of the written notice to call, we may redeem the Class D warrants at \$0.001 per warrant. We will send the written notice of call by first class mail to Class D warrant holders at their last known addresses appearing on the registration records maintained by the transfer agent of the Class D warrants. No other form of notice by publication or otherwise will be required. If we call any Class D Warrants for redemption, they will be exercisable until close of business on the business day next preceding the specified redemption date.

The exercise price and redemption price of the Class D warrants are subject to adjustment in specified circumstances, including in the event we declare any stock dividend to stockholders or effect any split or reverse split with respect to our Common Stock after the issuance thereof. Therefore, if we effect any stock split or reverse split with respect to our Common Stock, the exercise price in effect immediately prior to such stock split or reverse split will be proportionately reduced or increased, respectively. Any adjustment of the exercise price will also result in an adjustment of the number of shares purchasable upon exercise of a Class D warrant or, if we elect, an adjustment of the number of Class D warrants outstanding. The Class D warrants do not contain provisions protecting against dilution resulting from the sale of additional shares of our Common Stock for less than the exercise price of the Class D warrants or the current market price of our Common Stock.

Until exercised, the Class D warrants will have no voting, dividend or other stockholder rights.

Warrants Issued in Our November 2010 Common Stock Offering

On November 19, 2010, in connection with a public offering of our Common Stock and certain warrants, we issued (i) 6,337,980 shares of our Common Stock and (ii) warrants to purchase up to 3,168,990 shares of our Common Stock (the “November 2010 Common Stock Offering”). The material terms and provisions of the warrants issued in connection with our November 2010 Common Stock Offering are summarized below.

Term; Exercise Price and Exercisability. In our November 2010 Common Stock Offering we issued warrants representing the rights to purchase up to an aggregate of 3,168,990 shares of our Common Stock (with 2,824,165 of such warrants remaining outstanding as of August 17, 2012). Each warrant has exercise price of \$1.85 per share, becoming exercisable six months after issuance and expiring five years from the date of issuance. The number of warrant shares that may be acquired by any holder upon any exercise of the warrant will be limited to the extent necessary to insure that, following such exercise (or other issuance), the total number of shares of our Common Stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of common stock would be aggregated with the holder’s for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, does not exceed 4.99% of the total number of issued and outstanding shares of our Common Stock (including for such purpose the shares of our Common Stock issuable upon such exercise), which is referred to as the “beneficial ownership limitation.” The holder may elect to change this beneficial ownership limitation from 4.99% to 9.99% of the total number of issued and outstanding shares of our Common Stock (including for such purpose the shares of our Common Stock issuable upon such exercise) upon providing us with not less than 61 days’ prior written notice.

Call Provision. Subject to certain exceptions, while the warrants are outstanding, if the volume weighted average price of a share of our Common Stock for each of 20 consecutive Trading Days (the “Measurement Period,” which 20 consecutive Trading Day period shall not have commenced until after the Initial Exercise Date) exceeds \$3.70 (subject to adjustment), (i) the average daily volume for such Measurement Period exceeds \$100,000 per Trading Day (subject to adjustment) and (ii) the holder is not in possession of any information that constitutes, or might constitute, material non-public information which was provided by us, then we may, within 1 Trading Day of the end of such Measurement Period, upon notice, call for cancellation of all or any portion of the warrants (a “Call”) for consideration equal to \$0.001 per share. Our right to Call the warrants shall be exercised ratably among the holders based on each holder’s initial purchase of warrants from us.

Fundamental Transaction. If, at any time while the warrants are outstanding, (1) we consolidate or merge with or into another corporation, (2) we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets, (3) any purchase offer, tender offer or exchange offer (whether by us or another individual or entity) is completed pursuant to which holders of our Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of our outstanding Common Stock or (4) we effect any reclassification or recapitalization of our Common Stock or any compulsory share exchange pursuant to which our Common Stock is converted into or exchanged for other securities, cash or property (each, a “Fundamental Transaction”), then upon any subsequent exercise of

the warrants, each holder thereof will have the right to receive the same amount and kind of securities, as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of warrant shares then issuable upon exercise of the warrant, and any additional consideration payable as part of the Fundamental Transaction; *provided, however*, that in the event of a change of control transaction (as defined in the warrant) other than one in which the successor entity is a publicly traded corporation whose stock is listed or quoted for trading on the New York Stock Exchange, NASDAQ markets or the NYSE MKT and results in the warrants being exercisable for publicly traded common stock of such successor entity, at the request of a holder of a warrant delivered before the 90th calendar day after consummation of such change of control transaction, we (or the successor entity) will purchase the warrant by paying to the holder, cash in an amount equal to the Black Scholes value, as described in the warrant, of the remaining unexercised portion of the warrant on the date of consummation of such change of control transaction.

Certain Adjustments. The exercise price and the number of shares of our Common Stock purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our Common Stock. Additionally, the exercise price of the warrants issued to the investors is subject to certain adjustments if we (i) issue rights, options or warrants to all holders of our Common Stock (and not to the warrant holder) entitling them to subscribe for or purchase shares of our Common Stock at a price per share less than the volume weighted average price (the "VWAP") of our Common Stock on the record date for the determination of stockholders entitled to receive such rights, options or warrants, or (ii) distribute to all holders of our Common Stock (and not to the warrant holder) evidences of our indebtedness or assets (including cash and cash dividends) or rights or warrants to purchase any security.

Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the warrants. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, we will, at our election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price or round up to the next whole share.

Exchange Listing. We do not plan on making an application to list the warrants on the NYSE MKT or any other national securities exchange or recognized trading system. Our Common Stock underlying the warrants is listed on the NYSE MKT.

The description of the warrants contained herein does not purport to be complete and is qualified in its entirety by reference to the form of warrant, which was filed as Exhibit 4.1 to our Current Report on Form 8-K filed with the SEC on November 16, 2010 in connection with the November 2010 Common Stock Offering.

Warrants Issued in Our November 2010 Preferred Stock Offering

On November 19, 2010, in connection with a registered direct placement of certain preferred stock, warrants and Common Stock, we issued (i) 10,582,011 shares of our Series E Preferred Stock, (ii) warrants to purchase up to 1,322,486 shares of our Common Stock (subject to adjustment) and (iii) 164,418 shares of our Common Stock (the "November 2010 Preferred Stock Offering"). The material terms and provisions of the warrants issued in connection with our November 2010 Preferred Stock Offering are summarized below.

Term; Exercise Price and Exercisability. As of August 17, 2012, the warrants issued in our November 2010 Preferred Stock Offering represent the rights to purchase up to an aggregate of 1,747,188 shares of our Common Stock (as adjusted). Each warrant has an exercise price of \$1.58 per share (as adjusted), and will expire three years from the date of issuance. The number of warrant shares that may be acquired by any holder upon any exercise of the warrant will be limited to the extent necessary to insure that, following such exercise, the total number of shares of our Common Stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of our Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, does not exceed 4.9% of the then issued and outstanding shares of our Common Stock (including for such purpose the shares of our Common Stock issuable upon such exercise), which is referred to as the "beneficial ownership limitation." However, in the event of the announcement of a Change in Control Transaction (as defined in the certificate of designations with respect to the Series E Preferred Stock), the holder will have the right to (A) at any time and from time to time immediately reduce the beneficial ownership limitation and (B) (subject to waiver) at any time and from time to time, increase the beneficial ownership limitation immediately.

Exercise Elected by Us. Subject to certain exceptions, while the warrants are outstanding, if the daily volume weighted average price (the "Daily VWAP") of a share of our Common Stock for each of 20 trading days out of 30 consecutive trading days (the "Trigger Period") has remained at least 100% above the exercise price, then we may, subject to certain conditions, require the holder to exercise the warrant in full upon not less than 10 business days prior written notice (the "Mandatory Notice Period"). Notwithstanding such a notice, the holder may exercise the warrant at any time during the Mandatory Notice Period. Our right to require the exercise of the warrants is subject to the following additional conditions: (i) during each trading day of the Trigger

Period and during each trading day of the Mandatory Notice Period, the Equity Conditions (as defined below) shall be satisfied; and (ii) the Daily VWAP of our Common Stock has remained at or above 100% of the exercise price during all trading days in the Mandatory Notice Period.

“Equity Conditions” means each of the following: (i) on each day of the Trigger Period and on each day of the Mandatory Notice Period, all warrant shares shall be eligible for resale by the holder without restriction and without need for additional registration under any applicable federal or state securities laws and we shall have no knowledge of any fact that would cause any warrant shares not to be so eligible for resale by the holder without restriction and without the need for additional registration under any applicable federal or state securities laws; (ii) on each day during the Trigger Period and the Mandatory Notice Period, our Common Stock is designated for listing on a Trading Market (as defined in the certificate of designations with respect to the Series E Preferred Stock) and shall not have been suspended from trading on such Trading Market nor shall delisting or suspension by such exchange or market have been threatened or pending in writing by such Trading Market nor shall there be any Securities and Exchange Commission or judicial stop trade order or trading suspension stop order; (iii) any warrant shares may be issued in full without violating the rules or regulations of the Trading Market or any applicable laws; (iv) on each day during the Trigger Period and the Mandatory Notice Period, there shall not have occurred and be continuing, unless waived by the holder, either (A) a Trigger Event (as defined in the certificate of designations with respect to the Series E Preferred Stock) or (B) an event that with the passage of time or giving of notice would constitute a Trigger Event; (v) on each day during the Trigger Period and the Mandatory Notice Period, we have not provided the holder with any non-public information; (vi) on each day during the Trigger Period and the Mandatory Notice Period, neither the registration statement, the prospectus supplement nor the prospectus applicable to the November 2010 Preferred Stock Offering contains any untrue statement of a material fact or omits to state a material fact necessary in order to make the statements made therein, in light of the circumstances under which they were made not misleading, and the prospectus supplement and the prospectus comply with all applicable securities laws as to form and substance, (vii) the transfer agent for our Common Stock is participating in the Depository Trust Company (“DTC”) Fast Automated Securities Transfer Program; and (viii) all warrant shares are duly authorized and will be validly issued, fully paid and non-assessable upon issuance, free and clear of all liens, claims or encumbrances, and the issuance of the warrant shares will not require any further approvals of our Board of Directors or stockholders.

Certain Adjustments. The exercise price and the number of shares of Common Stock purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our Common Stock. Additionally, the exercise price of the warrants is subject to certain weighted average adjustments if NeoStem issues or sells any additional shares of Common Stock or common stock equivalents at a price per share less than the exercise price then in effect, or without consideration, the exercise price then in effect will be adjusted. Notwithstanding the foregoing, there will be no adjustment to the exercise price with respect to the sale or issuance of certain Excluded Securities, as defined in the certificate of designations with respect to the Series E Preferred Stock. See “Series E 7% Senior Convertible Preferred Stock - Optional Conversion by the Holders.” As of August 17, 2012, (i) the exercise price of the warrants had been adjusted to \$1.58, and (ii) the number of shares of Common Stock purchasable upon the exercise of the warrants had been adjusted (in the aggregate) to 1,747,188 shares of Common Stock.

Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the warrants. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, we will, at our election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price or round up to the next whole share.

Exchange Listing. We do not plan on making an application to list the warrants on the NYSE MKT or any other national securities exchange or recognized trading system. Our Common Stock underlying the warrants is listed on the NYSE MKT.

The description of the warrants contained herein does not purport to be complete and is qualified in its entirety by reference to the form of warrant, which was filed as Exhibit 4.2 to our Current Report on Form 8-K filed with the SEC on November 16, 2010 in connection with our November 2010 Preferred Stock Offering.

PCT Merger Warrants

In connection with the closing of the PCT Merger on January 19, 2011 (and in addition to the Common Stock consideration for the PCT Merger which we deposited into an escrow account at such time), we issued seven-year warrants to purchase an aggregate 3,000,000 shares of our Common Stock (collectively, the “PCT Merger Warrants”). The PCT Merger Warrants were delivered in book entry form to the former members of PCT after receipt by us of an appropriate letter of transmittal from the respective former member. The PCT Merger Warrants are divided into three series as follows: (i) warrants to purchase an aggregate 1,000,000 shares of our Common Stock at an exercise price of \$3.00 per share (the “\$3.00 Warrants”); (ii) warrants to purchase an aggregate 1,000,000 shares of our Common Stock at an exercise price of \$5.00 per share (the “\$5.00 Warrants”); and (iii)

warrants to purchase an aggregate 1,000,000 shares of our Common Stock at an exercise price of \$7.00 per share, and which will vest only if the \$7.00 Warrant Condition (as defined below) is accomplished within three years of the closing of the PCT Merger (the “\$7.00 Warrants”). The material terms and provisions of the PCT Merger Warrants are summarized below.

\$3.00 Warrants and \$5.00 Warrants

General. Each \$3.00 Warrant and \$5.00 Warrant entitles the holder to purchase one share of Common Stock at an exercise price per share of \$3.00 and \$5.00, respectively. The exercise price per share of each \$3.00 Warrant and \$5.00 Warrant is subject to adjustment upon the occurrence of certain events as provided in the applicable warrant certificate and summarized below. The \$3.00 Warrants and \$5.00 Warrants may be exercised at any time during their seven year term, unless redeemed. The \$3.00 Warrants and \$5.00 Warrants which have not been previously exercised will expire at the expiration date. Holders of the warrants will not be deemed to be a holder of the underlying Common Stock for any purpose until such warrant is exercised. As described below, the Warrants are redeemable in certain circumstances. Transfer of the shares issuable upon exercise of the Warrants had been restricted until the one year anniversary of the Closing Date.

Redemption. In the event Common Stock is trading at a per share price equal to or exceeding the redemption threshold of \$5.00 with respect to the \$3.00 Warrant or \$7.00 with respect to the \$5.00 Warrant for twenty (20) out of thirty (30) consecutive trading days, NeoStem has the option to call the applicable warrant. If the warrant holders have not exercised the warrants within 14 days of the redemption notice, NeoStem may redeem the warrants at \$0.001 per warrant. NeoStem will send the redemption notice by first class mail to warrant holders at their last known addresses appearing on the registration records maintained by the transfer agent of the warrants. No other form of notice by publication or otherwise will be required. If NeoStem calls any warrants for redemption, they will be exercisable until close of business on the business day next preceding the specified redemption date. Notwithstanding the foregoing, NeoStem may not redeem the Warrants unless (i) NeoStem waives the lock-up provisions in the applicable Warrant and (ii) the issuance of the shares underlying the Warrants is covered by an effective registration statement or there is an effective resale registration statement available to the holders of the Warrants with respect to the shares underlying the Warrants.

Adjustments of Exercise Price. The exercise price and redemption price of the warrants are subject to adjustment in specified circumstances, including in the event (i) there is a merger or consolidation and NeoStem is not the surviving corporation; (ii) there is subdivision, combination or reclassification of securities, recapitalization, automatic conversion, or other similar event affecting the number or character of outstanding shares of Common Stock; or (iii) NeoStem declares any stock dividend to stockholders or effects any split or reverse split with respect to the Common Stock after the issuance thereof. The warrants do not contain provisions protecting against dilution resulting from the sale of additional shares of Common Stock for less than the exercise price of the warrants or the current market price of the Common Stock.

No Voting and Dividend Rights. Until exercised, the holders of the warrants will have no voting, dividend or other stockholder rights.

Registration Rights. NeoStem has agreed to use its commercially reasonable efforts to maintain the effectiveness of a registration statement covering the shares underlying the Warrants at any time that both (a) the Warrants are exercisable and (b) the exercise price of the Warrants is less than 105% of the price at which the Common Stock is trading on the NYSE MKT (or, such other stock exchange on which the Common Stock trades). Under certain limited circumstances, if a registration statement is not effective or a prospectus supplement is not available during the last 20 business days prior to the expiration date of the Warrants, the exercise period of the Warrants would be extended for a period of 20 business days following such effectiveness or availability.

\$7.00 Warrants

General. Each \$7.00 Warrant entitles the holder to purchase one share of Common Stock at an exercise price per share of \$7.00. The exercise price per share of each \$7.00 Warrant is subject to adjustment upon the occurrence of certain events as provided in the \$7.00 Warrant certificate and summarized below. The \$7.00 Warrants may be exercised only if the \$7.00 Warrant Condition (as defined below) is satisfied and at any time thereafter during their seven year term, unless redeemed. The \$7.00 Warrants which have not been previously exercised will expire at the expiration date. A \$7.00 Warrant holder will not be deemed to be a holder of the underlying Common Stock for any purpose until the \$7.00 Warrant is exercised.

Performance Condition. The \$7.00 Warrant Condition is a performance condition that provides that the \$7.00 Warrants will not vest and will not become exercisable unless PCT secures, prior to the third annual anniversary of the Closing Date, one or more material binding commercial manufacturing contracts with one or more third parties, each on an arm's length basis, which commercial manufacturing contracts result in aggregate revenues to PCT in excess of \$5 million per year over a period of at least

3 years and in the reasonable judgment of NeoStem's Board of Directors the manufacturing contracts will be profitable each year during the term of such contracts in accordance with GAAP.

Redemption. In the event Common Stock is trading at a per share price equal to or exceeding the redemption threshold of \$9.00 for twenty (20) out of thirty (30) consecutive trading days, NeoStem has the option to call the \$7.00 Warrants. If the holders of \$7.00 Warrants have not exercised the \$7.00 Warrants within 14 days of the redemption notice, NeoStem may redeem the \$7.00 Warrants at \$0.001 per warrant. NeoStem will send the redemption notice by first class mail to \$7.00 Warrant holders at their last known addresses appearing on the registration records maintained by the transfer agent of the \$7.00 Warrants. No other form of notice by publication or otherwise will be required. If NeoStem calls any \$7.00 Warrants for redemption, they will be exercisable until close of business on the business day next preceding the specified redemption date. Notwithstanding the foregoing, NeoStem may not redeem the \$7.00 Warrants unless (i) NeoStem waives the lock-up provisions in the applicable Warrant, (ii) the issuance of the shares of Common Stock underlying the \$7.00 Warrants is covered by an effective registration statement or there is an effective resale registration statement available to the holders of the \$7.00 Warrants with respect to such shares and (iii) the \$7.00 Warrant Condition has been achieved or NeoStem waives the \$7.00 Warrant Condition concurrently with its provision of the redemption notice.

Adjustments of Exercise Price. The exercise price and redemption price of the \$7.00 Warrants are subject to adjustment in specified circumstances, including in the event (i) there is a merger or consolidation and NeoStem is not the surviving corporation; (ii) there is subdivision, combination or reclassification of securities, recapitalization, automatic conversion, or other similar event affecting the number or character of outstanding shares of Common Stock; or (iii) NeoStem declares any stock dividend to stockholders or effect any split or reverse split with respect to the Common Stock after the issuance thereof. The \$7.00 Warrants do not contain provisions protecting against dilution resulting from the sale of additional shares of Common Stock for less than the exercise price of the \$7.00 Warrants or the current market price of the Common Stock.

No Voting and Dividend Rights. Until exercised, the \$7.00 Warrants will have no voting, dividend or other stockholder rights.

Registration Rights. NeoStem has agreed to use its commercially reasonable efforts to maintain the effectiveness of a registration statement covering the shares underlying the Warrants at any time that both (a) the Warrants are exercisable and (b) the exercise price of the Warrants is less than 105% of the price at which the Common Stock is trading on the NYSE MKT (or, such other stock exchange on which the Common Stock trades). Under certain limited circumstances, if a registration statement is not effective or a prospectus supplement is not available during the last 20 business days prior to the expiration date of the Warrants, the exercise period of the Warrants would be extended for a period of 20 business days following such effectiveness or availability.

The above description of the PCT Merger Warrants does not purport to be complete and is qualified in its entirety by reference to the Warrant Agreement (with the forms of \$3.00 Warrant, \$5.00 Warrant and \$7.00 Warrant attached thereto), which was filed as Exhibit 4.1 to our Current Report on Form 8-K dated January 18, 2011 and filed with the SEC on January 24, 2011 in connection with the closing of the PCT Merger.

Series NA Warrants

Background. On July 22, 2011, we completed an underwritten offering of 13,750,000 units, with each unit consisting of one share of our Common Stock and a warrant to purchase 0.75 of a share of our Common Stock (each, a "Series NA Warrant"). The Series NA Warrants issued in connection with the July 2011 underwritten offering covered, in the aggregate, up to 10,312,500 shares of our Common Stock (with Series NA Warrants covering 10,012,500 shares of our Common Stock remaining outstanding as of August 17, 2012). The material terms and provisions of the Series NA Warrants are summarized below.

Warrant Agreement. Pursuant to the terms of the underwriting entered into in connection with the July 2011 offering, the Series NA Warrants may be issued through DTC and evidenced by a "Global Warrant" or may be delivered in physical or other appropriate form. The Series NA Warrants are governed by a warrant agreement (the "Warrant Agreement"), dated as of July 22, 2011, between us and Continental Stock Transfer & Trust Company, as our agent in respect of the Series NA Warrants. Book-entry form Series NA Warrants may be exercised by notifying a broker who is a DTC participant prior to the expiry of such warrants and providing payment of the exercise price for the number of shares of our Common Stock for which such warrants are being exercised. The following description of the terms of the Warrant Agreement is subject to the detailed provisions of such Warrant Agreement, the form of which is filed as Exhibit 2.1 to our Current Report on Form 8-K dated July 19, 2011.

Term; Exercise Price and Exercisability. Series NA Warrants representing the rights to purchase up to an aggregate of 10,012,500 shares of our Common Stock remain outstanding as of August 17, 2012. Each warrant has an exercise price of \$1.45 per share, was immediately exercisable upon issuance, and will expire on July 18, 2016. The number of warrant shares that may

be acquired by any holder upon any exercise of the warrant will be limited to the extent necessary to insure that, following such exercise (or other issuance), the total number of shares of our Common Stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of our Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, does not exceed 4.99% of the total number of issued and outstanding shares of our Common Stock (including for such purpose the shares of our Common Stock issuable upon such exercise), or beneficial ownership limitation. The holder may elect to change this beneficial ownership limitation from 4.99% to 9.99% of the total number of issued and outstanding shares of our Common Stock (including for such purpose the shares of our Common Stock issuable upon such exercise) upon providing us with not less than 61 days' prior written notice.

Manner of Exercise. Holders of the Series NA Warrants may exercise their Series NA Warrants to purchase shares of our Common Stock on or before the expiration date by delivering (i) notice of exercise, appropriately completed and duly signed, and (ii) if such holder is not utilizing the cashless exercise provisions with respect to the warrants, payment of the exercise price by wire transfer or cashier's check drawn on a United States bank, for the number of shares with respect to which the warrant is being exercised. Series NA Warrants may be exercised in whole or in part, but only for full shares of our Common Stock. We provide certain buy-in rights to a holder if we fail to deliver the shares of our Common Stock underlying the Series NA Warrants by the second trading day after the date on which delivery of the stock certificate is required by the Series NA Warrant. The buy-in rights apply if after the second trading day on which delivery of the stock is required by the Series NA Warrant, the holder purchases (in an open market transaction or otherwise) shares of our Common Stock to deliver in satisfaction of a sale by the holder of the warrant shares that the holder anticipated receiving from us upon exercise of the Series NA Warrant. In such event, we will:

- pay in cash to the holder the amount equal to the excess (if any) of the buy-in price (including brokerage commissions, if any) over the product of (A) the number of warrant shares that we were required to deliver to the holder in connection with the exercise at issue, times (B) the price at which the sell order giving rise to holder's purchase obligation was executed; and
- at the election of holder, either (A) reinstate the portion of the Series NA Warrant as to such number of shares of our Common Stock for which such exercise was not honored, or (B) deliver to the holder such number of shares of our Common Stock that would have been exercised had we timely complied with our exercise and delivery obligations.

If the holder of a Series NA Warrant desires to exercise its warrant and sell the shares issuable upon exercise of its warrant and there is no effective registration statement registering, or no current prospectus available for, the issuance or resale of the shares of our Common Stock underlying such warrants, in lieu of exercising its warrant by payment of a wire transfer or cashier's check, the holder may elect to receive shares equal to the value of such holder's warrant by surrender of the warrant to us, together with a properly endorsed notice of exercise. The number of shares to be issued would be determined by a formula based on the total number of shares with respect to which the warrant is being exercised, the volume weighted average price for the shares of our Common Stock on the trading day immediately prior to the date of exercise and the applicable exercise price of the Series NA Warrants.

The shares of our Common Stock issuable on exercise of the Series NA warrants will be, when issued and paid for in accordance with the Series NA Warrants, duly authorized, validly issued and fully paid and non-assessable. We have authorized and reserved at least that number of shares of our Common Stock equal to the number of shares of our Common Stock issuable upon exercise of all outstanding Series NA Warrants.

Fundamental Transaction. If, at any time while the Series NA Warrants are outstanding, (1) we consolidate or merge with or into another corporation, (2) we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets, (3) any purchase offer, tender offer or exchange offer (whether by us or another individual or entity) is completed pursuant to which holders of our Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of our outstanding Common Stock or (4) we effect any reclassification or recapitalization of our Common Stock or any compulsory share exchange pursuant to which our Common Stock is converted into or exchanged for other securities, cash or property (or the occurrence of any analogous proceeding) affecting us (each, a "Fundamental Transaction"), then upon any subsequent exercise of the Series NA Warrants, the holders thereof will have the right to receive the same amount and kind of securities, as they would have been entitled to receive upon the occurrence of such Fundamental Transaction if they had been, immediately prior to such Fundamental Transaction, the holder of the number of warrant shares then issuable upon exercise of the Series NA Warrant, and any additional consideration payable as part of the Fundamental Transaction; *provided, however*, that in the event of a change of control transaction (as defined in the warrant) other than one in which the successor entity is a publicly traded corporation whose stock is listed or quoted for trading on the New York Stock Exchange, NASDAQ markets or the NYSE MKT and results in the Series NA Warrants being exercisable for publicly traded common stock of such successor entity, at the request of a holder of a warrant delivered before the 90th calendar day after consummation of such change of control transaction, we (or the successor entity) will purchase the warrant by paying to the holder,

cash in an amount equal to the Black Scholes value, as described in the warrant, of the remaining unexercised portion of the warrant on the date of consummation of such change of control transaction.

Certain Adjustments. The exercise price and the number of shares of our Common Stock purchasable upon the exercise of the Series NA Warrants are subject to adjustment upon the occurrence of specific events, including stock dividends (excluding payments in respect of our Series E Preferred Stock), stock splits, combinations and reclassifications of our Common Stock. Additionally, the exercise price of the Series NA Warrants is subject to certain adjustments if we (i) issue rights, options or warrants to all holders of our Common Stock (and not to the warrant holder) entitling them to subscribe for or purchase shares of our Common Stock at a price per share less than the volume weighted average price (the "VWAP") of our Common Stock on the record date for the determination of stockholders entitled to receive such rights, options or warrants, or (ii) distribute to all holders of our Common Stock (and not to the warrant holder) evidences of our indebtedness or assets (including cash and cash dividends) or rights or warrants to purchase any security.

Delivery of Certificates. Upon the holder's exercise of a Series NA Warrant, we will promptly, but in no event later than three business days after the exercise date (referred to as the "warrant share delivery date"), issue and deliver, or cause to be issued and delivered, a certificate for the shares of our Common Stock issuable upon exercise of the Series NA Warrant. In addition, we will, if the holder provides the necessary information to us, issue and deliver the shares electronically through The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System (DWAC) or another established clearing corporation performing similar functions.

Notice of Corporate Action. We will provide prior notice to holders of the Series NA Warrants in advance of certain record or effective dates (as specified below) in connection with the following corporate events, to provide the holders of the Series NA Warrants with the opportunity to exercise their warrants and hold our Common Stock:

- if we declare a dividend (or any other distribution in whatever form) on our Common Stock;
- if we declare a special nonrecurring cash dividend on or a redemption of our Common Stock;
- if we authorize the granting to all holders of our Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights;
- if the approval of any of our stockholders shall be required in connection with any reclassification of our Common Stock, any consolidation or merger to which we are a party, any sale or transfer of all or substantially all of our assets, or any compulsory share exchange whereby our Common Stock is converted into other securities, cash or property; or
- if we authorize the voluntary or involuntary liquidation or winding up of the affairs of our Company, then, in each case, we will mail to the holders of the Series NA Warrants a notice stating:
- the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of our Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined, or
- the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of record of our Common Stock will be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange.

Subject to applicable law, the holder will be provided a reasonable opportunity (which shall be not less than eight (8) calendar days notice) to exercise the Series NA Warrant prior to the effective date of the event triggering such notice. No holders of the Series NA Warrants will possess any rights as a stockholder under those warrants until the holder exercises those warrants.

Transferability. The Series NA Warrants may be transferred independent of the Common Stock they were issued with, on a form of assignment, subject to all applicable laws.

Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the Series NA Warrants. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, we will, at our election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price or round up to the next whole share.

Exchange Listing. We do not plan on making an application to list the Series NA Warrants on the NYSE MKT or any other national securities exchange or recognized trading system. Our Common Stock underlying the Series NA Warrants is listed on the NYSE MKT.

The description of the Series NA Warrants contained herein does not purport to be complete and is qualified in its entirety by reference to the Warrant Agreement and the Form of Warrant Certificate, which are filed as Exhibit 4.1 to our Current Report on Form 8-K dated July 19, 2011.

Series AMO Warrants

General. Upon closing the Amorcyte Merger on October 17, 2011, as a portion of the merger consideration we issued Series AMO Warrants to purchase an aggregate of 1,881,008 shares of our Common Stock (the "Series AMO Warrants"). The Series AMO Warrants are evidenced by a "Global Warrant" and were delivered in book entry form to the former stockholders of Amorcyte. Each Series AMO Warrant entitles the holder to purchase one share of our Common Stock at an exercise price of \$1.466 per share. The exercise price per share of each Warrant will be subject to adjustment upon the occurrence of certain events as provided in the form of global warrant certificate and summarized below. The Series AMO Warrants may be exercised at any time during their seven year term, unless redeemed; provided, however, that transfer of any shares of our Common Stock issuable upon exercise of the Series AMO Warrants is restricted until the one year anniversary of the closing date of the Amorcyte Merger. The Series AMO Warrants which have not been previously exercised will expire at the expiration date. A Series AMO Warrant holder will not be deemed to be a holder of the underlying Common Stock for any purpose until the Series AMO Warrant is exercised.

Redemption. In the event our Common Stock is trading at a per share price equal to or exceeding the redemption threshold of \$3.466 per share for twenty (20) out of thirty (30) consecutive trading days, we have the option to call the Series AMO Warrants. If the holders of Series AMO Warrants have not exercised their warrants within 14 days of the redemption notice, we may redeem the Series AMO Warrants at \$0.0001 per warrant. We will send the redemption notice by first class mail to Series AMO Warrant holders at their last known addresses appearing on the registration records maintained by the transfer agent of the Series AMO Warrants. No other form of notice by publication or otherwise will be required. If we call any Series AMO Warrants for redemption, they will be exercisable until close of business on the business day next preceding the specified redemption date.

Adjustments of Exercise Price. The exercise price and redemption price of the Series AMO Warrants is subject to adjustment in specified circumstances, including in the event (i) there is a merger or consolidation and we are not the surviving corporation; (ii) there is subdivision, combination or reclassification of securities, recapitalization, automatic conversion, or other similar event affecting the number or character of outstanding shares of our Common Stock; or (iii) we declare any stock dividend to stockholders or effect any split or reverse split with respect to our Common Stock. The Series AMO Warrants do not contain provisions protecting against dilution resulting from the sale of additional shares of our Common Stock for less than the exercise price of the Series AMO Warrants or the current market price of our Common Stock.

No Voting and Dividend Rights. Until exercised, the Series AMO Warrants have no voting, dividend or other stockholder rights.

Registration Rights. We shall use commercially reasonable efforts to maintain the effectiveness of the Registration Statement on Form S-4 which covers the shares of our Common Stock underlying the Series AMO Warrants or file and maintain the effectiveness of another registration statement covering the shares of our Common Stock issuable upon exercise of the Series AMO Warrants at any time that both (a) the Series AMO Warrants are exercisable and (b) the exercise price of the Series AMO Warrants is less than 105% of the price at which our Common Stock is trading on the NYSE MKT (or if our Common Stock is no longer trading on the NYSE MKT, such other stock exchange on which such shares trade). In no event will any holder of a Series AMO Warrant be entitled to receive a "net cash settlement" in lieu of physical settlement in shares of our Common Stock regardless of whether we comply with our obligation described in the preceding sentence.

The description of the Series AMO Warrants contained herein does not purport to be complete and is qualified in its entirety by reference to the Warrant Agreement and the Form of Global Series AMO Warrant attached thereto, which is filed as Exhibit 4.1 to our Current Report on Form 8-K dated October 17, 2011.

Warrants Issued in Our March 2012 Underwritten Offering

In connection with a public offering of our Common Stock and certain warrants which closed as to 15,000,000 units on March 30, 2012 (and which closed with respect to an exercise of the underwriter's over-allotment option to the extent of an additional 2,000,000 units on April 4, 2012) (the "March 2012 Underwritten Offering"), we issued warrants to purchase up to an aggregate

of 17,000,000 shares of our Common Stock. The material terms and provisions of the warrants issued in connection with our March 2012 Underwritten Offering are summarized below.

Term; Exercise Price and Exercisability. The warrants issued in our March 2012 Underwritten Offering provided for the purchase of up to 17,000,000 shares of our Common Stock in the aggregate (with 13,919,656 of such warrants remaining outstanding as of August 17, 2012). Each warrant has an exercise price of \$0.51 per share, became exercisable in April 2012 (the Company having waived the six-month waiting period to exercise the warrants), and will expire five years from the date of issuance. The number of warrant shares that may be acquired by any holder upon any exercise of the warrant will be limited to the extent necessary to insure that, following such exercise (or other issuance), the total number of shares of Common Stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, does not exceed 4.99% of the total number of issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such exercise), or beneficial ownership limitation. The holder may elect to change this beneficial ownership limitation from 4.99% to 9.99% of the total number of issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such exercise) upon providing us with not less than 61 days' prior written notice.

Manner of Exercise. Holders of the warrants may exercise their warrants to purchase shares of our Common Stock at any time on or after the Initial Exercise Date and on or before the expiration date by delivering (i) notice of exercise, appropriately completed and duly signed, and (ii) payment of the exercise price by wire transfer or cashier's check drawn on a United States bank, for the number of shares with respect to which the warrant is being exercised. Warrants may be exercised in whole or in part, but only for full shares of Common Stock. We provide certain buy-in rights to a holder if we fail to deliver the shares of Common Stock underlying the warrants by the date on which delivery of the warrant shares is required by the warrant. The buy-in rights apply if after the day on which delivery of the warrant shares is required by the warrant, the holder purchases (in an open market transaction or otherwise) shares of our Common Stock to deliver in satisfaction of a sale by the holder of the warrant shares that the holder anticipated receiving from us upon exercise of the warrant. In such event, we will:

- pay in cash to the holder the amount equal to the excess (if any) of the buy-in price (including brokerage commissions, if any) over the product of (A) the number of warrant shares that we were required to deliver to the holder in connection with the exercise at issue, times (B) the price at which the sell order giving rise to holder's purchase obligation was executed; and
- at the election of holder, either (A) reinstate the portion of the warrant as to such number of shares of Common Stock for which such exercise was not honored, or (B) deliver to the holder such number of shares of Common Stock that would have been issued had we timely complied with our exercise and delivery obligations.

If the holder of a warrant desires to exercise its warrant and there is no effective registration statement registering, or no current prospectus available for, the issuance of the shares of Common Stock underlying the warrants, in lieu of exercising its warrant by payment of a wire transfer or cashier's check, the holder may elect to receive shares equal to the value of such holder's warrant by surrender of the warrant to us, together with a properly endorsed notice of exercise. The number of shares to be issued would be determined by a formula based on the total number of shares with respect to which the warrant is being exercised, the volume weighted average price for the shares of our Common Stock on the trading day immediately prior to the date of exercise and the applicable exercise price of the warrants.

The shares of Common Stock issuable on exercise of the warrants will be, when issued and paid for in accordance with the warrants, duly authorized, validly issued and fully paid and non-assessable. We will authorize and reserve at least that number of shares of Common Stock equal to the number of shares of Common Stock issuable upon exercise of all outstanding warrants.

Call Provision. Subject to certain exceptions, while the warrants are outstanding and following the Initial Exercise Date, if the volume weighted average price of a share of our Common Stock for each of 10 consecutive Trading Days (the "Measurement Period," which 10 consecutive Trading Day period shall not have commenced until after the Initial Exercise Date) exceeds \$1.53 (subject to adjustment), then we may, within 1 Trading Day of the end of such Measurement Period, upon notice, call for cancellation of all or any portion of the warrants (a "Call") for consideration equal to \$0.001 per Share. Our right to Call the warrants shall be exercised ratably among the holders based on each holder's initial purchase of warrants from us.

Fundamental Transaction. If, at any time while the warrants are outstanding, (1) we consolidate or merge with or into another corporation, (2) we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets for consideration which is distributed to the holders of all our Common Stock, (3) any purchase offer, tender offer or exchange offer (whether by us or another individual or entity) is completed pursuant to which holders of our Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of our

outstanding Common Stock, (4) we effect any reclassification or recapitalization of our Common Stock or any compulsory share exchange pursuant to which our Common Stock is converted into or exchanged for other securities, cash or property or (5) we consummate a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another individual, entity or group whereby such other individual, entity or group acquires more than 50% of our outstanding stock (or the occurrence of any analogous proceeding) affecting our company (each, a “Fundamental Transaction”), then upon any subsequent exercise of the warrants, the holders thereof will have the right to receive the same amount and kind of securities, as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of warrant shares then issuable upon exercise of the warrant, and any additional consideration payable as part of the Fundamental Transaction; *provided, however*, that in the event of a Fundamental Transaction that is (1) an all cash transaction, (2) a “Rule 13e-3 transaction” as defined in Rule 13e-3 under the Exchange Act, or (3) a Fundamental Transaction (other than as described solely in clause (5) above) involving a person or entity not traded on a national securities exchange, including, but not limited to, the New York Stock Exchange, the NYSE MKT, the Nasdaq Global Select Market, the Nasdaq Global Market, or the Nasdaq Capital Market, we or any Successor Entity (as defined below) shall, at the holder's option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction, purchase the warrant from the holder by paying to the holder an amount of cash equal to the Black Scholes Value (as defined in the warrant) of the remaining unexercised portion of the warrant on the date of the consummation of such Fundamental Transaction, and we shall cause any successor entity in a Fundamental Transaction in which we are not the survivor (the “Successor Entity”) to assume in writing all of our obligations under the warrant prior to such Fundamental Transaction and shall, at the option of the holder, deliver to the holder in exchange for the warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to the warrants which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of the warrants (without regard to any limitations on the exercise of the warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price under the warrant to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of the warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the holder.

Certain Adjustments. The exercise price and the number of shares of Common Stock purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our Common Stock. Additionally, the exercise price of the warrants issued to the investors is subject to certain adjustments if we (i) issue rights, options or warrants to all holders of Common Stock (and not to the warrant holder) entitling them to subscribe for or purchase shares of Common Stock at a price per share less than the volume weighted average price (the “VWAP”) of the Common Stock on the record date for the determination of stockholders entitled to receive such rights, options or warrants, or (ii) distribute to all holders of Common Stock (and not to the warrant holder) evidences of our indebtedness or assets (including cash and cash dividends) or rights or warrants to purchase any security.

Delivery of Warrant Shares. Upon the holder's exercise of a warrant, we will promptly, but in no event later than three business days after the exercise date (referred to as the “exercise share delivery date”), issue and deliver, or cause to be issued and delivered, the shares of Common Stock issuable upon exercise of the warrant. If the holder provides the necessary information to us, we will issue and deliver the shares electronically through The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System (DWAC) or another established clearing corporation performing similar functions.

Notice of Corporate Action. We will provide prior notice to holders of the warrants in advance of certain record or effective dates (as specified below) in connection with the following corporate events, to provide the holders of the warrants with the opportunity to exercise their warrants and hold Common Stock:

- if we declare a dividend (or any other distribution in whatever form) on our Common Stock;
- if we declare a special nonrecurring cash dividend on or a redemption of Common Stock;
- if we authorize the granting to all holders of our Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights;
- if the approval of any of our stockholders shall be required in connection with any reclassification of our Common Stock, any consolidation or merger to which our Company is a party, any sale or transfer of all or substantially all of our assets, or any compulsory share exchange whereby our Common Stock is converted into other securities, cash or property; or
- if we authorize the voluntary or involuntary liquidation or winding up of the affairs of the Company,

then, in each case, we will mail to the holders of the warrants a notice stating:

- the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of our Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined, or
- the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of record of our Common Stock will be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange.

Subject to applicable law, the holder will be provided a reasonable opportunity to exercise the warrant prior to the effective date of the event triggering such notice. No holders of the warrants will possess any rights as a stockholder under those warrants until the holder exercises those warrants.

Transferability. The warrants may be transferred independent of the Common Stock they were issued with, on a form of assignment, subject to all applicable laws.

Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the warrants. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, we will, at our election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price or round up to the next whole share.

Exchange Listing. We do not plan on making an application to list the warrants on the NYSE MKT or any other national securities exchange or recognized trading system. The Common Stock underlying the warrants is listed on the NYSE MKT.

The above description of the warrants issued in our March 2012 Underwritten Offering does not purport to be complete and is qualified in its entirety by reference to the form of warrant, which was filed as Exhibit 4.1 to our Current Report on Form 8-K filed with the SEC on March 29, 2012 in connection with the March 2012 Underwritten Offering.

Warrants Issued in Connection With Our May-July 2012 Private Placement

May-July 2012 Private Placement Warrants. In closings occurring from May through August 2012, we issued in a private placement an aggregate of 5,345,834 units, with each unit consisting of (i) one share of our Common Stock and (ii) a warrant to purchase one share of our Common Stock at an exercise price of \$.51 per share, exercisable during the five-year period following the date of issuance (our board of directors having waived the six month waiting period provided for in the form of warrant) (each, a “May-July 2012 Private Placement Warrant”). As of August 17, 2012, May-July 2012 Private Placement Warrants covering an aggregate of 2,537,694 shares of our Common Stock remained outstanding. In the event the average closing price of our Common Stock equals or exceeds \$1.00 per share for 20 out of 30 consecutive trading days, we have the option to call the May-July 2012 Private Placement Warrants by mailing a notice to the registered holders thereof at least 10 business days prior to the date fixed by us for redemption (the “Redemption Date”). Any May-July 2012 Private Placement Warrants not exercised by 5:00 p.m. on the business day immediately preceding the Redemption Date shall terminate, with the holder of such terminated warrants having no further rights except to receive, upon surrender of the warrants, the redemption price of \$.0001 per warrant.

July 2012 New Warrants. In July 2012, an aggregate of 2,808,140 of the May-July 2012 Private Placement Warrants were exercised, and in consideration for such exercises, we issued to each exercising holder a new five-year warrant (each, a “July 2012 New Warrant”) to purchase the identical number of shares of our Common Stock as had been covered by such portion of the old May-July 2012 Private Placement Warrant as had been exercised. Each July 2012 New Warrant is exercisable for five years and is subject to substantially the same terms as the old May-July 2012 Private Placement Warrants that were exercised, except that the per share exercise price of each July 2012 New Warrant is between \$.66 and \$.69, the closing price of our Common Stock on the date the old May-July 2012 Private Placement Warrant was exercised. We have issued July 2012 New Warrants covering an aggregate of 2,808,140 shares of our Common Stock.

Warrants Issued in Connection With Our August 2012 Private Placement

In an August 2012 private placement, we issued an aggregate of 2,954,385 units, with each Unit consisting of (a) one share of common stock and (b) a warrant (each, an “August 2012 Private Placement Warrant”) to purchase one share of Common Stock

at an exercise price equal to the greater of (i) \$0.70 or (ii) a penny above the closing price of our Common stock on the date the subscription agreement was executed, expiring five years from the date of issuance and are exercisable immediately upon issuance.

Anti-Takeover Effects of Certain Provisions of Delaware Law and Our Certificate of Incorporation and Bylaws

Our Amended and Restated Certificate of Incorporation and bylaws contain some provisions that could make our acquisition by means of a tender or exchange offer, a proxy contest or otherwise more difficult. These provisions are summarized below.

Special Meetings. Our bylaws provide that special meetings of our stockholders may, unless otherwise prescribed by law, be called by our Chairman of the Board (if any), our Board of Directors or our Chief Executive Officer and shall be held at such place, on such date and at such time as shall be fixed by our Board of Directors or the person calling the meeting. Business transacted at any special meeting shall be limited to matters relating to the purpose or purposes stated in the notice of the meeting.

Undesignated Preferred Stock. The ability to authorize 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 acquire us. The ability to issue preferred stock may have the effect of deferring hostile takeovers or delaying changes in control or management of our company.

Delaware Anti-Takeover Statute. We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned by 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; and
- on or subsequent to the date of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, owned 15% or more of a corporation's outstanding voting securities. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our Board of Directors does not approve in advance. We also anticipate that Section 203 may discourage attempted acquisitions that might result in a premium over the market price for the shares of our Common Stock held by stockholders.

The provisions of Delaware law, our Amended and Restated Certificate of Incorporation and our bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our Common Stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Potential Effects of Authorized but Unissued Stock

We have shares of Common Stock and preferred stock available for future issuance without stockholder approval. We may utilize these additional shares for a variety of corporate purposes, including future public offerings to raise additional capital, to facilitate corporate acquisitions or payment as a dividend on the capital stock.

The existence of unissued and unreserved Common Stock and preferred stock may enable our Board of Directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management. In addition, the Board of Directors has the discretion to determine designations, rights, preferences,

privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences of each series of preferred stock, all to the fullest extent permissible under the Delaware General Corporation Law and subject to any limitations set forth in our certificate of incorporation. The purpose of authorizing the Board of Directors to issue preferred stock and to determine the rights and preferences applicable to such preferred stock is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing desirable flexibility in connection with possible financings, acquisitions and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from acquiring, a majority of our outstanding voting stock.

Limitations of Director Liability and Indemnification of Directors, Officers and Employees

Section 145 of the Delaware General Corporation Law, permits indemnification of directors, officers, agents and controlling persons of a corporation under certain conditions and subject to certain limitations. Section 145 empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was a director, officer or agent of the corporation or another enterprise if serving at the request of the corporation. Depending on the character of the proceeding, a corporation may indemnify against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding if the person indemnified acted in good faith and in a manner he or she 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 his or her conduct was unlawful. In the case of an action by or in the right of the corporation, no indemnification may be made with respect to 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 that despite the adjudication of liability such person is fairly and reasonably entitled to indemnity for such expenses which the court shall deem proper. Section 145 further provides that to the extent a present or former director or officer of a corporation has been successful in the defense of any action, suit or proceeding referred to above or in the 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.

Indemnification Agreements

We have entered into indemnification agreements with each of our Chief Executive Officer, Chief Financial Officer, General Counsel, certain other employees and each of our directors pursuant to which we have agreed to indemnify such party to the full extent permitted by law, subject to certain exceptions, if such party becomes subject to an action because such party is our director, officer, employee, agent or fiduciary.

Transfer Agent

The transfer agent and registrar for our Common Stock is Continental Stock Transfer & Trust Company. Its address is 17 Battery Place, New York, New York, 10004 and its telephone number is (212) 509-4000.

NYSE MKT Listing

Our Common Stock is traded on the NYSE MKT under the symbol "NBS."

DESCRIPTION OF DEBT SECURITIES

We summarize below some of the provisions that will apply to the debt securities unless the applicable prospectus supplement provides otherwise. This summary may not contain all information that is important to you. The complete terms of the debt securities will be contained in the applicable notes. The notes will be included or incorporated by reference as exhibits to the registration statement of which this prospectus is a part. You should read the provisions of the notes. You should also read the prospectus supplement, which will contain additional information and which may update or change some of the information below.

General

This prospectus describes certain general terms and provisions of the debt securities. The debt securities will be issued under an indenture between us and a trustee to be designated prior to the issuance of the debt securities. When we offer to sell a particular series of debt securities, we will describe the specific terms of the securities in a supplement to this prospectus. The prospectus supplement will also indicate whether the general terms and provisions described in this prospectus apply to a particular series of debt securities.

We may issue, from time to time, debt securities, in one or more series, that will consist of either our senior debt (“senior debt securities”), our senior subordinated debt (“senior subordinated debt securities”), our subordinated debt (“subordinated debt securities”) or our junior subordinated debt (“junior subordinated debt securities” and, together with the senior subordinated debt securities and the subordinated debt securities, the “subordinated securities”). Debt securities, whether senior, senior subordinated, subordinated or junior subordinated, may be issued as convertible debt securities or exchangeable debt securities.

We have summarized herein certain terms and provisions of the form of indenture (the “indenture”). The summary is not complete and is qualified in its entirety by reference to the actual text of the indenture. The indenture is an exhibit to the registration statement of which this prospectus is a part. You should read the indenture for the provisions which may be important to you. The indenture is subject to and governed by the Trust Indenture Act of 1939, as amended.

The indenture does not limit the amount of debt securities which we may issue. We may issue debt securities up to an aggregate principal amount as we may authorize from time to time which securities may be in any currency or currency unit designated by us. The terms of each series of debt securities will be established by or pursuant to (a) a supplemental indenture, (b) a resolution of our board of directors, or (c) an officers' certificate pursuant to authority granted under a resolution of our board of directors. The prospectus supplement will describe the terms of any debt securities being offered, including:

- the title of the debt securities;
- the limit, if any, upon the aggregate principal amount or issue price of the debt securities of a series;
- ranking of the specific series of debt securities relative to other outstanding indebtedness, including any debt of any of our subsidiaries;
- the price or prices at which the debt securities will be issued;
- the designation, aggregate principal amount and authorized denominations of the series of debt securities;
- the issue date or dates of the series and the maturity date of the series;
- whether the securities will be issued at par or at a premium over or a discount from their face amount;
- the interest rate, if any, and the method for calculating the interest rate and basis upon which interest shall be calculated;
- the right, if any, to extend interest payment periods and the duration of the extension;
- the interest payment dates and the record dates for the interest payments;
- any mandatory or optional redemption terms or prepayment, conversion, sinking fund or exchangeability or convertibility provisions;
- the currency of denomination of the securities;
- the place where we will pay principal, premium, if any, and interest, if any, and the place where the debt securities may be presented for transfer;
- if payments of principal of, premium, if any, or interest, if any, on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;
- if other than denominations of \$1,000 or multiples of \$1,000, the denominations the debt securities will be issued in;
- whether the debt securities will be issued in the form of global securities or certificates;
- the applicability of and additional provisions, if any, relating to the defeasance of the debt securities;
- the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the entire principal amount;

- the currency or currencies, if other than the currency of the United States, in which principal and interest will be paid;
- the dates on which premium, if any, will be paid;
- any addition to or change in the “Events of Default” described in this prospectus or in the indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;
- any addition to or change in the covenants described in the prospectus or in the indenture with respect to the debt securities;
- our right, if any, to defer payment of interest and the maximum length of this deferral period; and
- other specific terms, including any additional events of default or covenants.

We may issue debt securities at a discount below their stated principal amount. Even if we do not issue the debt securities below their stated principal amount, for United States federal income tax purposes the debt securities may be deemed to have been issued with a discount because of certain interest payment characteristics. We will describe in any applicable prospectus supplement the United States federal income tax considerations applicable to debt securities issued at a discount or deemed to be issued at a discount, and will describe any special United States federal income tax considerations that may be applicable to the particular debt securities.

Senior Debt

Senior debt securities will rank equally and *pari passu* with all of our other unsecured and unsubordinated debt from time to time outstanding.

Subordinated Debt

The indenture does not limit our ability to issue subordinated debt securities. Any subordination provisions of a particular series of debt securities will be set forth in the supplemental indenture, board resolution or officers' certificate related to that series of debt securities and will be described in the relevant prospectus supplement.

If this prospectus is being delivered in connection with a series of subordinated debt securities, the accompanying prospectus supplement or the information incorporated by reference in this prospectus will set forth the approximate amount of senior indebtedness outstanding as of the end of the most recent fiscal quarter.

Conversion or Exchange Rights

Debt securities may be convertible into or exchangeable for our other securities or property. The terms and conditions of conversion or exchange will be set forth in the supplemental indenture, board resolution or officers' certificate related to that series of debt securities and will be described in the relevant prospectus supplement. The terms will include, among others, the following:

- the conversion or exchange price;
- the conversion or exchange period;
- provisions regarding our ability or the ability of the holder to convert or exchange the debt securities;
- events requiring adjustment to the conversion or exchange price; and
- provisions affecting conversion or exchange in the event of our redemption of the debt securities.

Merger, Consolidation or Sale of Assets

The indenture prohibits us from merging into or consolidating with any other person or selling, leasing or conveying substantially all of our assets and the assets of our subsidiaries, taken as a whole, to any person, unless:

- either we are the continuing corporation or the successor corporation or the person which acquires by sale, lease or conveyance substantially all our or our subsidiaries' assets is a corporation organized under the laws of the United States, any state thereof, or the District of Columbia, and expressly assumes the due and punctual payment of the principal of, and premium, if any, and interest, if any, on all the debt securities and the due performance of every covenant of the indenture to be performed or observed by us, by supplemental indenture satisfactory to the trustee, executed and delivered to the trustee by such corporation;

- immediately after giving effect to such transactions, no Event of Default described under the caption “Events of Default and Remedies” below or event which, after notice or lapse of time or both would become an Event of Default, has happened and is continuing; and
- we have delivered to the trustee an officers' certificate and an opinion of counsel each stating that such transaction and such supplemental indenture comply with the indenture provisions relating to merger, consolidation and sale of assets.

Upon any consolidation or merger with or into any other person or any sale, conveyance, lease, or other transfer of all or substantially all of our or our subsidiaries' assets to any person, the successor person shall succeed, and be substituted for, us under the indenture and each series of outstanding debt securities, and we shall be relieved of all obligations under the indenture and each series of outstanding debt securities to the extent we were the predecessor person.

Events of Default and Remedies

When we use the term “Event of Default” in the indenture with respect to the debt securities of any series, we mean:

- (1) default in paying interest on the debt securities when it becomes due and the default continues for a period of 30 days or more;
- (2) default in paying principal, or premium, if any, on the debt securities when due;
- (3) default is made in the payment of any sinking or purchase fund or analogous obligation when the same becomes due, and such default continues for 30 days or more;
- (4) default in the performance, or breach, of any covenant or warranty in the indenture (other than defaults specified in clause (1), (2) or (3) above) and the default or breach continues for a period of 60 days or more after we receive written notice of such default from the trustee or we and the trustee receive notice from the holders of at least 25% in aggregate principal amount of the outstanding debt securities of the series;
- (5) certain events of bankruptcy, insolvency, reorganization, administration or similar proceedings with respect to us have occurred; and
- (6) any other Event of Default provided with respect to debt securities of that series that is set forth in the applicable prospectus supplement accompanying this prospectus.

No Event of Default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an Event of Default with respect to any other series of debt securities. The occurrence of certain Events of Default or an acceleration under the indenture may constitute an event of default under certain of our other indebtedness that we may have outstanding from time to time. Unless otherwise provided by the terms of an applicable series of debt securities, if an Event of Default under the indenture occurs with respect to the debt securities of any series and is continuing, then the trustee or the holders of not less than 51% of the aggregate principal amount of the outstanding debt securities of that series may by written notice require us to repay immediately the entire principal amount of the outstanding debt securities of that series (or such lesser amount as may be provided in the terms of the securities), together with all accrued and unpaid interest and premium, if any. In the case of an Event of Default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an Event of Default.

After a declaration of acceleration, the holders of a majority in aggregate principal amount of outstanding debt securities of any series may rescind this accelerated payment requirement if all existing Events of Default, except for nonpayment of the

principal on the debt securities of that series that has become due solely as a result of the accelerated payment requirement, have been cured or waived and if the rescission of acceleration would not conflict with any judgment or decree. The holders of a majority in aggregate principal amount of the outstanding debt securities of any series also have the right to waive past defaults, except a default in paying principal or interest on any outstanding debt security, or in respect of a covenant or a provision that cannot be modified or amended without the consent of all holders of the debt securities of that series.

No holder of any debt security may seek to institute a proceeding with respect to the indenture unless such holder has previously given written notice to the trustee of a continuing Event of Default, the holders of not less than 51% in aggregate principal amount of the outstanding debt securities of the series have made a written request to the trustee to institute proceedings in respect of the Event of Default, the holder or holders have offered reasonable indemnity to the trustee and the trustee has failed to institute such proceeding within 60 days after it received this notice. In addition, within this 60-day period the trustee must not have received directions inconsistent with this written request by holders of a majority in aggregate principal amount of the outstanding debt securities of that series. These limitations do not apply, however, to a suit instituted by a holder of a debt security for the enforcement of the payment of principal, interest or any premium on or after the due dates for such payment.

During the existence of an Event of Default actually known to a responsible officer of the trustee, the trustee is required to exercise the rights and powers vested in it under the indenture and use the same degree of care and skill in its exercise as a prudent person would under the circumstances in the conduct of that person's own affairs. If an Event of Default has occurred and is continuing, the trustee is not under any obligation to exercise any of its rights or powers at the request or direction of any of the holders unless the holders have offered to the trustee security or indemnity reasonably satisfactory to the trustee. Subject to certain provisions, the holders of a majority in aggregate principal amount of the outstanding debt securities of any series have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust, or power conferred on the trustee.

The trustee will, within 90 days after receiving notice of any default, give notice of the default to the holders of the debt securities of that series, unless the default was already cured or waived. Unless there is a default in paying principal, interest or any premium when due, the trustee can withhold giving notice to the holders if it determines in good faith that the withholding of notice is in the interest of the holders. In the case of a default specified in clause (4) above describing Events of Default, no notice of default to the holders of the debt securities of that series will be given until 60 days after the occurrence of the event of default.

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any Event of Default (except in payment on any debt securities of that series) with respect to debt securities of that series if it in good faith determines that withholding notice is in the interest of the holders of those debt securities.

Modification and Waiver

The indenture may be amended or modified without the consent of any holder of debt securities in order to:

- evidence a successor to the trustee;
- cure ambiguities, defects or inconsistencies;
- provide for the assumption of our obligations in the case of a merger or consolidation or transfer of all or substantially all of our assets that complies with the covenant described under “- Merger, Consolidation or Sale of Assets”;
- make any change that would provide any additional rights or benefits to the holders of the debt securities of a series;
- add guarantors or co-obligors with respect to the debt securities of any series;
- secure the debt securities of a series;
- establish the form or forms of debt securities of any series;
- add additional Events of Default with respect to the debt securities of any series;
- add additional provisions as may be expressly permitted by the Trust Indenture Act;
- maintain the qualification of the indenture under the Trust Indenture Act; or

- make any change that does not adversely affect in any material respect the interests of any holder.

Other amendments and modifications of the indenture or the debt securities issued may be made with the consent of the holders of not less than a majority in aggregate principal amount of the outstanding debt securities of each series affected by the amendment or modification. However, no modification or amendment may, without the consent of the holder of each outstanding debt security affected:

- change the maturity date or the stated payment date of any payment of premium or interest payable on the debt securities;
- reduce the principal amount, or extend the fixed maturity, of the debt securities;
- change the method of computing the amount of principal or any interest of any debt security;
- change or waive the redemption or repayment provisions of the debt securities;
- change the currency in which principal, any premium or interest is paid or the place of payment;
- reduce the percentage in principal amount outstanding of debt securities of any series which must consent to an amendment, supplement or waiver or consent to take any action;
- impair the right to institute suit for the enforcement of any payment on the debt securities;
- waive a payment default with respect to the debt securities;
- reduce the interest rate or extend the time for payment of interest on the debt securities;
- adversely affect the ranking or priority of the debt securities of any series; or
- release any guarantor or co-obligor from any of its obligations under its guarantee or the indenture, except in compliance with the terms of the indenture.

Satisfaction, Discharge and Covenant Defeasance

We may terminate our obligations under the indenture with respect to the outstanding debt securities of any series, when:

- either:
 - all debt securities of any series issued that have been authenticated and delivered have been delivered to the trustee for cancellation; or
 - all the debt securities of any series issued that have not been delivered to the trustee for cancellation have become due and payable, will become due and payable within one year, or are to be called for redemption within one year and we have made arrangements satisfactory to the trustee for the giving of notice of redemption by such trustee in our name and at our expense, and in each case, we have irrevocably deposited or caused to be deposited with the trustee sufficient funds to pay and discharge the entire indebtedness on the series of debt securities; and
- we have paid or caused to be paid all other sums then due and payable under the indenture; and
- we have delivered to the trustee an officers' certificate and an opinion of counsel, each stating that all conditions precedent under the indenture relating to the satisfaction and discharge of the indenture have been complied with.

We may elect to have our obligations under the indenture discharged with respect to the outstanding debt securities of any series ("legal defeasance"). Legal defeasance means that we will be deemed to have paid and discharged the entire indebtedness represented by the outstanding debt securities of such series under the indenture, except for:

- the rights of holders of the debt securities to receive principal, interest and any premium when due;

- our obligations with respect to the debt securities concerning issuing temporary debt securities, registration of transfer of debt securities, mutilated, destroyed, lost or stolen debt securities and the maintenance of an office or agency for payment for security payments held in trust;

- the rights, powers, trusts, duties and immunities of the trustee; and
- the defeasance provisions of the indenture.

In addition, we may elect to have our obligations released with respect to certain covenants in the indenture (“covenant defeasance”). If we so elect, any failure to comply with these obligations will not constitute a default or an event of default with respect to the debt securities of any series. In the event covenant defeasance occurs, certain events, not including non-payment, bankruptcy and insolvency events, described under “Events of Default and Remedies,” will no longer constitute an event of default for that series.

In order to exercise either legal defeasance or covenant defeasance with respect to outstanding debt securities of any series:

- we must irrevocably have deposited or caused to be deposited with the trustee as trust funds for the purpose of making the following payments, specifically pledged as security for, and dedicated solely to the benefits of the holders of the debt securities of a series:
 - money in an amount; or
 - U.S. government obligations (or equivalent government obligations in the case of debt securities denominated in other than U.S. dollars or a specified currency) that will provide, not later than one day before the due date of any payment, money in an amount; or
 - a combination of money and U.S. government obligations (or equivalent government obligations, as applicable),

in each case sufficient, in the written opinion (with respect to U.S. or equivalent government obligations or a combination of money and U.S. or equivalent government obligations, as applicable) of a nationally recognized firm of independent public accountants to pay and discharge, and which shall be applied by the trustee to pay and discharge, all of the principal (including mandatory sinking fund payments), interest and any premium at due date or maturity;

- in the case of legal defeasance, we have delivered to the trustee an opinion of counsel stating that, under then applicable federal income tax law, the holders of the debt securities of that series will not recognize income, gain or loss for federal income tax purposes as a result of the deposit, defeasance and discharge to be effected and will be subject to the same federal income tax as would be the case if the deposit, defeasance and discharge did not occur;
- in the case of covenant defeasance, we have delivered to the trustee an opinion of counsel to the effect that the holders of the debt securities of that series will not recognize income, gain or loss for federal income tax purposes as a result of the deposit and covenant defeasance to be effected and will be subject to the same federal income tax as would be the case if the deposit and covenant defeasance did not occur;
- no event of default or default with respect to the outstanding debt securities of that series has occurred and is continuing at the time of such deposit after giving effect to the deposit or, in the case of legal defeasance, no default relating to bankruptcy or insolvency has occurred and is continuing at any time on or before the 91st day after the date of such deposit, it being understood that this condition is not deemed satisfied until after the 91st day;
- the legal defeasance or covenant defeasance will not cause the trustee to have a conflicting interest within the meaning of the Trust Indenture Act, assuming all debt securities of a series were in default within the meaning of such Act;
- the legal defeasance or covenant defeasance will not result in a breach or violation of, or constitute a default under, any other agreement or instrument to which we are a party;
- if prior to the stated maturity date, notice shall have been given in accordance with the provisions of the indenture;

- the legal defeasance or covenant defeasance will not result in the trust arising from such deposit constituting an investment company within the meaning of the Investment Company Act of 1940, as amended, unless the trust is registered under such Act or exempt from registration; and

- we have delivered to the trustee an officers' certificate and an opinion of counsel stating that all conditions precedent with respect to the legal defeasance or covenant defeasance have been complied with.

Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities.

Paying Agent and Registrar

The trustee will initially act as paying agent and registrar for all debt securities. We may change the paying agent or registrar for any series of debt securities without prior notice, and we or any of our subsidiaries may act as paying agent or registrar.

Form of Securities

Each debt security will be represented either by a certificate issued in definitive form to a particular investor or by one or more global securities representing the entire issuance of the series of debt securities. Certificated securities will be issued in definitive form and global securities will be issued in registered form. Definitive securities name you or your nominee as the owner of the security, and in order to transfer or exchange these securities or to receive payments other than interest or other interim payments, you or your nominee must physically deliver the securities to the trustee, registrar, paying agent or other agent, as applicable. Global securities name a depository or its nominee as the owner of the debt securities represented by these global securities. The depository maintains a computerized system that will reflect each investor's beneficial ownership of the securities through an account maintained by the investor with its broker/dealer, bank, trust company or other representative, as we explain more fully below.

Global Securities

We may issue the registered debt securities in the form of one or more fully registered global securities that will be deposited with a depository or its custodian identified in the applicable prospectus supplement and registered in the name of that depository or its nominee. In those cases, one or more registered global securities will be issued in a denomination or aggregate denominations equal to the portion of the aggregate principal or face amount of the securities to be represented by registered global securities. Unless and until it is exchanged in whole for securities in definitive registered form, a registered global security may not be transferred except as a whole by and among the depository for the registered global security, the nominees of the depository or any successors of the depository or those nominees.

If not described below, any specific terms of the depository arrangement with respect to any securities to be represented by a registered global security will be described in the prospectus supplement relating to those securities. We anticipate that the following provisions will apply to all depository arrangements.

Ownership of beneficial interests in a registered global security will be limited to persons, called participants, that have accounts with the depository or persons that may hold interests through participants. Upon the issuance of a registered global security, the depository will credit, on its book-entry registration and transfer system, the participants' accounts with the respective principal or face amounts of the securities beneficially owned by the participants. Any dealers, underwriters or agents participating in the distribution of the securities will designate the accounts to be credited. Ownership of beneficial interests in a registered global security will be shown on, and the transfer of ownership interests will be effected only through, records maintained by the depository, with respect to interests of participants, and on the records of participants, with respect to interests of persons holding through participants. The laws of some states may require that some purchasers of securities take physical delivery of these securities in definitive form. These laws may impair your ability to own, transfer or pledge beneficial interests in registered global securities.

So long as the depository, or its nominee, is the registered owner of a registered global security, that depository or its nominee, as the case may be, will be considered the sole owner or holder of the securities represented by the registered global security for all purposes under the indenture. Except as described below, owners of beneficial interests in a registered global security will not be entitled to have the securities represented by the registered global security registered in their names, will not receive or be entitled to receive physical delivery of the securities in definitive form and will not be considered the owners or holders of the securities under the indenture. Accordingly, each person owning a beneficial interest in a registered global security

must rely on the procedures of the depository for that registered global security and, if that person is not a participant, on the procedures of the participant through which the person owns its interest, to exercise any rights of a holder under the indenture. We understand that under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a registered global security desires to give or take any action that a holder is entitled to give or take under the indenture, the depository for the registered global security would authorize the participants holding the relevant beneficial interests to give or take that action, and the participants would authorize beneficial owners owning through them to give or take that action or would otherwise act upon the instructions of beneficial owners holding through them.

Principal, premium, if any, and interest payments on debt securities represented by a registered global security registered in the name of a depository or its nominee will be made to the depository or its nominee, as the case may be, as the registered owner of the registered global security. Neither we nor the trustee or any other agent of ours or the trustee will have any responsibility or liability for any aspect of the records relating to payments made on account of beneficial ownership interests in the registered global security or for maintaining, supervising or reviewing any records relating to those beneficial ownership interests.

We expect that the depository for any of the securities represented by a registered global security, upon receipt of any payment of principal, premium, interest or other distribution of underlying securities or other property to holders on that registered global security, will immediately credit participants' accounts in amounts proportionate to their respective beneficial interests in that registered global security as shown on the records of the depository. We also expect that payments by participants to owners of beneficial interests in a registered global security held through participants will be governed by standing customer instructions and customary practices, as is now the case with the securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of those participants.

If the depository for any of these securities represented by a registered global security is at any time unwilling or unable to continue as depository or ceases to be a clearing agency registered under the Exchange Act, and a successor depository registered as a clearing agency under the Exchange Act is not appointed by us within 90 days, we will issue securities in definitive form in exchange for the registered global security that had been held by the depository. Any securities issued in definitive form in exchange for a registered global security will be registered in the name or names that the depository gives to the trustee or other relevant agent of ours or theirs. It is expected that the depository's instructions will be based upon directions received by the depository from participants with respect to ownership of beneficial interests in the registered global security that had been held by the depository.

Unless we state otherwise in a prospectus supplement, the Depository Trust Company ("DTC") will act as depository for each series of debt securities issued as global securities. DTC has advised us that DTC is a limited-purpose trust company created to hold securities for its participating organizations (collectively, the "Participants") and to facilitate the clearance and settlement of transactions in those securities between Participants through electronic book-entry changes in accounts of its Participants. The Participants include securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. Access to DTC's system is also available to other entities such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a Participant, either directly or indirectly (collectively, the "Indirect Participants"). Persons who are not Participants may beneficially own securities held by or on behalf of DTC only through the Participants or the Indirect Participants. The ownership interests in, and transfers of ownership interests in, each security held by or on behalf of DTC are recorded on the records of the Participants and the Indirect Participants.

Governing Law

The indenture and each series of debt securities are governed by, and construed in accordance with, the laws of the State of New York.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. If we indicate in the prospectus supplement, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the registration statement that includes this prospectus.

General

We may issue warrants for the purchase of common stock, preferred stock or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and debt securities, and the warrants may be attached to or separate from these securities.

We will evidence each series of warrants by warrant certificates that we will issue under a separate agreement. We may enter into a warrant agreement with a warrant agent. We will indicate the name and address of the warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

- in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or
- in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Additional Information

We will describe in the applicable prospectus supplement the terms of the series of warrants, including:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at, and currency in which, this principal amount of debt securities may be purchased upon such exercise;
- in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;
- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreement and warrants may be modified;
- a discussion on any material or special United States federal income tax consequences of holding or exercising the warrants;
- the terms of the securities issuable upon exercise of the warrants; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to 5 p.m., Eastern time, on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

DESCRIPTION OF UNITS

We may issue units comprised of one or more of the other securities described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date. The applicable prospectus supplement may describe:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units;
- the terms of the unit agreement governing the units;
- United States federal income tax considerations relevant to the units; and
- whether the units will be issued in fully registered global form.

This summary of certain general terms of units and any summary description of units in the applicable prospectus supplement do not purport to be complete and are qualified in their entirety by reference to all provisions of the applicable unit agreement and, if applicable, collateral arrangements and depository arrangements relating to such units. The forms of the unit agreements and other documents relating to a particular issue of units will be filed with the SEC each time we issue units, and you should read those documents for provisions that may be important to you.

PLAN OF DISTRIBUTION

We may sell the securities through underwriters or dealers, through agents, or directly to one or more purchasers. The accompanying prospectus supplement will describe the terms of the offering of the securities, including:

- the name or names of any underwriters;

- the purchase price of the securities being offered and the proceeds we will receive from the sale;

- any over-allotment options pursuant to which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;
- any public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of the sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all the securities offered by the prospectus supplement. We may change from time to time the public offering price and any discounts or concessions allowed or reallocated or paid to dealers. We may use underwriters with whom we have a material relationship. We will describe such relationships in the prospectus supplement naming the underwriter and the nature of any such relationship.

We may engage in “at the market” offerings of our common stock, which are offerings into an existing trading market, at other than a fixed price, on or through the facilities of a national securities exchange or to or through a market maker otherwise than on an exchange.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of the securities, and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best efforts basis for the period of its appointment.

We may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of common shares, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of common shares. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be identified in the applicable prospectus supplement or a post-effective amendment to this registration statement.

All securities we offer other than common stock will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

We may provide agents and underwriters with indemnification against civil liabilities related to this offering, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

Rules of the Securities and Exchange Commission may limit the ability of any underwriters to bid for or purchase securities before the distribution of the securities is completed. However, underwriters may engage in the following activities in accordance with the rules:

- Stabilizing transactions - Underwriters may make bids or purchases for the purpose of pegging, fixing or maintaining the price of the shares, so long as stabilizing bids do not exceed a specified maximum.
- Over-allotments and syndicate covering transactions - Underwriters may sell more shares of our common stock than the number of shares that they have committed to purchase in any underwritten offering. This over-allotment creates a short position for the underwriters. This short position may involve either “covered” short sales or “naked” short sales. Covered

short sales are short sales made in an amount not greater than the underwriters' over-allotment option to purchase additional shares in any underwritten offering. The underwriters may close out any covered short position either by exercising their over-allotment option or by purchasing shares in the open market. To determine how they will close the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market, as compared to the price at which they may purchase shares through the over-allotment option. Naked short sales are short sales in excess of the over-allotment option. The underwriters must close out any naked position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that, in the open market after pricing, there may be downward pressure on the price of the shares that could adversely affect investors who purchase shares in the offering.

- Penalty bids - If underwriters purchase shares in the open market in a stabilizing transaction or syndicate covering transaction, they may reclaim a selling concession from other underwriters and selling group members who sold those shares as part of the offering.

Similar to other purchase transactions, an underwriter's purchases to cover the syndicate short sales or to stabilize the market price of our securities may have the effect of raising or maintaining the market price of our securities or preventing or mitigating a decline in the market price of our securities. As a result, the price of the securities may be higher than the price that might otherwise exist in the open market. The imposition of a penalty bid might also have an effect on the price of shares if it discourages resales of the securities.

If commenced, the underwriters may discontinue any of the activities at any time.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

LEGAL MATTERS

The validity of the issuance of the securities offered by this prospectus will be passed upon for us by Lowenstein Sandler PC, Roseland, New Jersey.

EXPERTS

The consolidated financial statements as of and for the year ended December 31, 2011, incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the report of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing in giving said report.

The 2010 consolidated financial statements (before the effects of the retrospective adjustments to the financial statements and financial statement disclosures) (not incorporated by reference or separately presented herein) have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference from NeoStem, Inc.'s Current Report on Form 8-K filed with the SEC on August 15, 2012 (which report expresses an unqualified opinion on the consolidated financial statements and includes an explanatory paragraph referring to the fact that Deloitte & Touche LLP was not engaged to audit, review or apply any procedures to (1) the adjustments to retrospectively apply the change in accounting related to the adoption of Financial Accounting Standards Board Accounting Standards Update 2011-05, "Comprehensive Income (Topic 220) - Presentation of Comprehensive Income" and (2) the retrospective adjustments for the discontinued operations discussed in Note 11 to the consolidated financial statements and, accordingly, does not express an opinion or any other form of assurance about whether such retrospective adjustments are appropriate and have been properly applied). The retrospective adjustments to the 2010 consolidated financial statements have been audited by Grant Thornton LLP. The 2010 consolidated financial statements incorporated in this prospectus by reference from NeoStem, Inc.'s Current Report on Form 8-K filed with the SEC on August 15, 2012, have been so incorporated in reliance upon the reports of Deloitte & Touche LLP and Grant Thornton LLP given upon their authority as experts in accounting and auditing.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The following documents previously filed by us with the SEC are incorporated in this prospectus by reference:

- (a) Our Annual Report on Form 10-K for the fiscal year ended December 31, 2011, filed with the SEC on March 20, 2012, portions of which have been updated by the Current Report on Form 8-K filed on August 15, 2012.

- (b) Amendment No. 1 on Form 10-K/A to our Annual Report on Form 10-K for the fiscal year ended December 31, 2011, filed with the SEC on April 30, 2012.
- (c) Our Preliminary Proxy Statement on Schedule 14A for our 2012 Annual Meeting of Stockholders, filed with the SEC on August 24, 2012.
- (d) Our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2012 and June 30, 2012, filed with the SEC on May 11, 2012 and August 14, 2012, respectively.
- (e) Our Current Reports on Form 8-K and amendments thereto, filed with the SEC on January 6, 2012, January 11, 2012, January 12, 2012, January 26, 2012, March 29, 2012, April 5, 2012, June 18, 2012, July 9, 2012, August 15, 2012 and August 24, 2012 (excluding any information deemed furnished pursuant to Item 2.02 or Item 7.01 of any such Current Report on Form 8-K).
- (f) Description of our common stock contained in the Registration Statement on Form 8-A, declared effective on August 8, 2007 (including any amendment or report filed with the SEC for the purpose of updating such description).

All reports and other documents that we file pursuant to Section 13(a) and 13(c), 14 and 15(d) of the Exchange Act prior to the filing of a post-effective amendment which indicates that all securities offered hereunder have been sold or which deregisters all such securities then remaining unsold shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing of such reports and documents.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, copies of these filings, excluding all exhibits unless an exhibit has been specifically incorporated by reference in such filings, at no cost, upon written or oral request made to:

NeoStem, Inc.
420 Lexington Avenue, Suite 350
New York, NY 10170
(212) 584-4180
Attention: Catherine M. Vaczy, Esq., Vice President and General Counsel

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form S-3 with the Securities and Exchange Commission under the Securities Act of 1933. This prospectus omits some information and exhibits included in the registration statement, copies of which may be obtained upon payment of a fee prescribed by the Commission or may be examined free of charge at the principal office of the SEC in Washington, D.C.

We are subject to the informational requirements of the Securities Exchange Act of 1934 and in accordance therewith file reports, proxy statements and other information with the SEC. The reports, proxy statements and other information filed by us with the SEC can be inspected and copied at the Public Reference Room maintained by the SEC at 100 Fifth Street, N.E., Washington, D.C. 20549. Copies of filings can be obtained from the Public Reference Room maintained by the SEC by calling the SEC at 1-800-SEC-0330. In addition, the Commission maintains a website that contains reports, proxy and informational statements and other information filed electronically with the SEC at <http://www.sec.gov>.

You may request, orally or in writing, a copy of these documents, which will be provided to you at no cost, by contacting Catherine M. Vaczy, Esq., Vice President and General Counsel, NeoStem, Inc., 420 Lexington Avenue, Suite 450, New York, NY 10170, telephone (212) 584-4180.

You should rely only on the information contained in this prospectus, including information incorporated by reference as described above, or any prospectus supplement that we have specifically referred you to. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of those documents or that any document incorporated by reference is accurate as of any date other than its filing date. You should not consider this prospectus to be an offer or solicitation relating to the securities in any jurisdiction in which such an offer or solicitation relating to the securities is not authorized. Furthermore, you should not consider this prospectus to be an offer or solicitation relating to the securities if the person making the offer or solicitation is not qualified to do so, or if it is unlawful for you to receive such an offer or solicitation.

\$30,000,000
plus 150,000 Commitment Shares



PROSPECTUS SUPPLEMENT

June 2, 2014
