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PROSPECTUS SUPPLEMENT
(To Prospectus dated February 19, 2009)

46,154,000 Shares
Class A Warrants to Purchase 34,615,500 Shares
Class B Warrants to Purchase 23,077,000 Shares

Aastrom

Common Stock

We are offering (i) 46,154,000 shares of our common stock, (ii) Class A warrants to purchase 34,615,500 shares of our common stock and (iii) Class B warrants to purchase 23,077,000 shares of our common stock. The common stock, Class A warrants and Class B warrants will be sold in units, with each unit consisting of (i) one share of common stock, (ii) a Class A warrant to purchase 0.75 of a share of common stock at an exercise price of $0.3718 per share and (iii) a Class B warrant to purchase 0.50 of a share of common stock at an exercise price of $0.26 per share. Each unit will be sold to the public at a price of $0.26 per unit. Units will not be issued or certificated. The shares of common stock, Class A warrants and Class B warrants are immediately separable and will be issued separately. The shares of common stock issuable from time to time upon exercise of the Class A warrants and Class B warrants are also being offered pursuant to this prospectus supplement and the accompanying base prospectus.

Our common stock is traded on the Nasdaq Capital Market under the symbol “ASTM.” On January 14, 2010, the closing price of our common stock on the Nasdaq Capital Market was $0.34 per share. There is no established public trading market for the offered Class A warrants or Class B warrants and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Class A warrants or Class B warrants on any national securities exchange.

Investing in our securities involves significant risks. Please see the section entitled “Risk Factors” beginning on page S-5 of this prospectus supplement, page 3 of the accompanying base prospectus and page 25 of our Quarterly Report on Form 10-Q for the quarter ended September 30, 2009.

	Per Unit	Total
Public offering price	$0.2600	$12,000,040
Underwriting discounts and commissions	$0.0182	$ 840,003
Proceeds, before expenses, to us	$0.2418	$11,160,037

We have granted the underwriter an over-allotment option to purchase up to an additional (i) 6,923,100 shares of our common stock at a price of $0.2275 per share, (ii) Class A warrants to purchase up to 5,192,325 shares of our common stock at a price of $0.03 per one Class A warrant and (iii) Class B warrants to purchase up to 3,461,550 shares of our common stock at a price of $0.02 per one Class B warrant, in each case less the underwriting discounts and commissions, all on the same terms and conditions as this offering, exercisable in whole or in part at any time from the date of this prospectus supplement until and including 30 days thereafter, to cover over-allotments, if any, and for market stabilization purposes. If the over-allotment option is exercised in full, the total public offering price, underwriting discounts and commissions and net proceeds, before expenses, to us will be $13,800,046, $966,003 and $12,834,043, respectively.

Delivery of the units to purchasers is expected to be made on or about January 21, 2010.

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 base prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Oppenheimer & Co.

The date of this prospectus supplement is January 15, 2010.

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This prospectus supplement and the accompanying base prospectus, dated February 19, 2009, relate to the offer by us of (i) 46,154,000 shares of our common stock, (ii) Class A warrants to purchase 34,615,500 shares of our common stock and (iii) Class B warrants to purchase 23,077,000 shares of our common stock. This prospectus supplement and the accompanying base prospectus also relate to the offer by us of the shares of common stock issuable from time to time upon exercise of the Class A warrants and Class B warrants. You should rely only on the information contained in or incorporated by reference into this prospectus supplement and the accompanying base prospectus and any free writing prospectuses prepared by us or on our behalf. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information contained in this prospectus supplement, the accompanying base prospectus and the documents incorporated by reference is accurate only as of their respective dates, regardless of the time of delivery of this prospectus supplement and accompanying base prospectus or of any sale of shares of our common stock, Class A warrants and Class B warrants in this offering (and the shares of common stock issuable from time to time upon exercise of the Class A warrants and Class B warrants). Our business, financial condition, results of operations and prospects may have subsequently changed.

No action is being taken in any jurisdiction outside the United States to permit a public offering of the shares of our common stock, Class A warrants or Class B warrants, or possession or distribution of this prospectus supplement and the accompanying base prospectus in that jurisdiction. Persons who come into possession of this prospectus supplement and the accompanying base prospectus in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus supplement and the accompanying base prospectus applicable to that jurisdiction.

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying base prospectus are part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, using a shelf registration process. Under this shelf registration process, we may offer and sell any combination of securities described in the accompanying base prospectus in one or more offerings, up to a total dollar amount of $50,000,000. The accompanying base prospectus provides you with a general description of the securities we may offer. Each time we use the accompanying base prospectus to offer securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. This prospectus supplement, the accompanying base prospectus and the documents incorporated by reference herein and therein include important information about us, our common stock and warrants being offered and other information you should know before investing. The prospectus supplement may also add, update or change information contained in the base prospectus. This prospectus supplement describes the specific details regarding this offering, including the price, the amount of common stock, Class A warrants and Class B warrants being offered, the risks of investing in our securities and the underwriting arrangements. The accompanying base prospectus provides general information about us, some of which may not apply to this offering.

Unless the context requires otherwise, in this prospectus supplement and the accompanying base prospectus the terms “Aastrom,” “we,” “us” and “our” refer to Aastrom Biosciences, Inc. and its subsidiaries.

To the extent that any statement that we make in this prospectus supplement is inconsistent with statements made in the accompanying base prospectus, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying base prospectus. You should read both this prospectus supplement and the accompanying base prospectus together with additional information described under the heading, “Where You Can Find More Information.”

PROSPECTUS SUPPLEMENT SUMMARY

The following summary highlights selected information about us. Because this is a summary, it does not contain all the information about us that may be important to you. You should read this entire prospectus supplement and accompanying base prospectus and the other documents and the financial statements and related notes which are incorporated by reference in this prospectus supplement and the accompanying base prospectus.

We are a regenerative medicine company *(a medical area that focuses on developing therapies that regenerate damaged or diseased tissues or organs)* that incorporated in 1989 and focuses on the clinical development of autologous cell products *(cells collected from a patient and returned to that same patient)* for the treatment of severe, chronic cardiovascular diseases. Our proprietary Tissue Repair Cell (TRC) technology expands the numbers of stem and early progenitor cells from a small amount of bone marrow collected from the patient. Bone marrow provides a rich source of diverse cell populations, is easily accessible and allows us to produce a personalized cell product for site-specific delivery to the patient's diseased tissues. We have treated more than 375 patients in various clinical trials over 10 years without any product safety issues, and are currently in the following stages of development:

- Cardiac regeneration — Cardiac Repair Cells (CRCs):
  - Dilated cardiomyopathy (DCM — a severe condition associated with chronic heart failure):
    - U.S. Food & Drug Administration (FDA) has granted Orphan Drug Designation to CRCs for use in treatment of DCM
    - U.S.: Phase II IMPACT-DCM surgical clinical trial
      - Surgical clinical trial began treating patients in November 2008
      - At December 31, 2009, 37 patients enrolled in trial
      - Five clinical sites in trial: Methodist DeBakey Heart &Vascular Center, Houston, TX, Baylor University Medical Center, Dallas, TX, The University of Utah School of Medicine, Salt Lake City, UT, Cleveland Clinic Heart & Vascular Institute, Cleveland, OH, and Emory University Hospital Midtown, Atlanta, GA
      - All 40 patients expected to be enrolled by January 31, 2010 and will be followed for 1 year
      - Expected to report clinical trial interim data during 1st quarter of calendar year 2010
      - Report of preliminary interim data expected once all patients have completed 6 month follow-up visits
    - U.S.: Phase II cardiac catheter clinical trial
      - Designed to explore a catheter-based approach for the delivery of CRCs to treat DCM patients
      - Clinical site training initiated during 4th quarter of calendar year 2009
      - Patient enrollment expected to begin during 1st quarter of calendar year 2010
- Vascular regeneration — Vascular Repair Cells (VRCs):
  - Critical limb ischemia (CLI — the most severe form of peripheral arterial disease):
    - U.S.: Phase IIb RESTORE-CLI clinical trial
      - At December 31, 2009, 79 patients enrolled in trial
      - Clinical data for planned interim analysis occurred during the 4th quarter of calendar year 2009; analysis is ongoing
      - Expected to report interim clinical data during 1st quarter of calendar year 2010

Our platform TRC technology is based on a manufacturing system we developed to produce human cells for clinical use. This automated cell manufacturing system enables 1) the “single-pass perfusion” cell culture process which is our patented manufacturing technology for growing large numbers of human stem and early progenitor cells, and 2) the ability to produce these products in an automated process that meets Good Manufacturing Practice (GMP) guidelines.

Our cell products have three features that we believe are critical for future success in regenerative medicine. Our products are:

- **autologous** which helps to ensure the product is not immuno-rejected by the patient and has the potential to engraft, differentiate and integrate long-term into functional tissues and organs,
- **expanded** which allows for higher numbers of stem and progenitor cells than would be obtainable with a product harvested directly from a patient and then returned to the patient without a culturing step, and
- composed of a **mixed population of cells** which includes all constituents of the original bone marrow and ensures that if multiple cell types are needed to regenerate the target tissue or a specific cell type is required, the product can directly address the need.

The cellular components of TRC-based products include adult stem and early progenitor cell populations which are capable of forming tissues such as cardiac, vascular, bone and neural and can reconstitute the hematopoietic and immune systems.

All TRC-based products are produced using our cell manufacturing system in centralized manufacturing facilities. We have one manufacturing site in the U.S. located at our headquarters in Ann Arbor, MI, and two contract facilities in the EU located in Stuttgart, Germany (Fraunhofer Institute for Interfacial Engineering and Biotechnology) and Bad Oeynhausen, Germany (Institute of Laboratory and Transfusion Medicine at the Heart Center).

Since our inception, we have been in the development stage and engaged in research and product development, conducted principally on our own behalf. Our initial business plan was to pursue our targeted markets by commercializing our cell manufacturing system and supplies; however, since 2004, we have phased out our marketing efforts promoting the cell manufacturing system as a commercial product. Currently, we have minimal product sales consisting of cell-based products to U.S.-based physicians.

We are currently focused on utilizing our TRC technology to produce autologous cell-based products for use in cardiovascular applications. At such time as we satisfy applicable regulatory approval requirements, we expect the sales of our TRC-based products to constitute nearly all of our product sales revenues.

We do not expect to generate positive cash flows from our consolidated operations for at least the next several years and then only if significant TRC-based cell product sales commence. Until that time, we expect that our revenue sources from our current activities will consist of only minor sales of our cell products and manufacturing supplies to our academic collaborators, grant revenue, research funding and potential licensing fees or other financial support from potential future corporate collaborators.

In May 2008, we reprioritized our clinical development programs to focus primarily on cardiovascular applications, including dilated cardiomyopathy and critical limb ischemia. We have discontinued further patient enrollment into our Phase III ON-CORE (osteonecrosis) bone regeneration trial. We do not anticipate initiating new clinical bone activity, reactivating the Phase III ON-CORE trial without additional financial resources.

We expect that we will need to raise significant funds in addition to this offering or pursue strategic transactions or other strategic alternatives in order to complete our product development programs, complete clinical trials needed to market our products, and commercialize our products. To date, we have financed our operations primarily through public and private sales of our equity securities, and we expect to continue to seek to obtain the required capital in a similar manner. As a development stage company, we have never been profitable and do not anticipate having net income unless and until significant product sales commence. With respect to our current activities, this is not likely to occur until we obtain significant additional funding, complete the required clinical trials for regulatory approvals, and receive the necessary approvals to market our products. Through September 30, 2009, we have accumulated a net loss of approximately $199 million. We cannot provide any assurance that we will be able to achieve profitability on a sustained basis, if at all, obtain the required funding, obtain the required regulatory approvals, or complete additional corporate partnering or acquisition transactions.

Our principal executive offices are located at 24 Frank Lloyd Wright Drive, P.O. Box 376, Ann Arbor, MI 48106. Our telephone number is (734) 930-5555.

THE OFFERING

Common stock offered	46,154,000 shares
Class A warrants offered	Class A warrants to purchase 34,615,500 shares, at an exercise price of $0.3718 per share. The Class A warrants will be exercisable beginning six months after issuance and will have a term of five years from the date of exercisability. This prospectus supplement also relates to the offering of the shares of common stock issuable upon exercise of the Class A warrants. For additional information regarding the Class A warrants, see “Description of Securities We are Offering —Warrants” below.
Class B warrants offered	Class B warrants to purchase 23,077,000 shares, at an exercise price of $0.26 per share. The Class B warrants will be immediately exercisable and will have a term of six months from the issuance date. This prospectus supplement also relates to the offering of the shares of common stock issuable upon exercise of the Class B warrants. For additional information regarding the Class B warrants, see “Description of Securities We are Offering —Warrants ” below.
Common stock to be outstanding immediately after this offering	220,125,085 shares (assuming none of the Class A warrants or Class B warrants issued in the offering are exercised)
Offering price	$0.26 per unit
Use of proceeds	General corporate purposes, including conducting operations and continuing to conduct our clinical development programs
Risk factors	See “Risk Factors” beginning on page S-5 of this prospectus supplement, page 3 of the accompanying base prospectus and page 25 of our Quarterly Report on Form 10-Q for the quarter ended September 30, 2009 for a discussion of factors you should carefully consider before deciding to invest in our securities.
Listing	Our common stock is listed on the NASDAQ Capital Market under the symbol “ASTM.” There is no established public trading market for the offered Class A warrants or Class B warrants and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Class A warrants or Class B warrants on any national securities exchange.

The number of shares of common stock to be outstanding after this offering is based on 173,971,085 shares outstanding as of January 8, 2010. This number excludes:

- a total of 14,832,693 shares of our common stock subject to outstanding options under our current and previous equity incentive plans as of September 30, 2009, having a weighted average exercise price of $0.88 per share (since September 30, 2009, an additional 3,512,200 options have been issued at an average exercise price of $0.30 per share);
- 5,921,053 shares of our common stock issuable upon exercise of outstanding warrants as of September 30, 2009, having a weighted average exercise price of $1.59 per share;
- 707,763 shares of our common stock available for future grants or awards under our equity incentive plans as of September 30, 2009; and
- an aggregate of 57,692,500 shares of common stock issuable upon the exercise of the Class A warrants and Class B warrants to be issued in this offering.

Unless otherwise indicated, all information in this prospectus supplement assumes no exercise of the underwriter’s overallotment option to purchase up to an additional (i) 6,923,100 shares of our common stock, (ii) Class A warrants to purchase up to 5,192,325 shares of our common stock and (iii) Class B warrants to purchase up to 3,461,550 shares of our common stock.

RISK FACTORS

You should carefully consider the following risk factors before purchasing our securities. The risks and uncertainties described below are not the only ones we face. There may be additional risks and uncertainties that are not known to us or that we do not consider to be material at this time. If the events described in these risks occur, our business, financial condition and results of operations would likely suffer. This prospectus supplement contains forward-looking statements that involve risks and uncertainties. Our actual results may differ significantly from the results discussed in the forward-looking statements. This section discusses the risk factors that might cause those differences. You should also consider the additional information set forth in our SEC reports on Forms 10-K, 10-Q and 8-K and in the other documents considered a part of this prospectus supplement and the accompanying base prospectus. See "Where You Can Find More Information."

Risks Related to our Business and our Common Stock

Our past losses and expected future losses cast doubt on our ability to operate profitably.

We were incorporated in 1989 and have experienced substantial operating losses since inception. As of September 30, 2009, we have incurred a cumulative net loss totaling approximately $199 million, and we have continued to incur losses since that date. These losses have resulted principally from costs incurred in the research and development (including clinical trials) of our cell culture technologies and our cell manufacturing system, general and administrative expenses, and the prosecution of patent applications. We expect to continue to incur significant operating losses over the next several years and at least until, and probably after, product sales increase, primarily owing to our research and development programs, including preclinical studies and clinical trials, and the establishment of marketing and distribution capabilities necessary to support commercialization efforts for our products. We cannot predict with any certainty the amount of future losses. Our ability to achieve profitability will depend, among other things, on successfully completing the development of our product candidates, timely initiation and completion of clinical trials, obtaining regulatory approvals, establishing manufacturing, sales and marketing arrangements with third parties, maintaining supplies of key manufacturing components, acquisition and development of complementary activities and raising sufficient cash to fund our operating activities. Therefore, we may not be able to achieve or sustain profitability.

The global economy and capital markets are challenging for the small cap biotech sector. This situation makes the timing and potential for future equity financings uncertain.

Our stock may be delisted from NASDAQ, which could affect its market price and liquidity.

As a result of the hearing that we had with the NASDAQ Hearing panel (the "Panel") on November 12, 2009, we have until March 31, 2010 to regain compliance with the minimum bid price requirement of NASDAQ. If we are unable to gain compliance, our common stock will be delisted from NASDAQ

We can regain compliance with the minimum closing bid price rule if the bid price of our common stock closes at $1.00 per share or higher for a minimum of ten consecutive business days before March 31, 2010, although NASDAQ may, in its discretion, require us to maintain a minimum closing bid price of at least $1.00 per share for a period in excess of ten consecutive business days (but generally no more than 20 consecutive business days) before determining that we have demonstrated the ability to maintain long-term compliance.

On December 14, 2009, we received approval from our shareholders to conduct a reverse stock split at any time within four months at the Board's discretion at a ratio between one for five and one for eight. We intend to attempt to regain compliance with the NASDAQ bid price requirement by effecting, if appropriate, a reverse stock split in the near future.

In the event that our common stock is delisted from the NASDAQ Capital Market there are alternative listing options, as follows:

- We may be eligible for quotation on FINRA's Over-the-Counter Bulletin Board (OTCBB) if a market maker makes an application to register and quote our common stock in accordance with SEC Rule 15c2-11, and such application, Form 211, is cleared. Only a market maker is able to file Form 211.
- If we do not qualify for quotation on the OTCBB, we could apply to other unregulated markets.

We cannot provide any assurance that our stock price will recover within the permitted grace period or that, if we effect a reverse stock split, our stock price will meet the bid price requirement. If our common stock were delisted, it could be more difficult to buy or sell our common stock and to obtain accurate quotations, and the price of our stock could suffer a material decline. Delisting may also impair our ability to raise capital.

We may not be able to raise the required capital to conduct our operations and develop and commercialize our products.

In addition to this offering and our existing financing program with Fusion Capital Fund II, LLC, under which we may put shares to Fusion for purchase so long as our stock price is not less than $0.36, we will require substantial additional capital resources in order to conduct our operations and develop and commercialize our products and cell manufacturing facilities. In our underwriting agreement with Oppenheimer & Co. Inc., we have agreed not to issue or sell any securities under our existing financing agreement with Fusion or otherwise enter into any similar equity financing program with any third party for a period of 180 days from the date of this prospectus supplement without the prior written consent of Oppenheimer & Co. Inc. In order to grow and expand our business, to introduce our new product candidates into the marketplace and to acquire or develop complementary business activities, we will need to raise a significant amount of additional funds. We will also need significant additional funds or a collaborative partner, or both, to finance the research and development activities of our cell product candidates for additional indications. Accordingly, we are continuing to pursue additional sources of financing.

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

- continued scientific progress in our research, clinical and development programs;
- costs and timing of conducting clinical trials and seeking regulatory approvals;
- competing technological and market developments;
- our ability to establish additional collaborative relationships;
- the effect of commercialization activities and facility expansions, if and as required; and
- complementary business acquisition or development opportunities.

Because of our long-term funding requirements, we intend to try to access the public or private equity markets if conditions are favorable to complete a financing, even if we do not have an immediate need for additional capital at that time, or whenever we require additional operating capital. This additional funding may not be available to us on reasonable terms, or at all. If adequate funds are not available in the future, we may be required to further delay or terminate research and development programs, curtail capital expenditures, and reduce business development and other operating activities.

If we cannot attract and retain key personnel, our business will suffer.

Our success depends in large part upon our ability to attract and retain highly qualified scientific and management personnel. We face competition for such personnel from other companies, research and academic institutions and other entities. Further, in an effort to conserve financial resources, we have implemented reductions in our work force on three previous occasions. As a result of these and other factors, we may not be successful in hiring or retaining key personnel. Our inability to replace any key employee could harm our operations.

On December 15, 2009, George W. Dunbar stepped down as our President, Chief Executive officer, and Chief Financial Officer and Timothy M. Mayleben assumed these roles. If we are unable to integrate our new leadership, our operations may be harmed.

Failure to obtain and maintain required regulatory approvals would severely limit our ability to sell our products.

We must obtain the approval of the FDA before commercial sales of our cell product candidates may commence in the U.S., which we believe will ultimately be the largest market for our products. We will also be required to obtain additional approvals from various foreign regulatory authorities to initiate sales activities of cell products in those jurisdictions, including the EU under regulation of the EMEA. If we cannot demonstrate the safety and efficacy of our cell product candidates produced in our manufacturing system, we may not be able to obtain required regulatory approvals or the FDA or other regulatory authorities could delay or withhold regulatory approval of our product candidates.

Finally, even if we obtain regulatory approval of a product, that approval may be subject to limitations on the indicated uses for which it may be marketed. Even after granting regulatory approval, the FDA and regulatory agencies in other countries continue to review and inspect marketed products, manufacturers and manufacturing facilities, which may create additional regulatory burdens. Later discovery of previously unknown problems with a product, manufacturer or facility may result in restrictions on the product or manufacturer, including a withdrawal of the product from the market. Further, regulatory agencies may establish additional regulations that could prevent or delay regulatory approval of our products.

Any changes in the governmental regulatory classifications of our products could prevent, limit or delay our ability to market or develop our products.

The FDA establishes regulatory requirements based on the classification of a product. Because our product development programs are designed to satisfy the standards applicable to biological licensure for our cellular products, any change in the regulatory classification or designation would affect our ability to obtain FDA approval of our products. Each of these cell products (such as our TRC-based products) is, under current regulations, regulated as a biologic, which requires a Biologic License Application (BLA).

EU Directives and regulations (laws) have become effective, and have influenced the requirements for manufacturing cell products and the conduct of clinical trials. For products that are regulated as an ATMP, the EU Directive requires: (i) preclinical laboratory and animal testing; (ii) submission of an IMPD to the Competent Authorities of the Member State where the clinical trial will be conducted, which must be approved prior to the initiation of human clinical studies; (iii) adequate and well-controlled clinical trials to establish the safety and efficacy of the product for its intended use; (iv) submission to EMEA for a Marketing Authorization (MA); and, (v) review and approval of the MA. Under the newly approved ATMP regulation for cellular products only the EMEA will be allowed to approve cell-based medicinal products (a “centralized” review of the submission) after December 31, 2008.

The regulatory requirements to market somatic cellular and ATMP products have changed significantly with the approval of the EU ATMP regulation. Beginning January 1, 2008, a one year transition time was put into effect. After December 31, 2008, any product that is considered “tissue engineered” under the definitions provided in the ATMP regulation was granted a four year “grandfather” marketing allowance if that product has been on the market on or before the end of the transition period.

Germany had not required marketing authorization to distribute cultured expanded autologous tissue products for tissue regeneration when the newly revised law became effective. We had introduced a product into the German market by that time and we fall under the “grandfathered” regulations for some period of time before we will need to apply for a centralized marketing authorization.

Our inability to complete our product development activities successfully would severely limit our ability to operate or finance operations.

In order to commercialize our cell product candidates in the U.S. and the EU, we must complete substantial clinical trials and obtain sufficient safety and efficacy results to support required registration approval and market acceptance of our cell product candidates. We may not be able to successfully complete the development of our product candidates, or successfully market our technologies or product candidates. We, and any of our potential collaborators, may encounter problems and delays relating to research and development, regulatory approval and intellectual property rights of our technologies and product candidates. Our research and development programs may not be successful, and our cell culture technologies and product candidates may not facilitate the production of cells outside the human body with the expected result. Our technologies and cell product candidates may not prove to be safe and efficacious in clinical trials, and we may not obtain the requisite regulatory approvals for our technologies or product candidates and the cells produced in such products. If any of these events occur, we may not have adequate resources to continue operations for the period required to resolve the issue delaying commercialization and we may not be able to raise capital to finance our continued operation during the period required for resolution of that issue.

We must successfully complete our clinical trials to be able to market certain of our products.

To be able to market therapeutic cell products in the U.S. and across the EU, we must demonstrate, through extensive preclinical studies and clinical trials, the safety and efficacy of our processes and product candidates. If our clinical trials are not successful, our products may not be marketable.

Our ability to complete our clinical trials in a timely manner depends on many factors, including the rate of patient enrollment. Patient enrollment can vary with the size of the patient population, the proximity of suitable patients to clinical sites, perceptions of the utility of cell therapy for the treatment of certain diseases, and the eligibility criteria for the study. We have experienced delays in patient accrual in our previous and current clinical trials. If we experience future delays in patient accrual, we could experience increased costs and delays associated with clinical trials, which would impair our product development programs and our ability to market our products. Furthermore, the FDA monitors the progress of clinical trials and it may suspend or terminate clinical trials at any time due to patient safety, demonstrated lack of efficacy or other considerations.

Our research programs are currently directed at improving TRC-based product functionality for certain clinical indications, improving product shelf life, and decreasing the cost of manufacturing our TRC-based products. These production process changes may alter the functionality of our cells and require various additional levels of experimental and clinical testing and evaluation. Any such testing could lengthen the time before these products would be commercially available.

Even if successful clinical results are reported for a product from a completed clinical trial, this does not mean that the results will be sustained over time, or will be sufficient for a marketable or regulatory approvable product.

Failure of third parties to manufacture or supply certain components, equipment, disposable devices and other materials used our cell manufacturing process would impair our TRC-based cell product development.

We rely solely on third parties such as BioLife and Invitrogen to manufacture and supply certain components, equipment, disposable devices and other materials used our cell manufacturing process to develop our TRC-based cell products.

It would be difficult to obtain alternate sources of supply for many of these items on a short-term basis. If any of our key manufacturers or suppliers fails to perform their respective obligations or if our supply of certain components, equipment, disposable devices and other materials is limited or interrupted, it would impair our ability to manufacture our TRC-based cell products, which would delay our ability to conduct our clinical trials or market our product candidates on a timely and cost-competitive basis, if at all.

Failure of third parties to manufacture component parts or provide limited source supplies, or the imposition of additional regulation, would impair our new product development.

We rely solely on third parties such as Sparton (formerly Astro), Ethox, Moll, Lonza and Genpore to manufacture or supply certain of our devices/manufacturing equipment, as well as component parts and other materials used in the cell product manufacturing process. We would not be able to obtain alternate sources of supply for many of these items on a short-term basis. If any of our key manufacturers or suppliers fails to perform their respective obligations or if our supply of components or other materials is limited or interrupted, we would not be able to conduct clinical trials or market our product candidates on a timely and cost-competitive basis, if at all.

Finally, we may not be able to continue our present arrangements with our suppliers, supplement existing relationships, establish new relationships or be able to identify and obtain the ancillary materials that are necessary to develop our product candidates in the future. Our dependence upon third parties for the supply and manufacture of these items could adversely affect our ability to develop and deliver commercially feasible products on a timely and competitive basis.

Manufacturing our cell products in centralized facilities may increase the risk that we will not have adequate quantities of our cell products for clinical programs.

We rely on third party manufacturers, Fraunhofer Institute for Interfacial Engineering and Biotechnology in Stuttgart, Germany and the Institute of Laboratory and Transfusion Medicine at the Heart Center in Bad Oeynhausen, Germany, to supply our TRC-based cell products for certain EU clinical activities. Reliance on third party manufacturers entails risks including regulatory compliance and quality assurance and the possible breach of the manufacturing agreement by the third party. We are subject to similar regulatory and compliance risks at our site in Ann Arbor, Michigan. All sites are subject to ongoing, periodic, unannounced inspection by regulatory agencies to ensure strict compliance with GMP and Good Clinical Practices (GCP) regulations and other governmental regulations and corresponding foreign standards. Our present and future manufacturers might not be able to comply with these regulatory requirements. We do not have redundant cell manufacturing sites in the U.S. In the event our cell manufacturing facilities are damaged or destroyed or are subject to regulatory restrictions, our clinical trial programs and other business prospects would be adversely affected.

Even if we obtain regulatory approvals to sell our products, lack of commercial acceptance could impair our business.

We will be seeking to obtain regulatory approvals to market our TRC-based cell products for tissue repair and regeneration treatments. Even if we obtain all required regulatory approvals, we cannot be certain that our products and processes will be accepted in the marketplace at a level that would allow us to operate profitably. Our products may be unable to achieve commercial acceptance for a number of reasons, such as the availability of alternatives that are less expensive, more effective or easier to use; the perception of a low cost-benefit ratio for the product amongst physicians and hospitals; or an inadequate level of product support from us or a commercial partner. Our technologies or product candidates may not be employed in all potential applications being investigated, and any reduction in applications would limit the market acceptance of our technologies and product candidates and our potential revenues.

The market for our products will be heavily dependent on third party reimbursement policies.

Our ability to successfully commercialize our product candidates will depend on the extent to which government healthcare programs, such as Medicare and Medicaid, as well as private health insurers, health maintenance organizations and other third party payors will pay for our products and related treatments. Reimbursement by third party payors depends on a number of factors, including the payor's determination that use of the product is safe and effective, not experimental or investigational, medically necessary, appropriate for the specific patient and cost-effective. Reimbursement in the U.S. or foreign countries may not be available or maintained for any of our product candidates. If we do not obtain approvals for adequate third party reimbursements, we may not be able to establish or maintain price levels sufficient to realize an appropriate return on our investment in product development. Any limits on reimbursement from third party payors may reduce the demand for, or negatively affect the price of, our products. For example, in the past, published studies suggested that stem cell transplantation for breast cancer, which constituted a significant portion of the overall stem cell therapy market at the time, may have limited clinical benefit. The lack of reimbursement for these procedures by insurance payors has negatively affected the marketability of our products for this indication in the past.

Use of animal-derived materials could harm our product development and commercialization efforts.

Some of the manufacturing materials and components we use in, and are critical to, implementation of our TRC technology involve the use of animal-derived products, including fetal bovine serum. Suppliers or regulatory changes may limit or restrict the availability of such materials for clinical and commercial use. We currently purchase all of our fetal bovine sera from protected herds in Australia and New Zealand. These sources are considered to be the safest and raise the least amount of concern from the global regulatory agencies. If, for example, the so-called "mad cow disease" occurs in New Zealand or in Australia, it may lead to a restricted supply of the serum currently required for the TRC-based product manufacturing processes. Any restrictions on these materials would impose a potential competitive disadvantage for our products or prevent our ability to manufacture TRC-based cell products. Regulatory authorities in the EU are reviewing the safety issues related to the use of animal-derived materials, which we currently use in our production process. The FDA has issued draft regulations for controls over bovine materials. These proposed regulations do not appear to affect our ability to purchase the manufacturing materials we currently use. However, the FDA may issue final regulations that could affect our operations. We do not know what actions, if any, the authorities may take as to animal derived materials specific to medicinal products distributed in the EU. Our inability to develop or obtain alternative compounds would harm our product development and commercialization efforts. There are certain limitations in the supply of certain animal-derived materials, which may lead to delays in our ability to complete clinical trials or eventually to meet the anticipated market demand for our cell products.

Given our limited internal manufacturing, sales, marketing and distribution capabilities, we need to develop increased internal capability or collaborative relationships to manufacture, sell, market and distribute our products.

We have only limited internal manufacturing, sales, marketing and distribution capabilities. As market needs develop, we intend to establish and operate commercial-scale manufacturing facilities, which will need to comply with all applicable regulatory requirements. We will also need to develop new configurations of our cell manufacturing system for these facilities to enable processes and cost efficiencies associated with large-scale manufacturing. Establishing these facilities will require significant capital and expertise. We may need to make such expenditures when there are significant uncertainties as to the market opportunity. Any delay in establishing, or difficulties in operating, these facilities will limit our ability to meet the anticipated market demand for our cell products. We intend to get assistance to market some of our future cell products

through collaborative relationships with companies with established sales, marketing and distribution capabilities. Our inability to develop and maintain those relationships would limit our ability to market, sell and distribute our products. Our inability to enter into successful, long-term relationships could require us to develop alternate arrangements at a time when we need sales, marketing or distribution capabilities to meet existing demand. We may market one or more of our TRC-based products through our own sales force. Our inability to develop and retain a qualified sales force could limit our ability to market, sell and distribute our cell products.

The issuance of additional common stock for funding has the potential for substantial dilution.

As noted above, we will need significant additional equity funding, in addition to this offering and the transactions with Fusion Capital, to provide us with the capital to reach our objectives. We may enter into financing transactions at prices which are at a substantial discount to market. Such an equity issuance would cause a substantially larger number of shares to be outstanding and would dilute the ownership interest of existing shareholders.

Our stock price has been volatile and future sales of substantial numbers of our shares could have an adverse affect on the market price of our shares.

The market price of shares of our common stock has been volatile, ranging in closing price between $0.26 and $0.73 during the twelve month period ended December 31, 2009. The price of our common stock may continue to fluctuate in response to a number of events and factors, such as:

- clinical trial results
- the amount of our cash resources and our ability to obtain additional funding
- announcements of research activities, business developments, technological innovations or new products by us or our competitors
- entering into or terminating strategic relationships
- changes in government regulation
- disputes concerning patents or proprietary rights
- changes in our revenues or expense levels
- public concern regarding the safety, efficacy or other aspects of the products or methodologies we are developing
- news or reports from other stem cell, cell therapy or regenerative medicine companies
- reports by securities analysts
- status of the investment markets
- concerns related to management transitions
- delisting from the NASDAQ Capital Market

Any of these events may cause the price of our shares to fall, which may adversely affect our business and financing opportunities. In addition, the stock market in general and the market prices for biotechnology companies in particular have experienced significant volatility that often has been unrelated to the operating performance or financial conditions of such companies. These broad market and industry fluctuations may adversely affect the trading price of our stock, regardless of our operating performance or prospects.

If we do not keep pace with our competitors and with technological and market changes, our products will become obsolete and our business may suffer.

The markets for our products are very competitive, subject to rapid technological changes, and vary for different candidates and processes that directly compete with our products. Our competitors may have developed, or could in the future develop, new technologies that compete with our products or even render our products obsolete. As an example, in the past, published studies have suggested that hematopoietic stem cell therapy use for bone marrow transplantation, following marrow ablation due to chemotherapy, may have limited clinical benefit in the treatment of breast cancer, which was a significant portion of the overall hematopoietic stem cell transplant market. This resulted in the practical elimination of this market for our cell-based product for this application.

Our cell manufacturing system is designed to improve and automate the processes for producing cells used in therapeutic procedures. Even if we are able to demonstrate improved or equivalent results, the cost or process of treatment and other factors may cause researchers and practitioners to not use our products and we could suffer a competitive disadvantage. Finally, to the extent that others develop new technologies that address the targeted application for our products, our business will suffer.

If our patents and proprietary rights do not provide substantial protection, our business and competitive position will suffer.

Our success depends in large part on our ability to develop or license and protect proprietary products and technologies. However, patents may not be granted on any of our pending or future patent applications. Also, the scope of any of our issued patents may not be sufficiently broad to offer meaningful protection. In addition, our issued patents or patents licensed to us could be successfully challenged, invalidated or circumvented so that our patent rights would not create an effective competitive barrier. Certain patent equivalents to the U.S. patents have also been issued in other jurisdictions including Australia, Japan, the Republic of Korea, Canada and under the European Convention. Furthermore, we rely on exclusive, world-wide licenses relating to the production of human cells granted to us by the University of Michigan for certain of our patent rights. If we materially breach such agreements or otherwise fail to materially comply with such agreements, or if such agreements expire or are otherwise terminated by us, we may lose our rights under the patents held by the University of Michigan. Currently, each of these licenses will terminate when the patent underlying the license expires. The first of these underlying patents will expire on March 21, 2012. We also rely on trade secrets and unpatentable know-how that we seek to protect, in part, by confidentiality agreements with our employees, consultants, suppliers and licensees. These agreements may be breached, and we might not have adequate remedies for any breach. If this were to occur, our business and competitive position would suffer.

Intellectual property litigation could harm our business.

Our success will depend in part on our ability to develop commercially viable products without infringing the proprietary rights of others. Although we have not been subject to any filed infringement claims, other patents could exist or could be filed that would prohibit or limit our ability to market our products or maintain our competitive position. In the event of an intellectual property dispute, we may be forced to litigate. Intellectual property litigation would divert management’s attention from developing our products and would force us to incur substantial costs regardless of whether we are successful. An adverse outcome could subject us to significant liabilities and force us to curtail or cease the development and sale of our products and processes.

The government maintains certain rights in technology that we develop using government grant money and we may lose the revenues from such technology if we do not commercialize and utilize the technology pursuant to established government guidelines.

Certain of our and our licensors’ research have been or are being funded in part by government grants. As a result of such funding, the U.S. Government has established guidelines and have certain rights in the technology developed with the grant. If we fail to meet these guidelines, we would lose our exclusive rights to these products, and we would lose potential revenue derived from the sale of these products.

Potential product liability claims could affect our earnings and financial condition.

We face an inherent business risk of exposure to product liability claims in the event that the manufacture or use of TRC-based products during clinical trials, or after commercialization, results in adverse events. As a result, we may incur significant product liability exposure, which could exceed existing insurance coverage. We may not be able to maintain adequate levels of insurance at reasonable cost or on reasonable terms. Excessive insurance costs or uninsured claims would increase our operating loss and affect our financial condition.

Our corporate documents and Michigan law contain provisions that may make it more difficult for us to be acquired.

Our Board of Directors has the authority, without shareholder approval, to issue shares of preferred stock and to fix the rights, preferences, privileges and restrictions of these shares without any further vote or action by our shareholders. Michigan law contains provisions that make it more difficult for a 10% shareholder and its affiliates to acquire a Michigan corporation. These provisions may have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from attempting to acquire control of, our Company. This effect could occur even if our shareholders consider the change in control to be in their best interest.

We are required to evaluate our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act of 2002 and any adverse results from such evaluation could have a negative market reaction.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 (Section 404), we are required to furnish a report by our management on our internal control over financial reporting. That report must contain, among other matters, an assessment of the design and operating effectiveness of our internal controls over financial reporting as of the end of the fiscal year. This assessment must include disclosure of any material weaknesses in our internal control over financial reporting identified by management. That report must also contain a statement that our independent registered public accounting firm has issued an attestation report on the design and operating effectiveness of our system of internal accounting controls over financial reporting. If in the future we are unable to assert that our internal control over financial reporting is effective as of the end of the then current fiscal year (or, if our independent registered public accounting firm is unable to express an unqualified opinion on the design and operating effectiveness of our internal controls), we could lose investor confidence in the accuracy and completeness of our financial reports, which would have a negative effect on our stock price and our ability to raise capital.

Risks Related To This Offering

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

Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not necessarily improve our results of operations or enhance the value of our common stock. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, financial condition, operating results and cash flow, and could cause the price of our common stock to decline.

Substantial future sales of our common stock in the public market may depress our stock price.

As of January 8, 2010, we had approximately 174 million shares of common stock outstanding. The market price of our common stock could drop due to sales of a large number of shares or the perception that such sales could occur. These factors also could make it more difficult to raise funds through future offerings of common stock or warrants.

The exercise of our outstanding options and warrants will dilute shareholders and could decrease our stock price.

The existence of our outstanding options and warrants, including any warrants to be issued pursuant to this offering, may adversely affect our stock price due to sales of a large number of shares or the perception that such sales could occur. These factors also could make it more difficult to raise funds through future offerings of common stock or warrants, and could adversely impact the terms under which we could obtain additional equity capital. Exercise of outstanding options and warrants, or any future issuance of additional shares of common stock or other equity securities, including but not limited to options, warrants or other derivative securities convertible into our common stock, may result in significant dilution to our shareholders and may decrease our stock price.

There is no public market for the Class A warrants or Class B warrants in this offering.

There is no established public trading market for the Class A warrants or Class B warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing the Class A warrants or Class B warrants on any securities exchange or other trading market. Without an active market, the liquidity of the Class A warrants and Class B warrants will be limited.

FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying base prospectus, including the documents that we incorporate by reference, contains forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act. Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but are not always, made through the use of words or phrases such as “anticipates,” “estimates,” “plans,” “projects,” “trends,” “opportunity,” “comfortable,” “current,” “intention,” “position,” “assume,” “potential,” “outlook,” “remain,” “continue,” “maintain,” “sustain,” “seek,” “achieve,” “continuing,” “ongoing,” “expects,” “management believes,” “we believe,” “we intend” and similar words or phrases, or future or conditional verbs such as “will,” “would,” “should,” “could,” “may,” or similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties which could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus supplement, and in particular those factors listed under the section entitled “Risk Factors.”

Because the factors referred to in the preceding paragraph could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements we make, you should not place undue reliance on any such forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement or statements to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

USE OF PROCEEDS

We estimate that the net proceeds we will receive from this offering will be approximately $10.9 million (or $12.8 million if the underwriter exercises its overallotment option in full) after deducting the underwriting fees and our estimated offering expenses and assuming that we sell the maximum number of securities offered hereby. We will not receive any proceeds from the sale of common stock issuable upon exercise of the Class A warrants and Class B warrants that we are offering unless and until such warrants are exercised. If the Class A warrants and Class B warrants are fully exercised for cash, we will receive additional proceeds of approximately $18.8 million. We will not pay the underwriter any fee with respect to shares of our common stock issued upon exercise of the Class A warrants and Class B warrants.

We intend to use any net proceeds from this offering, together with other available funds, for general corporate purposes, including conducting operations and continuing to conduct our clinical development programs.

We have not specifically identified the precise amounts we will spend on each of these areas or the timing of these expenditures. The amounts actually expended for each purpose may vary significantly depending upon numerous factors, including the amount and timing of the proceeds from this offering, progress with clinical trials and other product development activities, other cell therapy application programs and changing assessments of potential market opportunities and competitive developments. In addition, expenditures may also depend on the establishment of new collaborative arrangements with other companies, the availability of other financing, and other factors.

We anticipate that we will be required to raise substantial additional capital to continue to fund the clinical development of our cell therapy applications. We may raise additional capital through additional public or private financing, as well as collaborative relationships, incurring debt and other available sources.

DILUTION

If you invest in our securities in this offering, your interest will be diluted to the extent of the difference between the public offering price per unit and the net tangible book value per share of our common stock immediately after this offering.

As of September 30, 2009, we had a net tangible book value of $17,830,000, or $0.10 per share of common stock based upon 171,774,132 shares outstanding. Net tangible book value per share is equal to our total tangible assets (total assets less intangible assets) less total liabilities, divided by the number of shares of our outstanding common stock.

Dilution in net tangible book value per share represents the difference between the amount per unit paid by purchasers of securities in this offering and the net tangible book value per share of common stock immediately after the completion of this offering. Without taking into account any other changes in our net tangible book value since September 30, 2009, after giving effect to our sale of units consisting of (i) 46,154,000 shares of common stock, (ii) Class A warrants to purchase 34,615,500 shares of our common stock and (iii) Class B warrants to purchase 23,077,000 shares of our common stock in this offering at the public offering price of $0.26 per unit and after deducting the underwriter's fee and estimated offering expenses payable by us (but excluding any proceeds received upon exercise of warrants), our pro forma net tangible book value as of September 30, 2009 would have been $28,790,000, or $0.13 per share. This amount represents an immediate increase in net tangible book value of $0.03 per share to our existing shareholders and an immediate dilution in net tangible book value of $ 0.13 per share to new investors purchasing our securities in this offering. The following table illustrates this per share dilution:

Public offering price per unit		$0.26
Net tangible book value per share as of September 30, 2009	$0.10	
Increase in net tangible book value per share attributable to this offering	$0.03	
Pro forma net tangible book value per share as of September 30, 2009 after giving effect to this offering		$0.13
Dilution per share to new investors in this offering		$0.13

These calculations exclude:

- a total of 14,832,693 shares of our common stock subject to outstanding options under our current and previous equity incentive plans as of September 30, 2009, having a weighted average exercise price of $0.88 per share (since September 30, 2009, an additional 3,512,200 options have been issued at an average exercise price of $0.30 per share);
- 5,921,053 shares of our common stock issuable upon exercise of outstanding warrants as of September 30, 2009, having a weighted average exercise price of $1.59 per share;
- 707,763 shares of our common stock available for future grants or awards under our equity incentive plans as of September 30, 2009; and
- an aggregate of 57,692,500 shares of common stock issuable upon the exercise of the Class A warrants and Class B warrants to be issued in this offering.

To the extent that any of these options or warrants are exercised, there will be further dilution to new investors.

To the extent that the underwriter exercises its overallotment option to purchase up to an additional (i) 6,923,100 shares of our common stock, (ii) Class A warrants to purchase up to 5,192,325 shares of our common stock and (iii) Class B warrants to purchase up to 3,461,550 shares of our common stock, there will be further dilution to new investors.

To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our shareholders.

DESCRIPTION OF SECURITIES WE ARE OFFERING

We are offering (i) 46,154,000 shares of our common stock, (ii) Class A warrants to purchase 34,615,500 shares of our common stock and (iii) Class B warrants to purchase 23,077,000 shares of our common stock. The common stock, Class A warrants and Class B warrants will be sold in units, with each unit consisting of (i) one share of common stock, (ii) a Class A warrant to purchase 0.75 of a share of common stock at an exercise price of $0.3718 per share and (iii) a Class B warrant to purchase 0.50 of a share of common stock at an exercise price of $0.26 per share. Units will not be issued or certificated. The shares of common stock, Class A warrants and Class B warrants are immediately separable and will be issued separately. The shares of common stock issuable from time to time upon exercise of the Class A warrants and Class B warrants are also being offered pursuant to this prospectus supplement and the accompanying base prospectus.

Common Stock

The material terms and provisions of our common stock are described under the caption “Description of Capital Stock” starting on page 13 of the accompanying base prospectus.

Warrants

The following is a summary of the material attributes and characteristics of the Class A warrants and Class B warrants.

The Class A warrants and Class B warrants will each be governed by a warrant agreement (the “Warrant Agreements”) to be entered into between us and Continental Stock Transfer & Trust Company, as agent for the holders of the Class A warrants and Class B warrants. The following description of the terms of each of the Warrant Agreements is subject to the detailed provisions such Warrant Agreement.

Each Class A warrant will have an exercise price of $0.3718 per share, subject to adjustment as summarized below, will be exercisable at any time beginning six months after issuance until 5:30 p.m. (New York time) on the date that is five years from the date of exercisability.

Each Class B warrant will have an exercise price of $0.26 per share, subject to adjustment as summarized below, will be immediately exercisable at any time until 5:30 p.m. (New York time) on the date that is six months from the date of issuance.

There is no market through which the Class A warrants or Class B warrants may be sold and purchasers may not be able to resell the Class A warrants or Class B warrants purchased under this prospectus supplement. This may affect the pricing of the Class A warrants and Class B warrants in the secondary market, the transparency and availability of trading prices, the liquidity of such Class A warrants and Class B warrants, and the extent of issuer regulation. See “Risk Factors.”

Certificates for the Class A warrants and Class B warrants may be issued in “book-entry only” form to DTC or in fully registered form. If the certificates are issued in fully registered form, a register of holders will be maintained at the principal office of Continental Stock Transfer & Trust Company in New York. One or more certificates may be exchanged for one or more certificates of different denominations evidencing in the aggregate the same number of Class A warrants or Class B warrants as the certificates being exchanged. If the certificates representing the Class A warrants or Class B warrants are issued in “book-entry only” form to DTC, such 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.

Each Warrant Agreement will provide that the share ratio and exercise price of the Class A warrants and Class B warrants will be subject to adjustment in the event of a subdivision or consolidation of our common stock. Each Warrant Agreement will also provide that if there is: (i) any reclassification or change of our common stock into other shares; (ii) any consolidation, amalgamation, arrangement or other business combination of us resulting in any reclassification or change of our common stock into other shares; or (iii) any sale, lease, exchange or transfer of our assets in their entirety or substantially in their entirety to another entity, then each holder of a Class A warrant or Class B warrant which is thereafter exercised shall receive, in lieu of our common stock, the kind and number or amount of other securities or property which such holder would have been entitled to receive as a result of such event if such holder had exercised such warrants prior to the event.

Subject to certain exceptions, if we sell or issue shares of our common stock, rights, options or warrants to purchase shares of our common stock, other rights for shares of our common stock, or securities convertible or exchangeable into shares of our common stock, in any case at a price per share less than the than applicable Class A warrant exercise price, then in each such case the Class A warrant exercise price will be reduced to the price determined by multiplying the exercise price in effect immediately prior to such issuance by a fraction, (A) the numerator of which will be the number of shares of our common stock outstanding immediately prior to such issuance plus the number of shares which the aggregate consideration received for such issuance would purchase at the exercise price in effect immediately prior to such issuance, and (B) the denominator of which will be the number of shares of our common stock outstanding immediately after such issuance.

We will also covenant in each Warrant Agreement that, during the period in which the Class A warrants and Class B warrants are exercisable, we will give public notice of our intention to fix a record date for the issuance of rights, options or warrants (other than the Class A warrants and Class B warrants) to all or substantially all of the holders of our outstanding common stock at least 10 days prior to the record date of such event.

To the extent that a holder of a Class A warrant or Class B warrant would otherwise be entitled to purchase a fraction of a share of our common stock, in lieu of issuing a fractional share, we shall pay to the holder thereof within five business days of exercise an amount equal to the difference between the "current market price" of our common stock on the exercise date multiplied by the fractional interest, provided that we shall make only one payment for each beneficial holder exercising such warrants and shall not be required to make any payment that is less than $10.00. Holders of Class A warrants and Class B warrants do not have any voting or pre-emptive rights or any other rights as our shareholders.

In the event that registration statement to which this prospectus supplement relates is not effective at the time of exercise of the Class A warrants, then the holders of such Class A warrants resident in the United States or holding for the account or benefit of a person resident in the United States or a U.S. person (as such terms are defined under Regulation S under the U.S. Securities Act) shall be able to exercise such Class A warrants on a cashless basis. Holders of the Class A warrants resident outside the United States and not holding for the account or benefit of a person resident in the United States or a U.S. person may exercise the Class A warrants pursuant to Regulation S under the U.S. Securities Act. All holders of Class A warrants that exercise Class A warrants when a registration statement under the U.S. Securities Act is not effective will agree that the shares of common stock received on such exercise will only be resold pursuant to a registration statement under the U.S. Securities Act registering such resale or pursuant to an exemption from such registration requirements, including but not limited to, the exclusion provided by Rule 904 of Regulation S under the U.S. Securities Act.

Reference is made to each of the Warrant Agreements for the full text of the attributes of the Class A warrants and Class B warrants.

UNDERWRITING

We have entered into an underwriting agreement with Oppenheimer & Co. Inc. as underwriter for this offering.

The underwriting agreement provides for the purchase by the underwriter of (i) 46,154,000 shares of our common stock, (ii) Class A warrants to purchase 34,615,500 shares of our common stock and (iii) Class B warrants to purchase 23,077,000 shares of our common stock. The underwriter has agreed to purchase all of the securities offered by this prospectus supplement (other than those covered by the over-allotment option described below), if any are purchased.

The securities should be ready for delivery on or about January 21, 2010 against payment in immediately available funds. The underwriter is offering the securities subject to various conditions and may reject all or part of any order. The underwriter has advised us that it proposes to offer the securities directly to the public at the public offering price that appears on the cover page of this prospectus supplement. After the securities are released for sale to the public, the underwriter may change the offering price and other selling terms at various times.

We have granted the underwriter an option to purchase up to an additional (i) 6,923,100 shares of our common stock at a price of $0.2275 per share, (ii) Class A warrants to purchase up to 5,192,325 shares of our common stock at a price of $0.03 per one Class A warrant and (iii) Class B warrants to purchase up to 3,461,550 shares of our common stock at a price of $0.02 per one Class B warrant, in each case less the underwriting discounts and commissions, all on the same terms and conditions as this offering, exercisable in whole or in part at any time from the date of this prospectus supplement until and including 30 days thereafter, to cover over-allotments, if any, and for market stabilization purposes. If the over-allotment option is exercised in full, the total public offering price, underwriting discounts and commissions and net proceeds, before expenses, to us will be $13,800,046, $966,003 and $12,834,043, respectively.

The following table provides information regarding the amount of the discount to be paid to the underwriter by us:

	Without Exercise of Over-Allotment Option	With Full Exercise of Over-Allotment Option
Per Unit	$ 0.0182	$ 0.0182
Total	$840,003	$966,003

We have also agreed to reimburse the underwriter for certain fees and expenses in an aggregate amount not to exceed $75,000.

In addition, we have agreed to pay Chardan Capital Markets, LLC a financial advisory fee equal to $40,000, which amount will reduce the total underwriting discount to be paid to the underwriter.

In compliance with the guidelines of The Financial Industry Regulatory Authority (“FINRA”), the maximum commission or discount to be received by any FINRA member, or independent broker-dealer, including their reimbursable expenses, may not be greater than 8.0% of the initial gross proceeds from the sale of any securities being offered hereby.

We and our executive officers and directors have agreed to a 90-day “lock up” with respect to shares of capital stock that they beneficially own, including securities that are convertible into shares of common stock and securities that are exchangeable or exercisable for shares of common stock. This means that, subject to certain exceptions, for a period of 90 days following the date of this prospectus supplement, we and such persons may not offer, sell, pledge or otherwise dispose of these securities without the prior written consent of Oppenheimer & Co. Inc. In addition, we have agreed not to issue or sell any securities under our existing financing program with Fusion Capital Fund II, LLC or otherwise enter into any similar equity program with any third party for a period of 180 days after the date of this prospectus supplement without the prior written consent of Oppenheimer & Co. Inc.

We have agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act of 1933.

Until the distribution of the units is completed, the rules of the United States Securities and Exchange Commission may limit the underwriter from bidding for and purchasing our securities. However, the underwriter may engage in transactions that stabilize the price of our securities, such as bids or purchases to peg, fix or maintain that price.

If the underwriter creates a short position in our securities in connection with the offering, i.e., if it sells more units than are listed on the cover of this prospectus supplement, the underwriter may reduce that short position by purchasing securities in the open market, subject to certain price limitations. The underwriter may also elect to reduce any short position by exercising all or part of the over-allotment option described above. Purchases of securities to stabilize the price or to reduce a short position may cause the price of our securities to be higher than it might be in the absence of such purchases.

Neither we nor the underwriter makes any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our securities. In addition, neither we nor the underwriter makes any representation that the underwriter will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

The underwriter may in the future provide us and our affiliates with investment banking and financial advisory services for which it may in the future receive customary fees.

Electronic Delivery of Prospectus Supplements: A prospectus supplement in electronic format may be delivered to potential investors by the underwriter participating in this offering. The prospectus supplement in electronic format will be identical to the paper version of such prospectus supplement. Other than the prospectus supplement in electronic format, the information on the underwriter's website and any information contained in any other website maintained by the underwriter is not part of the prospectus supplement or the registration statement of which this prospectus supplement forms a part.

LEGAL MATTERS

The validity of the securities offered hereby will be passed upon for Aastrom by Dykema Gossett PLLC, Ann Arbor, Michigan acting as special counsel to Aastrom. Seyfarth Shaw LLP, Chicago, Illinois, has acted as counsel to Aastrom in connection with this offering. Certain legal matters will be passed upon for the underwriter by Goodwin Procter LLP, New York, New York.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this prospectus supplement and the accompanying base prospectus by reference to the Annual Report on Form 10-K for the year ended June 30, 2009, have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's public reference rooms located at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. Our filings with the SEC are also available to the public on the SEC's Internet web site at http://www.sec.gov. We also provide information on our website: http://www.aastrom.com. None of the information on our website is part of this prospectus supplement or the accompanying base prospectus.

The SEC allows us to "incorporate by reference" the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying base prospectus, and information that we file with the SEC later will automatically update and supersede the information in this prospectus supplement and the accompanying base prospectus or incorporated by reference. The following documents filed by us and any future filings made by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, until we sell all of the securities offered hereby, are incorporated by reference in this prospectus supplement :

1. Our Annual Report on Form 10-K for the fiscal year ended June 30, 2009;
2. Our Quarterly Report on Form 10-Q for the quarter ended September 30, 2009;
3. Our proxy statement for our annual shareholders' meeting held on December 14, 2009;
4. Our Current Reports on Form 8-K filed with the SEC on September 8, 2009, October 7, 2009, October 20, 2009, October 27, 2009 and December 17, 2009;
5. The description of our common stock set forth in our Registration Statement on Form 8-A filed with the SEC on April 11, 1997, as amended (Commission File No.: 000-22025); and
6. All of the filings pursuant to the Securities Exchange Act that we may make after the date of this prospectus supplement and prior to the termination of this offering.

YOU MAY REQUEST A COPY OF THESE FILINGS, AT NO COST, BY WRITING OR TELEPHONING US AT AASTROM BIOSCIENCES, INC., 24 FRANK LLOYD WRIGHT DRIVE, P.O. BOX 376, ANN ARBOR, MICHIGAN 48106, TELEPHONE NUMBER: (734) 930-5555, ATTENTION: INVESTOR RELATIONS DEPARTMENT.

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The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED FEBRUARY 19, 2009.

PROSPECTUS

$50,000,000

AASTROM BIOSCIENCES, INC.

Common Stock
Preferred Stock
Debt Securities
Warrants

We may from time to time issue, in one or more series or classes, up to $50,000,000 in aggregate principal amount of our common stock, preferred stock, debt securities and/or warrants. We may offer these securities separately or together. We will specify in the accompanying prospectus supplement the terms of the securities being offered. We may sell these securities to or through underwriters and also to other purchasers or through agents. We will set forth the names of any underwriters or agents, and any fees, conversions, or discount arrangements, in the accompanying prospectus supplement. We may not sell any securities under this prospectus without delivery of the applicable prospectus supplement.

You should read this document and any prospectus supplement or amendment carefully before you invest.

Our common stock is traded on the Nasdaq Capital Market under the symbol “ASTM.” On February 11, 2009, the last reported sale price for our common stock was $ 0.52 per share.

Investing in the common stock involves certain risks. See “Risk Factors” beginning on page 3 for a discussion of these risks.

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

The date of this Prospectus is February 19, 2009.

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You may rely only on the information provided or incorporated by reference in this Prospectus. We have not authorized anyone to provide information different from that contained in this Prospectus. Neither the delivery of this Prospectus nor the sale of the securities means that the information contained in this Prospectus is correct after the date of this Prospectus. This Prospectus is not an offer to sell or solicitation to buy the securities in any circumstances under which the offer or solicitation is unlawful.

PROSPECTUS SUMMARY

The following summary highlights information contained elsewhere in this Prospectus. It may not contain all of the information that is important to you. You should read the entire Prospectus carefully, especially the discussion regarding the risks of investing in our common stock under the heading "Risk Factors," before investing in our common stock. In this Prospectus, "Aastrom," "we," "us," and "our" refer to Aastrom Biosciences, Inc.

Business

We are a regenerative medicine company *(a medical area that focuses on developing therapies that regenerate damaged or diseased tissues or organs)* that incorporated in 1989 and focuses on the clinical development of autologous cell products *(cells collected from a patient and returned to that same patient)* for the repair or regeneration of multiple human tissues, based on our proprietary Tissue Repair Cell (TRC) technology. Our preclinical and clinical product development programs utilize patient-derived bone marrow stem and early progenitor cell populations, and are being investigated for their ability to aid in the regeneration of tissues such as cardiac, vascular, bone and neural. TRC-based products have been used in over 300 patients, and are currently in the following stages of development:

- Cardiac regeneration – Cardiac Repair Cells (CRCs):
  - Dilated cardiomyopathy (DCM) (severe chronic disease of the heart):
    - U.S.: IMPACT-DCM Phase II clinical trial began treating patients in November 2008; to date, 9 patients enrolled at three clinical sites (The Methodist Hospital, Houston, TX, Baylor University Medical Center, Dallas, TX and The University of Utah School of Medicine, Salt Lake City, UT); initiation of two other clinical sites is in progress; Orphan Drug Designation from the FDA for use in treatment of DCM; the IMPACT-DCM trial is currently on clinical hold due to a serious adverse event associated with anesthesia management during treatment of one patient at one of the active clinical sites; an internal review at the clinical site and a second review by the trial's independent Data Safety Monitoring Board (DSMB) determined that this event was not related to the surgical procedure of our CRCs
    - Germany: Encouraging data reported April 2008 from compassionate use treatment in two patients
- Vascular regeneration – Vascular Repair Cells (VRCs):
  - Critical limb ischemia (CLI):
    - U.S.: RESTORE-CLI Phase IIb clinical trial has enrolled 51 patients; interim analysis of 12-month data for the first 30 patients expected to occur during the 4th quarter of calendar year 2009; patient enrollment continues
    - Germany: Phase I/II investigator-sponsored clinical trial completed enrollment and patient follow-up ongoing; positive interim data reported October 2007; report of final data expected during the first half of calendar year 2009
- Bone regeneration – Bone Repair Cells (BRCs):
  - Osteonecrosis of the femoral head:
    - U.S.: ON-CORE Phase III clinical trial active; not enrolling additional patients; Orphan Drug Designation from the FDA for use in treatment of osteonecrosis of the femoral head
    - Spain: 9 of 10 patients treated in clinical trial; 24-month follow-up for all patients
    - Germany: Positive data reported October 2007 from compassionate use treatment cases follow-up ongoing
  - Non-union fractures:
    - U.S.: Final clinical study report issued in December 2008; TRC product showed an excellent safety profile and the efficacy data indicated a high non-union healing rate, with bridging callus formation rates reported in over 90% of patients 12 months post-surgery compared to 50% historically
    - Spain: Final 24-month complete for 10-patient investigator-sponsored Phase II clinical trial; report of final data expected during the first half of calendar year 2009
- Neural regeneration – Neural Repair Cells (NRCs):
  - Spinal cord injury:
    - Plans for clinical program on hold

Our platform TRC technology is based on 1) autologous cell products which are a unique cell mixture containing large numbers of stem and early progenitor cells produced outside of the body from a small amount of bone marrow taken from the patient, and 2) the ability to produce these products in an automated process that meets Good Manufacturing Practice (GMP) requirements.

We have developed a manufacturing system to produce human cells for clinical use. This automated cell manufacturing system enables the “single-pass perfusion” cell culture process. Single-pass perfusion is our patented manufacturing technology for growing large numbers of human cells. The cell component of TRC-based products include adult stem and early progenitor cell populations, which are capable of forming tissues such as cardiac, vascular, bone, neural, and the hematopoietic and immune system.

All TRC-based products are produced using our cell manufacturing system in centralized manufacturing facilities. We have one manufacturing site in the U.S. located in Ann Arbor, MI and three contract facilities in the EU located in Stuttgart, Germany (Fraunhofer Institute for Interfacial Engineering and Biotechnology), Bad Oeynhausen, Germany (Institute of Laboratory and Transfusion Medicine at the Heart Center) and Barcelona, Spain (Tissue and Cell Therapy Center at the Blood and Tissue Bank).

Since our inception, we have been in the development stage and engaged in research and product development, conducted principally on our own behalf. Our initial business plan was to pursue our targeted markets by commercializing our cell manufacturing system and supplies. Since 2004 we have phased out our marketing efforts promoting the cell manufacturing system as a commercial product. Currently, we have minimal product sales consisting of manufacturing supplies to academic collaborators in the U.S. and cell-based products to EU-based physicians.

Our current focus is on utilizing our TRC technology to produce autologous cell-based products for use in regenerative medicine applications. At such time as we satisfy applicable regulatory approval requirements, we expect the sales of our TRC-based products to constitute nearly all of our product sales revenues.

We do not expect to generate positive cash flows from our consolidated operations for at least the next several years and then only if significant TRC-based cell product sales commence. Until that time, we expect that our revenue sources from our current activities will consist of only minor sales of our cell products and manufacturing supplies to our academic collaborators, grant revenue, research funding and potential licensing fees or other financial support from potential future corporate collaborators.

In May 2008, we reprioritized our clinical development programs to focus primarily on cardiovascular applications, including dilated cardiomyopathy, and critical limb ischemia. We have discontinued further patient enrollment into our Phase III ON-CORE (osteonecrosis) bone regeneration trial. We do not anticipate initiating new clinical bone activity, reactivating the Phase III ON-CORE trial or initiating formal clinical trials in the neural area without additional financial resources. While the decision to reprioritize was driven by economic factors, the clinical programs were prioritized based on anticipated time to market and the perceived relative clinical and market potential. We are also exploring the possibility of entering into complementary regenerative medicine business activities, whether through acquisition or otherwise. In addition to the reprioritizing our development and clinical programs, we also made reductions in our staff and reduced our overhead expenses.

We expect that we will need to raise significant additional funds or pursue strategic transactions or other strategic alternatives in order to complete our product development programs, complete clinical trials needed to market our products, and commercialize our products. To date, we have financed our operations primarily through public and private sales of our equity securities, and we expect to continue obtaining required capital in a similar manner. As a development stage company, we have never been profitable and do not anticipate having net income unless and until significant product sales commence. With respect to our current activities, this is not likely to occur until we obtain significant additional funding, complete the required clinical trials for regulatory approvals, and receive the necessary approvals to market our products. Through December 31, 2008, we have accumulated a net loss of approximately $187 million. We cannot provide any assurance that we will be able to achieve profitability on a sustained basis, if at all, obtain the required funding, obtain the required regulatory approvals, or complete additional corporate partnering or acquisition transactions.

Corporate Information

Aastrom is incorporated under the laws of the State of Michigan. Our principal executive offices are located at 24 Frank Lloyd Wright Drive, P.O. Box 376, Ann Arbor, Michigan 48106. Our telephone number is (734) 930-5555. The address of our website is www.aastrom.com. Information on our website is not part of this Prospectus.

Our Common Stock

Our common stock trades on the Nasdaq Capital Market under the symbol “ASTM.”

The Prospectus

This prospectus is part of a registration statement that we filed with the SEC utilizing a “shelf” registration process. Under this shelf process, we may sell the securities described in this prospectus in one or more offerings up to a total dollar amount of $50.0 million. We have provided in this prospectus a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. We may also add, update or change in the prospectus supplement any of the information contained in this prospectus. This prospectus, together with applicable prospectus supplements, includes all material information relating to this offering. You should read both this prospectus and any prospectus supplement together with the additional information described under the heading “Where You Can Find More Information.”

RISK FACTORS

You should carefully consider the risks described below before purchasing our common stock. Our most significant risks and uncertainties are described below; however, they are not the only risks we face. If any of the following risks actually occur, our business, financial condition, or results or operations could be materially adversely affected, the business of our common stock could decline, and you may lose all or part of your investment therein. You should acquire shares of our common stock only if you can afford to lose your entire investment.

The risk factors described below are not all inclusive. All risk factors should be considered carefully when evaluating our business, results of operations, and financial position. We undertake no obligation to update forward-looking statements or risk factors. There may be other risks and uncertainties not highlighted herein that may become material factors affecting our financial condition and business operations.

Our past losses and expected future losses cast doubt on our ability to operate profitably.

We were incorporated in 1989 and have experienced substantial operating losses since inception. As of December 31, 2008, we have incurred a cumulative net loss totaling approximately $187 million, and we have continued to incur losses since that date. These losses have resulted principally from costs incurred in the research and development of our cell culture technologies and our cell manufacturing system, general and administrative expenses, and the prosecution of patent applications. We expect to continue to incur significant operating losses over the next several years and at least until, and probably after, product sales increase, primarily owing to our research and development programs, including preclinical studies and clinical trials, and the establishment of marketing and distribution capabilities necessary to support commercialization efforts for our products. We cannot predict with any certainty the amount of future losses. Our ability to achieve profitability will depend, among other things, on successfully completing the development of our product candidates, timely initiation and completion of clinical trials, obtaining regulatory approvals, establishing manufacturing, sales and marketing arrangements with third parties, maintaining supplies of key manufacturing components, acquisition and development of complementary activities and raising sufficient cash to fund our operating activities. In addition, we may not be able to achieve or sustain profitability.

The global economy and capital markets have been challenging for the small cap biotech sector for the past year or so. This situation makes the timing and potential for future equity financings uncertain. As of February 15, 2009, our cash and cash equivalents approximated $18.1 million. In part due to the fact that many of our expenditures are discretionary in nature and could, if necessary, be delayed, we expect that our existing cash and cash equivalents would be sufficient to financial activities until at least February 28, 2010.

Our stock may be delisted from Nasdaq, which could affect its market price and liquidity.

We are required to meet certain qualitative and financial tests (including a minimum bid price for our common stock of $1.00 per share) to maintain the listing of our common stock on the Nasdaq Capital Market. On December 20, 2007, we received a deficiency letter from the Nasdaq Stock Market indicating that for 30 consecutive trading days our common stock had a closing bid price below the $1.00 per share minimum closing bid as required for continued listing set forth in Nasdaq Marketplace Rule 4310(c)(4). In accordance with Nasdaq Marketplace Rule 4310(c)(8)(D), we were provided a compliance period of 180 calendar days, or until June 17, 2008, to regain compliance with this requirement. On June 17, 2008, we had not yet regained compliance with the requirement and were granted an additional 180-day compliance period, or until December 15, 2008 to regain compliance. On October 22, 2008, we received notice from Nasdaq that the period during which we were granted to gain compliance with the bid price requirement had been suspended and that, upon completion of the suspension period, we would have until March 20, 2009 to regain compliance with the requirement. On January 7, 2009, we received notification from the Listings Qualifications Department of NASDAQ that, given the continued extraordinary market conditions, NASDAQ had extended the suspension of enforcing the rules requiring a minimum $1.00 per share closing bid price and a minimum market value of publicly held shares through April 19, 2009. As a result of the extension of NASDAQ’s suspension and the 60 days left on our previously granted compliance period, we have 60 days after April 19, 2009 to regain compliance with the $1.00 minimum closing bid price rule in order to remain listed on the Nasdaq Capital Market. We can regain compliance with the minimum closing bid price rule if the bid price of our common stock closes at $1.00 per share or higher for a minimum of ten consecutive business days during the 180-day compliance period, although Nasdaq may, in its discretion, require us to maintain a minimum closing bid price of at least $1.00 per share for a period in excess of ten consecutive business days (but generally no more than 20 consecutive business days) before determining that we have demonstrated the ability to maintain long-term compliance. If we do not regain compliance during the additional compliance period, NASDAQ will provide written notice that our securities will be delisted from the Nasdaq Capital Market. At such time, we would be able to appeal the delisting determination to a Nasdaq Listing Qualifications Panel.

We cannot provide any assurance that our stock price will again recover within the permitted grace period. If our common stock were delisted, it could be more difficult to buy or sell our common stock and to obtain accurate quotations, and the price of our stock could suffer a material decline. Delisting may also impair our ability to raise capital.

We may not be able to raise the required capital to conduct our operations and develop and commercialize our products.

In addition to our financing with Fusion Capital Fund II, LLC ("Fusion Capital"), we will require substantial additional capital resources in order to conduct our operations and develop and commercialize our products and cell manufacturing facilities. In order to grow and expand our business, to introduce our new product candidates into the marketplace and to acquire or develop complementary business activities, we will need to raise a significant amount of additional funds. We will also need significant additional funds or a collaborative partner, or both, to finance the research and development activities of our cell product candidates for additional indications. Accordingly, we are continuing to pursue additional sources of financing.

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

- continued scientific progress in our research, clinical and development programs;
- costs and timing of conducting clinical trials and seeking regulatory approvals;
- competing technological and market developments;
- our ability to establish additional collaborative relationships;
- the effect of commercialization activities and facility expansions, if and as required; and
- complementary business acquisition or development opportunities.

Because of our long-term funding requirements, we intend to try to access the public or private equity markets if conditions are favorable to complete a financing, even if we do not have an immediate need for additional capital at that time, or whenever we require additional operating capital. This additional funding may not be available to us on reasonable terms, or at all. If adequate funds are not available in the future, we may be required to further delay or terminate research and development programs, curtail capital expenditures, and reduce business development and other operating activities.

The transaction with Fusion Capital is expected to provide us with some of the required capital to conduct our operations; however, we expect that we will need additional capital. In addition, under certain conditions, Fusion Capital will not be required to purchase our shares, including if the market price of our common stock is less than $0.10, if we are not listed on a national exchange or the OTC Bulletin Board or if there is a material adverse change to our business, properties, operations, financial condition or results of operations. In addition, our ability to raise the entire $15 million will be dependent on the stock price of our common stock as we will not be able to sell greater than 19.99% of our outstanding shares of common stock as of the date of the Purchase Agreement without obtaining shareholder approval.

We only have the right to receive $60,000 every two business days under the Purchase Agreement unless our stock price equals or exceeds $0.25, in which case we can sell greater amounts to Fusion Capital as the price of our common stock increases. Since we will be limited to 22,692,664 shares sold to Fusion Capital, the selling price of our common stock to Fusion Capital will have to average at least $0.66 per share for us to receive the maximum proceeds of $15.0 million. Assuming a purchase price of $0.40 per share (the closing sale price of the common stock on October 23, 2008) and the purchase by Fusion Capital of the full 22,692,664 shares under the Purchase Agreement, proceeds to us would only be $9,077,066 unless we choose to register more than 22,692,664 shares, which we have the right, but not the obligation, to do. Subject to approval by our board of directors, we have the right but not the obligation to sell more than 22,692,664 shares to Fusion Capital. In the event we elect to sell more than 22,692,664 shares offered hereby, we will be required to file a new registration statement covering resale of the incremental shares and have it declared effective by the U.S. Securities & Exchange Commission. In addition, in the event that we decide to issue more than 26,565,299, i.e. greater than 19.99% of our outstanding shares of common stock as of the date of the Purchase Agreement, we would first be required to seek shareholder approval in order to be in compliance with the Nasdaq Capital Market rules.

Assuming the Purchase Price for future shares issued to Fusion Capital remain at the same average price as the transactions to date ($0.40), we would be able to raise an additional $4.4 million of cash proceeds per our agreement with Fusion Capital (through the issuance of the remaining 12,334,360 shares of our common stock, which includes 1,327,026 shares related to the commitment fee).

The extent we rely on Fusion 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. Specifically, Fusion Capital shall not have the right nor the obligation to purchase any shares of our common stock on any business days that the market price of our common stock is less than $0.10. Even if we are able to access the full $15.0 million under the Purchase Agreement with Fusion Capital, we will need additional capital to fully implement our business, operating and development plans. Should the financing we require to sustain our working capital needs be unavailable or prohibitively expensive when we require it, the consequences could be a material adverse effect on our business, operating results, financial condition and prospects.

We have experienced significant management turnover, and if we cannot attract and retain key personnel, then our business will suffer.

Our success depends in large part upon our ability to attract and retain highly qualified scientific and management personnel. We face competition for such personnel from other companies, research and academic institutions and other entities. Further, in an effort to conserve financial resources, we have implemented reductions in our work force on three previous occasions. As a result of these and other factors, we may not be successful in hiring or retaining key personnel. Our inability to replace any key employee could harm our operations.

Failure to obtain and maintain required regulatory approvals would severely limit our ability to sell our products.

We must obtain the approval of the FDA before commercial sales of our cell product candidates may commence in the U.S., which we believe will ultimately be the largest market for our products. We will also be required to obtain additional approvals from various foreign regulatory authorities to initiate sales activities of cell products in those jurisdictions, including the EU under regulations of the EMEA. If we cannot demonstrate the safety and efficacy of our cell product candidates, or of the cells produced in our manufacturing system, we may not be able to obtain required regulatory approvals. If we cannot demonstrate the safety and efficacy of our product candidates, the FDA or other regulatory authorities could delay or withhold regulatory approval of our product candidates.

Finally, even if we obtain regulatory approval of a product, that approval may be subject to limitations on the indicated uses for which it may be marketed. Even after granting regulatory approval, the FDA and regulatory agencies in other countries continue to review and inspect marketed products, manufacturers and manufacturing facilities, which may create additional regulatory burdens. Later discovery of previously unknown problems with a product, manufacturer or facility, may result in restrictions on the product or manufacturer, including a withdrawal of the product from the market. Further, regulatory agencies may establish additional regulations that could prevent or delay regulatory approval of our products.

Any changes in the governmental regulatory classifications of our products could prevent, limit or delay our ability to market or develop our products.

The FDA establishes regulatory requirements based on the classification of a product. Because our product development programs are designed to satisfy the standards applicable to biological licensure for our cellular products, any change in the regulatory classification or designation would affect our ability to obtain FDA approval of our products. Each of these cell mixtures (such as our TRC-based products) is, under current regulations, regulated as a biologic product, which requires a Biological License Application (BLA).

EU Directives and regulations (laws) have become effective, and have influenced the requirements for manufacturing cell products and the conduct of clinical trials. Recent changes to the EU Medicinal Products Prime Directive (including added annexes and new regulations) shifted patient-derived cells to the medicinal products category, which will require Marketing Authorizations in order to market and sell these products. These new requirements will require clinical trials with data submission and review by one or more European regulatory bodies. There is uncertainty about which clinical trial activities and data are required, and because of the recent nature of these new directives, laws and regulations, there is no established precedent to understand the timeline or other requirements for Marketing Authorization.

Our inability to complete our product development activities successfully would severely limit our ability to operate or finance operations.

In order to commercialize our cell product candidates in the U.S. and the EU we must complete substantial clinical trials, and obtain sufficient safety and efficacy results to support required registration approval and market acceptance of our cell product candidates. We may not be able to successfully complete the development of our product candidates, or successfully market our technologies or product candidates. We, and any of our potential collaborators, may encounter problems and delays relating to research and development, regulatory approval and intellectual property rights of our technologies and product candidates. Our

research and development programs may not be successful, and our cell culture technologies and product candidates may not facilitate the production of cells outside the human body with the expected result. Our technologies and cell product candidates may not prove to be safe and efficacious in clinical trials, and we may not obtain the requisite regulatory approvals for our technologies or product candidates and the cells produced in such products. If any of these events occur, we may not have adequate resources to continue operations for the period required to resolve the issue delaying commercialization and we may not be able to raise capital to finance our continued operation during the period required for resolution of that issue.

We must successfully complete our clinical trials to be able to market certain of our products.

To be able to market therapeutic cell products in the U.S. and across the EU, we must demonstrate, through extensive preclinical studies and clinical trials, the safety and efficacy of our processes and product candidates. If our clinical trials are not successful, our products may not be marketable.

Our ability to complete our clinical trials in a timely manner depends on many factors, including the rate of patient enrollment. Patient enrollment can vary with the size of the patient population, the proximity of suitable patients to clinical sites, perceptions of the utility of cell therapy for the treatment of certain diseases and the eligibility criteria for the study. We have experienced delays in patient accrual in our previous and current clinical trials. If we experience future delays in patient accrual, we could experience increased costs and delays associated with clinical trials, which would impair our product development programs and our ability to market our products. Furthermore, the FDA monitors the progress of clinical trials and it may suspend or terminate clinical trials at any time due to patient safety or other considerations.

On February 2, 2009, we reported that one patient enrolled in the IMPACT-DCM clinical trial experienced a serious adverse event associated with anesthesia management during treatment at one of the active clinical sites. According to the results of an internal review conducted at the clinical site, and a second review by the trial's independent Data Safety Monitoring Board (DSMB), this event has been attributed to anesthesia administration and management in this single patient. Furthermore, these two reviews separately determined that this event was not related to the surgical approach or the use of our CRCs in this procedure. This patient has received appropriate treatment, has fully recovered from this isolated event and continues to be monitored in accordance with the study protocol. In compliance with regulatory requirements and standard operating procedures, this event was reported directly to the FDA and we immediately took the initiative to suspend patient enrollment at the clinical site where the event took place, pending an internal review and the implementation of a corrective action plan. In accordance with our commitment to the highest safety standards for participants in this trial, we have complied with a subsequent verbal communication from the FDA that the IMPACT-DCM trial be placed on clinical hold at all trial sites pending completion of a more comprehensive review of this event. We are working closely with the FDA to provide any information required in order to expedite this review and to resolve this matter so that patient enrollment into the IMPACT-DCM trial can resume as soon as possible. Notwithstanding the hold, the FDA authorized us to proceed with the CRC treatment for one patient previously enrolled in the IMPACT-DCM clinical trial. This patient was treated at the end of January 2009. In addition, follow-up monitoring of patients who have previously been treated in the IMPACT-DCM trial is continuing in accordance with the study protocol.

Our research programs are currently directed at improving TRC-based product functionality for certain clinical indications, improving product shelf life, and decreasing the cost of manufacturing our TRC-based products. These production process changes may alter the functionality of our cells, and require various additional levels of experimental and clinical testing and evaluation. Any such testing could lengthen the time before these products would be commercially available.

Even if successful clinical results are reported for a product from a completed clinical trial, this does not mean that the results will be sustained over time, or will be sufficient for a marketable or regulatory approvable product.

Failure of third parties to manufacture component parts or provide limited source supplies, or the imposition of additional regulation, would impair our new product development and our sales activities.

We rely solely on third parties such as Astro, Ethox, Moll and Lonza to manufacture or supply certain of our devices/manufacturing equipment, as well as component parts and other materials used in the cell product manufacturing process. We would not be able to obtain alternate sources of supply for many of these items on a short-term basis. If any of our key manufacturers or suppliers fails to perform their respective obligations or if our supply of components or other materials is limited or interrupted, we would not be able to conduct clinical trials or market our product candidates on a timely and cost-competitive basis, if at all.

Finally, we may not be able to continue our present arrangements with our suppliers, supplement existing relationships, establish new relationships or be able to identify and obtain the ancillary materials that are necessary to develop our product candidates in the future. Our dependence upon third parties for the supply and manufacture of these items could adversely affect our ability to develop and deliver commercially feasible products on a timely and competitive basis.

Manufacturing our cell products in centralized facilities may increase the risk that we will not have adequate quantities of our cell products for clinical programs.

We rely on third party manufacturers, Fraunhofer Institute for Interfacial Engineering and Biotechnology in Stuttgart, Germany, the Institute of Laboratory and Transfusion Medicine at the Heart Center in Bad Oeynhausen, Germany, and the Tissue and Cell Therapy Center at the Blood and Tissue Bank in Barcelona, Spain, to supply our TRC-based cell products for certain EU clinical activities. Reliance on third party manufacturers entails risks including regulatory compliance and quality assurance and the possible breach of the manufacturing agreement by the third party. We are subject to similar regulatory and compliance risks at our site in Ann Arbor, Michigan. All sites could be subject to ongoing, periodic, unannounced inspection by regulatory agencies to ensure strict compliance with GMP regulations and other governmental regulations and corresponding foreign standards. Our present and future manufacturers might not be able to comply with these regulatory requirements. We do not have redundant cell manufacturing sites in the U.S. In the event our cell manufacturing facilities are damaged or destroyed or are subject to regulatory restrictions, our clinical trial programs and other business prospects would be adversely affected.

Even if we obtain regulatory approvals to sell our products, lack of commercial acceptance could impair our business.

We will be seeking to obtain regulatory approvals to market our TRC-based cell products for tissue repair and regeneration treatments. Even if we obtain all required regulatory approvals, we cannot be certain that our products and processes will be accepted in the marketplace at a level that would allow us to operate profitably. Our products may be unable to achieve commercial acceptance for a number of reasons, such as the availability of alternatives that are less expensive, more effective, or easier to use, the perception of a low cost-benefit ratio for the product amongst physicians and hospitals, or an inadequate level of product support from ourselves or a commercial partner. Our technologies or product candidates may not be employed in all potential applications being investigated, and any reduction in applications would limit the market acceptance of our technologies and product candidates, and our potential revenues.

The market for our products will be heavily dependent on third party reimbursement policies.

Our ability to successfully commercialize our product candidates will depend on the extent to which government healthcare programs, such as Medicare and Medicaid, as well as private health insurers, health maintenance organizations and other third party payors will pay for our products and related treatments. Reimbursement by third party payors depends on a number of factors, including the payor's determination that use of the product is safe and effective, not experimental or investigational, medically necessary, appropriate for the specific patient and cost-effective. Reimbursement in the U.S. or foreign countries may not be available or maintained for any of our product candidates. If we do not obtain approvals for adequate third party reimbursements, we may not be able to establish or maintain price levels sufficient to realize an appropriate return on our investment in product development. Any limits on reimbursement from third party payors may reduce the demand for, or negatively affect the price of, our products. For example, in the past, published studies suggested that stem cell transplantation for breast cancer, which constituted a significant portion of the overall stem cell therapy market at the time, may have limited clinical benefit. The lack of reimbursement for these procedures by insurance payors has negatively affected the marketability of our products in this indication in the past.

Use of animal-derived materials could harm our product development and commercialization efforts.

Some of the manufacturing materials and/or components we use in, and are critical to, implementation of our TRC technology involve the use of animal-derived products, including fetal bovine serum. Suppliers or regulatory changes may limit or restrict the availability of such materials for clinical and commercial use. We currently purchase all of our fetal bovine sera from protected herds in Australia and New Zealand. These sources are considered to be the safest and raise the least amount of concern from the global regulatory agencies. If, for example, the so-called "mad cow disease" occurs in New Zealand or in Australia, it may lead to a restricted supply of the serum currently required for the TRC-based product manufacturing processes. Any restrictions on these materials would impose a potential competitive disadvantage for our products or prevent our ability to manufacture TRC-based cell products. Regulatory authorities in the EU are reviewing the safety issues related to the use of animal-derived materials, which we currently use in our production process. The FDA has issued draft regulations for controls over bovine materials. These proposed regulations do not appear to affect our ability to purchase the manufacturing materials we currently use. However, the FDA may issue final regulations that could affect our operations. We do not know what actions, if any, the authorities may take as to animal derived materials specific to medicinal products distributed in the EU. Our inability to develop or obtain alternative compounds would harm our product development and commercialization efforts. There are certain limitations in the supply of certain animal-derived materials, which may lead to delays in our ability to complete clinical trials or eventually to meet the anticipated market demand for our cell products.

Given our limited internal manufacturing, sales, marketing and distribution capabilities, we need to develop increased internal capability or collaborative relationships to manufacture, sell, market and distribute our products.

We have only limited internal manufacturing, sales, marketing and distribution capabilities. As market needs develop, we intend to establish and operate commercial-scale manufacturing facilities, which will need to comply with all applicable regulatory requirements. We will also need to develop new configurations of our cell manufacturing system for these facilities to enable processes and cost efficiencies associated with large-scale manufacturing. Establishing these facilities will require significant capital and expertise. We may need to make such expenditures when there are significant uncertainties as to the market opportunity. Any delay in establishing, or difficulties in operating, these facilities will limit our ability to meet the anticipated market demand for our cell products. We intend to get assistance to market some of our future cell products through collaborative relationships with companies with established sales, marketing and distribution capabilities. Our inability to develop and maintain those relationships would limit our ability to market, sell and distribute our products. Our inability to enter into successful, long-term relationships could require us to develop alternate arrangements at a time when we need sales, marketing or distribution capabilities to meet existing demand. We may market one or more of our TRC-based products through our own sales force. Our inability to develop and retain a qualified sales force could limit our ability to market, sell and distribute our cell products.

The issuance of additional common stock for funding has the potential for substantial dilution.

As noted above, we will need significant additional equity funding, in addition to the transaction with Fusion, to provide us with the capital to reach our objectives. We may enter into financing transactions at prices which are at a substantial discount to market. Such an equity issuance would cause a substantially larger number of shares to be outstanding and would dilute the ownership interest of existing stockholders.

Our stock price has been volatile and future sales of substantial numbers of our shares could have an adverse affect on the market price of our shares.

The market price of shares of our common stock has been volatile, ranging in closing price between $0.16 and $0.76 during the twelve month period ended December 31, 2008. The price of our common stock may continue to fluctuate in response to a number of events and factors, such as:

- clinical trial results;
- the amount of our cash resources and our ability to obtain additional funding;
- announcements of research activities, business developments, technological innovations or new products by us or our competitors;
- entering into or terminating strategic relationships;
- changes in government regulation;
- disputes concerning patents or proprietary rights;
- changes in our revenues or expense levels;
- public concern regarding the safety, efficacy or other aspects of the products or methodologies we are developing;
- news or reports from other stem cell, cell therapy or regenerative medicine companies;
- reports by securities analysts;
- status of the investment markets;
- concerns related to management transitions; and
- delisting from the Nasdaq Capital Market.

Any of these events may cause the price of our shares to fall, which may adversely affect our business and financing opportunities. In addition, the stock market in general and the market prices for biotechnology companies in particular have experienced significant volatility recently that often has been unrelated to the operating performance or financial conditions of such companies. These broad market and industry fluctuations may adversely affect the trading price of our stock, regardless of our operating performance or prospects.

If we do not keep pace with our competitors and with technological and market changes, our products will become obsolete and our business may suffer.

The markets for our products are very competitive, subject to rapid technological changes, and vary for different candidates and processes that directly compete with our products. Our competitors may have developed, or could in the future develop, new technologies that compete with our products or even render our products obsolete. As an example, in the past, published studies have suggested that hematopoietic stem cell therapy use for bone marrow transplantation, following marrow ablation due to chemotherapy, may have limited clinical benefit in the treatment of breast cancer, which was a significant portion of the overall hematopoietic stem cell transplant market. This resulted in the practical elimination of this market for our cell-based product for this application.

Our cell manufacturing system is designed to improve and automate the processes for producing cells used in therapeutic procedures. Even if we are able to demonstrate improved or equivalent results, the cost or process of treatment and other factors may cause researchers and practitioners to not use our products and we could suffer a competitive disadvantage. Finally, to the extent that others develop new technologies that address the targeted application for our products, our business will suffer.

If our patents and proprietary rights do not provide substantial protection, then our business and competitive position will suffer.

Our success depends in large part on our ability to develop or license and protect proprietary products and technologies. However, patents may not be granted on any of our pending or future patent applications. Also, the scope of any of our issued patents may not be sufficiently broad to offer meaningful protection. In addition, our issued patents or patents licensed to us could be successfully challenged, invalidated or circumvented so that our patent rights would not create an effective competitive barrier. Certain patent equivalents to the U.S. patents have also been issued in other jurisdictions including Australia, Japan, the Republic of Korea, Canada and under the European Convention. Furthermore, we rely on exclusive, world-wide licenses relating to the production of human cells granted to us by the University of Michigan for certain of our patent rights. If we materially breach such agreements or otherwise fail to materially comply with such agreements, or if such agreements expire or are otherwise terminated by us, we may lose our rights under the patents held by the University of Michigan. At the latest, each of these licenses will terminate when the patent underlying the license expires. The first of these underlying patents will expire on March 21, 2012. We also rely on trade secrets and unpatentable know-how that we seek to protect, in part, by confidentiality agreements with our employees, consultants, suppliers and licensees. These agreements may be breached, and we might not have adequate remedies for any breach. If this were to occur, our business and competitive position would suffer.

Intellectual property litigation could harm our business.

Our success will also depend in part on our ability to develop commercially viable products without infringing the proprietary rights of others. Although we have not been subject to any filed infringement claims, other patents could exist or could be filed which would prohibit or limit our ability to market our products or maintain our competitive position. In the event of an intellectual property dispute, we may be forced to litigate. Intellectual property litigation would divert management's attention from developing our products and would force us to incur substantial costs regardless of whether we are successful. An adverse outcome could subject us to significant liabilities to third parties, and force us to curtail or cease the development and sale of our products and processes.

The government maintains certain rights in technology that we develop using government grant money and we may lose the revenues from such technology if we do not commercialize and utilize the technology pursuant to established government guidelines.

Certain of our and our licensors' research have been or are being funded in part by government grants. As a result of such funding, the U.S. Government has established guidelines and have certain rights in the technology developed with the grant. If we fail to meet these guidelines, we would lose our exclusive rights to these products, and we would lose potential revenue derived from the sale of these products.

Potential product liability claims could affect our earnings and financial condition.

We face an inherent business risk of exposure to product liability claims in the event that the manufacture and/or use of TRC-based products during clinical trials, or after commercialization, results in adverse events. As a result, we may incur significant product liability exposure, which could exceed existing insurance coverage. We may not be able to maintain adequate levels of insurance at reasonable cost and/or reasonable terms. Excessive insurance costs or uninsured claims would increase our operating loss and affect our financial condition.

Our corporate documents and Michigan law contain provisions that may make it more difficult for us to be acquired.

Our Board of Directors has the authority, without shareholder approval, to issue additional shares of preferred stock and to fix the rights, preferences, privileges and restrictions of these shares without any further vote or action by our shareholders. This authority may have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from attempting to acquire control of our Company. This effect could occur even if our shareholders consider the change in control to be in their best interest. In addition, we are subject to certain anti-takeover provisions of Michigan law that could delay or make more difficult a merger or tender offer involving our company.

We are required to evaluate our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act of 2002 and any adverse results from such evaluation could have a negative market reaction.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 (Section 404), we are required to furnish a report by our management on our internal control over financial reporting. That report must contain, among other matters, an assessment of the design and operating effectiveness of our internal controls over financial reporting as of the end of the fiscal year. This assessment must include disclosure of any material weaknesses in our internal control over financial reporting identified by management. That report must also contain a statement that our independent registered public accounting firm has issued an attestation report on the design and operating effectiveness of our system of internal accounting controls over financial reporting. If in the future we are unable to assert that our internal control over financial reporting is effective as of the end of the then current fiscal year (or, if our independent registered public accounting firm is unable to express an unqualified opinion on the design and operating effectiveness of our internal controls), we could lose investor confidence in the accuracy and completeness of our financial reports, which would have a negative effect on our stock price and our ability to raise capital.

RATIO OF EARNINGS TO FIXED CHARGES (1)

The following table sets forth ratios of earnings to fixed charges for the periods shown.

Six Months Ended	Twelve Months Ended				
December 31, 2008	June 30, 2008	June 30, 2007	June 30, 2006	June 30, 2005	June 30, 2004
N/A (2)	N/A (2)	N/A(2)	N/A(2)	N/A(2)	N/A(2)

(1) The ratio of earnings to fixed charges was computed by dividing earnings by fixed charges. For this purpose, earnings consist of net loss before fixed charges. Fixed charges consist of interest expense plus the interest factor in lease expenses. During the fiscal years covered by this table, we did not have any material fixed charges or preferred stock dividends. However, our total lease expenses, which comprised most of our total commitments, were $574,000 for the six months ended December 31, 2008 and were $1,107,000, $679,000, $626,000, $626,000 and $616,000 for the twelve months ended June 30, 2008, 2007, 2006, 2005, and 2004.

(2) Earnings have been inadequate to cover fixed charges and total commitments. The dollar amount of the coverage deficiency was approximately $8.0 million for the six months ended December 31, 2008 and was approximately $20.1 million, $17.6 million, $16.5 million, $11.8 million and $10.5 million for the twelve months ended June 30, 2008, 2007, 2006, 2005 and 2004, respectively.

INCORPORATION BY REFERENCE

This prospectus incorporates by reference important business and financial information that we file with the Securities and Exchange Commission and that we are not including in or delivering with this prospectus. As the SEC allows, incorporated documents are considered part of this prospectus, and we can disclose important information to you by referring you to those documents.

- our annual report on Form 10-K for the fiscal year ended June 30, 2008, filed with the SEC on August 29, 2008;
- portions of our definitive Proxy Statement for the Annual Meeting of Shareholders held on October 17, 2008 that have been incorporated by reference into the Form 10-K;
- our quarterly reports on Form 10-Q, filed with the SEC on November 7, 2008 and February 6, 2009; and
- our current reports on Form 8-K filed with the SEC on August 27, 2008, October 23, 2008 and October 29, 2008.

We also incorporate by reference all documents filed with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 after the date of this prospectus and prior to the completion or termination of this offering. Information in this prospectus supersedes related information in the documents listed above, and information in subsequently filed documents supersedes related information in both this prospectus and the incorporated documents.

You may request a copy of any or all of these filings, at no cost, by writing or telephoning us at: Aastrom Biosciences, Inc., 24 Frank Lloyd Wright Drive, P.O. Box 276, Ann Arbor, Michigan 48106, attention: Investor Relations. These filings may also be obtained through the Company’s website located at http://www.aastrom.com.

You should rely only on the information incorporated by reference or provided in this prospectus or any supplement. We have not authorized anyone else to provide you with different information. You should not assume that information in this prospectus or any supplement is accurate as of any date other than the date on the front of these documents.

In accordance with these rules, we have incorporated by reference the description of our business, our securities, our properties, any legal proceedings, market price of and dividend’s with respect to our common stock, our financial statements and our management’s discussion and analysis of our financial condition and results of operations. We have also incorporated by reference disclosure with respect to our officers and directors, their compensation structure, any related transactions with our officers and directors and our shareholders

The Company advises that there have been no material changes in the Company’s affairs that have occurred since the end of the latest fiscal year for which audited financial statements were included in the latest Form 10-K and that have not been described in a Form 10-Q or Form 8-K filed under the Exchange Act.

FORWARD-LOOKING STATEMENTS

This prospectus, including the documents that we incorporate by reference, contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act. Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but are not always, made through the use of words or phrases such as “anticipates,” “estimates,” “plans,” “projects,” “trends,” “opportunity,” “comfortable,” “current,” “intention,” “position,” “assume,” “potential,” “outlook,” “remain,” “continue,” “maintain,” “sustain,” “seek,” “achieve,” “continuing,” “ongoing,” “expects,” “management believes,” “we believe,” “we intend” and similar words or phrases, or future or conditional verbs such as “will,” “would,” “should,” “could,” “may,” or similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties which could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this report, and in particular those factors listed under the section “Risk Factors.”

Because the factors referred to in the preceding paragraph could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements we make, you should not place undue reliance on any such forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement or statements to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. These forward-looking statements include statements regarding:

- potential strategic collaborations with others;
- future capital needs;
- adequacy of existing capital to support operations for a specified time;
- product development and marketing plan;
- clinical trial plans and anticipated results;
- anticipation of future losses;
- replacement of manufacturing sources;
- commercialization plans; and
- revenue expectations and operating results.

The information contained in this Prospectus, as well as in our SEC filings, identifies important factors that could adversely affect actual results and performance. Prospective investors are urged to carefully consider such factors.

All forward-looking statements attributable to us are expressly qualified in their entirety by the foregoing cautionary statements.

USE OF PROCEEDS

We cannot guarantee that we will receive any proceeds in connection with this offering because we may be unable choose not to issue and sell any securities covered by this prospectus.

Unless otherwise provided in a supplement or amendment to this prospectus, we intend to use any net proceeds from this offering, together with other available funds, for operating costs, including continuing to conduct our clinical development programs, capital expenditures and working capital needs and for other general corporate purposes.

We have not specifically identified the precise amounts we will spend on each of these areas or the timing of these expenditures. The amounts actually expended for each purpose may vary significantly depending upon numerous factors, including the amount and timing of the proceeds from this offering, progress with clinical product development and other cell therapy application programs. In addition, expenditures may also depend on the establishment of new collaborative arrangements with other companies, the availability of other financing, and other factors.

We anticipate that we will be required to raise substantial additional capital to continue to fund the clinical development of our cell therapy applications. We may raise additional capital through additional public or private financings, as well as collaborative relationships, incurring debt and other available sources.

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 the particular terms of the securities offered by that prospectus supplement. If we so 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.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock and certain provisions of our articles of incorporation and bylaws is a summary and is qualified in its entirety by the provisions of our articles of incorporation and bylaws.

Our authorized capital stock consists of 250,000,000 shares of common stock, no par value per share, and 5,000,000 shares of preferred stock, no par value per share.

Common Stock

Holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of shareholders and do not have cumulative voting rights. Holders of common stock have no preemptive, redemption or conversion rights and are not subject to future calls or assessments. No sinking fund provisions apply to our common stock. All outstanding shares are fully-paid and non-assessable. In the event of our liquidation, dissolution or winding up, holders of common stock are entitled to share ratably in assets available for distribution, subject to prior distribution rights of any preferred stock then outstanding. Holders of common stock are entitled to receive proportionately any such dividends declared by the board of directors, out of legally available funds for dividends, subject to any preferences that may be applicable to any shares of preferred stock that may be outstanding at that time. The rights, preferences and privileges of holders of common stock are set forth in our restated articles of incorporation, which may be amended by the holders of a majority of the outstanding shares of common stock.

Preferred Stock

Our Board of Directors is authorized to issue up to 5,000,000 shares of preferred stock in one or more series without shareholder approval. Our Board of Directors may determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our Board of Directors to issue preferred stock in one or more series and determine the number of shares in the series and its rights and preferences is to eliminate delays associated with a shareholder vote on specific issuances. Examples of rights and preferences that the Board of Directors may fix are:

- dividend rights,
- dividend rates,
- conversion rights,
- voting rights,
- terms of redemption, and
- liquidation preferences.

The issuance of preferred stock, while providing desirable flexibility in connection with possible acquisitions and other corporate purposes, could make it more difficult for a third party to acquire, or could discourage a third party from acquiring, a majority of our outstanding voting stock. The rights of holders of our common stock described above, will be subject to, and may be adversely affected by, the rights of any preferred stock that we may designate and issue in the future.

We will incorporate by reference as an exhibit to the registration statement, which includes this prospectus, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering. This description and the applicable prospectus supplement will include:

- the title and stated value;
- the number of shares authorized;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date, and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price, or how it will be calculated, and the exchange period;
- voting rights, if any, of the preferred stock;
- preemptive rights, if any;

- restrictions on transfer, sale or other assignment, if any;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of any material United States federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

When we issue shares of preferred stock under this prospectus, the shares will fully be paid and nonassessable and will not have, or be subject to, any preemptive or similar rights.

The Michigan Business Corporation Act provides that the holders of preferred stock will have the right to vote separately as a class on any proposal involving an increase or decrease in the authorized number of shares of that class, or changes in the powers, preferences or special rights of holders of that preferred stock so as to affect the class adversely. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

Michigan Law and Certain Charter and By-Law Provisions

We are subject to certain anti-takeover provisions of the Michigan Business Corporation Act (the "MBCA") that could delay or make more difficult a merger or tender offer involving Aastrom. Chapter 7A of the MBCA prevents, in general, an "interested shareholder" (defined generally as a person owning 10% or more of a corporation's outstanding voting shares) from engaging in a "business combination" (as defined therein) with a Michigan corporation unless: (a) the Board of Directors issues an advisory statement, holders of 90% of the shares of each class of stock entitled to vote approve the transaction, and holders of two-thirds of the "disinterested" shares of each class of stock approve the transaction; or (b) the interested shareholder has been an interested shareholder for at least five years and has not acquired beneficial ownership of any additional shares of the corporation subsequent to the transaction which resulted in such shareholder being classified as an interested shareholder, and meets certain requirements, including provisions relating to the fairness of the price and the form of consideration paid; or (c) the Board of Directors, by resolution, exempts a particular interested shareholder from these provisions prior to the interested shareholder becoming an interested shareholder. The MBCA also contains certain other provisions that could have anti-takeover effects.

Our restated articles of incorporation eliminate the right of shareholders to act without a meeting and do not provide for cumulative voting in the election of directors. The amendment of any of these provisions would require approval by holders of at least a majority of the shares of our outstanding common stock.

These and other provisions of our restated articles of incorporation could have the effect of deterring certain takeovers or delaying or preventing certain changes in control or management of Aastrom, including transactions in which shareholders might otherwise receive a premium for their shares over then-current market prices.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Continental Stock Transfer & Trust Company.

DESCRIPTION OF DEBT SECURITIES

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

We will issue any senior notes under the senior indenture that we will enter into with a trustee to be named in the senior indenture. We will issue any subordinated notes under the subordinated indenture that we will enter into with a trustee to be named in the subordinated indenture. We have filed forms of these documents as exhibits to the registration statement, which includes this prospectus. We use the term "indentures" to refer to both the senior indenture and the subordinated indenture. The indentures will be qualified under the Trust Indenture Act. We use the term "debenture trustee" to refer to either the senior trustee or the subordinated trustee, as applicable.

The following summaries of material provisions of the senior notes, the subordinated notes and the indentures are subject to, and qualified in their entirety by reference to, all the provisions of the indenture applicable to a particular series of debt securities. Except as we may otherwise indicate, the terms of the senior indenture and the subordinated indenture are identical.

We conduct some of our operations through subsidiaries formed under the laws of Germany, Ireland and Spain, respectively. Our rights and the rights of our creditors, including holders of debt securities, to the assets of any subsidiary of ours upon that subsidiary's liquidation or reorganization or otherwise would be subject to the prior claims of that subsidiary's creditors, except to the extent that we may be a creditor with recognized claims against the subsidiary. Our subsidiary's creditors would include trade creditors, debt holders, secured creditors and taxing authorities. Except as we may provide in a prospectus supplement, neither the debt securities nor the indentures restrict us or our subsidiary from incurring indebtedness.

General

We will describe in each prospectus supplement the following terms relating to a series of notes:

- the title;
- any limit on the amount that may be issued;
- whether or not we will issue the series of notes in global form, the terms and who the depository will be;
- the maturity date;
- the annual interest rate, which may be fixed or variable, or the method for determining the rate;
- the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;
- whether or not the notes will be secured or unsecured, and the terms of any security;
- the terms of the subordination of any series of subordinated debt;
- the place where payments will be payable;
- our right, if any, to defer payment of interest and the maximum length of any such deferral period;
- the date, if any, after which, and the price at which, we may, at our option, redeem the series of notes pursuant to any optional redemption provisions;
- the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund provisions or otherwise, to redeem, or at the holder's option to purchase, all or a portion of the series of notes;
- whether the indenture will restrict our ability to pay dividends, or will require us to maintain any asset ratios or reserves;
- whether we will be restricted from incurring any additional indebtedness;
- a discussion of any material United States federal income tax considerations applicable to the notes;
- the denominations in which we will issue the series of notes, if other than denominations of $1,000 and any integral multiple thereof; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities.

Conversion or Exchange Rights

We will set forth in the prospectus supplement the terms on which a series of notes may be convertible into or exchangeable for common stock or other securities of ours. We will include in that prospectus supplement provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of common stock or other securities of ours that the holders of the series of notes receive would be subject to adjustment.

Consolidation, Merger or Sale

The indentures do not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of all or substantially all of our assets. However, any successor to or acquirer of such assets must assume all of our obligations under the indentures or the notes, as appropriate.

Events of Default Under the Indenture

The following are events of default under the indentures with respect to any series of notes that we may issue:

- if we fail to pay interest when due and our failure continues for 60 days and the time for payment has not been extended or deferred;
- if we fail to pay the principal, or premium, if any, when due and the time for payment has not been extended or delayed;
- if we fail to observe or perform any other covenant contained in the notes or the indentures, other than a covenant specifically relating to another series of notes, and our failure continues for 60 days after we receive notice from the debenture trustee or holders of at least 50% in aggregate principal amount of the outstanding notes of the applicable series; and
- if specified events of bankruptcy, insolvency or reorganization occur as to us.

If an event of default with respect to notes of any series occurs and is continuing, the debenture trustee or the holders of at least 50% in aggregate principal amount of the outstanding notes of that series, by notice to us in writing, and to the debenture trustee if notice is given by such holders, may declare the unpaid principal of, premium, if any, and accrued interest, if any, due and payable immediately.

The holders of a majority in principal amount of the outstanding notes of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indentures, if an event of default under an indenture shall occur and be continuing, the debenture trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of notes, unless such holders have offered the debenture trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding notes of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the debenture trustee, or exercising any trust or power conferred on the debenture trustee, with respect to the notes of that series, provided that:

- the direction so given by the holder is not in conflict with any law or the applicable indenture; and
- subject to its duties under the Trust Indenture Act, the debenture trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

- a holder of the notes of any series will only have the right to institute a proceeding under the indentures or to appoint a receiver or trustee, or to seek other remedies if:
  - the holder has given written notice to the debenture trustee of a continuing event of default with respect to that series;
  - the holders of at least 50% in aggregate principal amount of the outstanding notes of that series have made written request, and such holders have offered reasonable indemnity to the debenture trustee to institute the proceeding as trustee; and
  - the debenture trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding notes of that series other conflicting directions within 60 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of notes if we default in the payment of the principal, premium, if any, or interest on, the notes.

We will periodically file statements with the debenture trustee regarding our compliance with specified covenants in the indentures.

Modification of Indenture; Waiver

We and the debenture trustee may change an indenture without the consent of any holders with respect to specific matters, including:

- to fix any ambiguity, defect or inconsistency in the indenture; and
- to change anything that does not materially adversely affect the interests of any holder of notes of any series.

In addition, under the indentures, the rights of holders of a series of notes may be changed by us and the debenture trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding notes of each series that is affected. However, we and the debenture trustee may only make the following changes with the consent of each holder of any outstanding notes affected:

- extending the fixed maturity of the series of notes;
- reducing the principal amount, reducing the rate of or extending the time of payment of interest, or any premium payable upon the redemption of any notes; or
- reducing the percentage of notes, the holders of which are required to consent to any amendment.

Discharge

Each indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for obligations to:

- register the transfer or exchange of debt securities of the series;
- replace stolen, lost or mutilated debt securities of the series;
- maintain paying agencies;
- hold monies for payment in trust;
- compensate and indemnify the trustee; and
- appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the debenture trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange, and Transfer

We will issue the notes of each series only in fully registered form without coupons and, unless we otherwise specify in the applicable prospectus supplement, in denominations of $1,000 and any integral multiple thereof. The indentures provide that we may issue notes of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company or another depository named by us and identified in a prospectus supplement with respect to that series. See "Legal Ownership of Securities" for a further description of the terms relating to any book-entry securities.

At the option of the holder, subject to the terms of the indentures and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the notes of any series can exchange the notes for other notes of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indentures and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the notes may present the notes for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the notes that the holder presents for transfer or exchange, we will make no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any notes. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the notes of each series.

If we elect to redeem the notes of any series, we will not be required to:

- issue, register the transfer of or exchange any notes of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any notes that may be selected for redemption and ending at the close of business on the day of the mailing; or
- register the transfer of or exchange any notes so selected for redemption, in whole or in part, except the unredeemed portion of any notes we are redeeming in part.

Information Concerning the Debenture Trustee

The debenture trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the debenture trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the debenture trustee is under no obligation to exercise any of the powers given it by the indentures at the request of any holder of notes unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any notes on any interest payment date to the person in whose name the notes, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the notes of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check, which we will mail to the holder. Unless we otherwise indicate in a prospectus supplement, we will designate the corporate trust office of the debenture trustee in the City of New York as our sole paying agent for payments with respect to notes of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the notes of a particular series. We will maintain a paying agent in each place of payment for the notes of a particular series.

All money we pay to a paying agent or the debenture trustee for the payment of the principal of or any premium or interest on any notes that remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the security thereafter may look only to us for payment of those amounts.

Governing Law

The indentures and the notes will be governed by and construed in accordance with the laws of the State of New York, except to the extent that the Trust Indenture Act is applicable.

Subordination of Subordinated Notes

The subordinated notes will be unsecured and will be subordinate and junior in priority of payment to some or all of our other indebtedness to the extent described in a prospectus supplement. The subordinated indenture does not limit the amount of subordinated notes which we may issue. It also does not limit us from issuing any other secured or unsecured debt.

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, which includes this prospectus.

General

We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and/or 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 warrant agreement. We will enter into the warrant agreement with a warrant agent. Each warrant agent will be a bank that we select that has its principal office in the United States and a combined capital and surplus of at least $50,000,000. We will indicate the name and address of the warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

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;
- 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.

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 any premium 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 any dividends or payments upon our liquidation, dissolution or winding up or to exercise any voting rights.

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 5:00 P.M. New York 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 exercise.

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 or series 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.

PLAN OF DISTRIBUTION

The securities being offered may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market prices, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected at various times in one or more of the following transactions, or in other kinds of transactions:

- through underwriters for resale to the public or investors:
- transactions on the Nasdaq Stock Market or on any national securities exchange or U.S. inter-dealer system of a registered national securities association on which our common stock may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in private transactions and transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- in connection with short sales of the shares;
- by pledge to secure debt and other obligations;
- through the writing of options, whether the options are listed on an options exchange or otherwise;
- in connection with the writing of non-traded and exchange-traded call options, in hedge transactions and in settlement of other transactions in standardized or over-the-counter options;
- through a combination of any of the above transactions; or
- any other method permitted by law.

We may sell our securities directly to one or more purchasers, or to or through underwriters, dealers or agents or through a combination of those methods. The related prospectus supplement will set forth the terms of each offering, including:

- the name or names of any agents, dealers, underwriters or investors who purchase the securities;
- the purchase price of the securities being offered and the proceeds we will receive from the sale;
- the amount of any compensation, discounts commissions or fees to be received by the underwriters, dealer or agents;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any discounts or concessions allowed or reallowed or paid to dealers;
- any securities exchanges on which such securities may be listed;
- the terms of any indemnification provisions, including indemnification from liabilities under the federal securities laws; and
- the nature of any transaction by an underwriter, dealer or agent during the offering that is intended to stabilize or maintain the market price of the securities.

In addition, any securities covered by this prospectus that qualify for sale pursuant to Regulation S may be sold pursuant to Regulation S rather than pursuant to this prospectus.

In connection with the sale of our common stock, underwriters may receive compensation from us or from purchasers of our common stock in the form of discounts, concessions or commissions. Underwriters, dealers and agents that participate in the distribution of our common stock may be deemed to be underwriters. Discounts or commissions they receive and any profit on their resale of our common stock may be considered underwriting discounts and commissions under the Securities Act of 1933.

We may agree to indemnify underwriters, dealers and agents who participate in the distribution of our common stock against various liabilities, including liabilities under the Securities Act of 1933. We may also agree to contribute to payments that the underwriters, dealers or agents may be required to make in respect of these liabilities. We may authorize dealers or other persons who act as our agents to solicit offers by various institutions to purchase our common stock from us under contracts that provide for payment and delivery on a future date. We may enter into these contracts with commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and others. If we enter into these agreements concerning any series of our common stock, we will indicate that in the prospectus supplement or amendment.

In connection with an offering of our common stock, underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock. Specifically, underwriters may over-allot in connection with the offering, creating a syndicate short position in our common stock for their own account. In addition, underwriters may bid for, and purchase, our common stock in the open market to cover short positions or to stabilize the price of our common stock. Finally, underwriters may reclaim selling concessions allowed for distributing our common stock in the offering if the underwriters repurchase previously distributed common stock in transactions to cover short positions, in stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market price of our common stock above independent market levels. Underwriters are not required to engage in any of these activities and may end any of these activities at any time. Agents and underwriters may engage in transactions with, or perform services for, us and our affiliates in the ordinary course of business.

LEGAL MATTERS

The validity of the common stock offered by this Prospectus will be passed upon for us by Dykema Gossett PLLC, Ann Arbor, Michigan, acting as special counsel to the Company.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended June 30, 2008 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the Securities and Exchange Commission a registration statement on Form S-3 under the Securities Act of 1933, relating to the shares of our common stock being offered by this prospectus. For further information pertaining to our common stock and the shares of common stock being offering by this prospectus, reference is made to such registration statement. This prospectus constitutes the prospectus we filed as a part of the registration statement and it does not contain all information in the registration statement, certain portions of which have been omitted in accordance with the rules and regulations of the Securities and Exchange Commission and certain portions of which have been incorporated by reference to our reports filed with the Securities and Exchange Commission.

In addition, we are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, and, in accordance with such requirements, we file reports, proxy statements and other information with the Securities and Exchange Commission relating to our business, financial statements and other matters.

Reports and proxy and information statements filed under Section 14(a) and 14(c) of the Securities Exchange Act of 1934 and other information filed with the Securities and Exchange Commission as well as copies of the registration statement can be inspected and copied at the public reference facilities maintained by the Securities and Exchange Commission at Room 1024, Judiciary Plaza, 100 F Street, N.E., Washington, D.C. 20549. Copies of such material can also be obtained at prescribed rates from the Public Reference Section of the Securities and Exchange Commission at its principal office at Judiciary Plaza, 100 F Street, N.E., Washington, D.C. 20549. Please call the Securities and Exchange Commission at 1.800.SEC.0330 for further information on the operation of the public reference room. Such material may also be obtained electronically by visiting the SEC's web site on the Internet at http://www.sec.gov. Our common stock is traded on the Nasdaq Capital Market under the symbol "ASTM."

Copies of our filings with the Securities and Exchange Commission are also available, free of charge, on our corporate website at http://www.aastrom.com. The other information found on our website is not incorporated by reference into this prospectus.

You should rely only on the information contained in this Prospectus or the documents incorporated by reference. We have not authorized anyone to provide you with any information that is different from that contained in this Prospectus. The information contained in this Prospectus is accurate as of the date of this Prospectus. You should not assume that there have been no changes in the affairs of the Company since the date of this Prospectus or that the information in this Prospectus is correct as of any time after the date of this Prospectus, regardless of the time that this Prospectus is delivered or any sale of the common stock offered by this Prospectus is made. This Prospectus is not an offer to sell or a solicitation of an offer to buy the shares covered by this Prospectus in any jurisdiction where the offer or solicitation is unlawful.

DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES

As permitted by the Michigan Business Corporation Act, our Bylaws contain provisions that permit us to indemnify our directors and officers to the full extent permitted by Michigan law and our Restated Articles of Incorporation, as amended, contain provisions that eliminate the personal liability of our directors in each case for monetary damages to us or our shareholders for breach of their fiduciary duties, except to the extent that Michigan law prohibits indemnification or elimination of liability. These provisions do not limit or eliminate our rights or the rights of any shareholder to seek an injunction or any other non-monetary relief in the event of a breach of a director's or officer's fiduciary duty. In addition, these provisions apply only to claims against a director or officer arising out of his or her role as a director or officer and do not relieve a director or officer from liability if he or she engaged in willful misconduct or a knowing violation of the criminal law or any federal or state securities law.

The rights of indemnification provided in our Bylaws are not exclusive of any other rights that may be available under any insurance or other agreement, by vote of shareholders or disinterested directors or otherwise.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended (the "Securities Act"), may be permitted to directors, officers or persons controlling us pursuant to the foregoing provisions, we have been informed that in the opinion of the Securities and Exchange Commission this type of indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Table of Contents

46,154,000 Shares

Class A Warrants to Purchase 34,615,500 Shares

Class B Warrants to Purchase 23,077,000 Shares

Common Stock

PROSPECTUS SUPPLEMENT

Oppenheimer & Co.

January 15, 2010