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PROSPECTUS

AASTROM BIOSCIENCES, INC.

4,984,079 Shares of Common Stock

This prospectus relates to the sale of up to 4,984,079 shares of our common stock by Fusion Capital Fund II, LLC, or Fusion Capital. The common stock covered by this prospectus consists of shares of common stock that have been issued or may be issued to Fusion Capital under that common stock purchase agreement dated as of June 12, 2009. Fusion Capital is sometimes referred to in this prospectus as the selling shareholder. The prices at which Fusion Capital may sell the shares will be determined by the prevailing market price for the shares or in negotiated transactions. We will not receive proceeds from the sale of our shares by Fusion Capital.

Our common stock is registered under Section 12(b) of the Securities Exchange Act of 1934 and quoted on the Nasdaq Capital Market under the symbol "ASTM." On April 12, 2010, the last reported sale price for our common stock as reported on the Nasdaq Capital Market was $1.70 per share. Our principal executive offices are located at 24 Frank Lloyd Wright Drive, Ann Arbor, Michigan, 48106 and our telephone number is (734) 930-5555.

Investing in our common stock involves risks. You should carefully consider the risk factors beginning on page 7 of this prospectus before you make an investment in our common stock.

The selling shareholder is an "underwriter" within the meaning of the Securities Act of 1933, as amended.

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 April 13, 2010.

You should read this prospectus, any applicable prospectus supplement and the information incorporated by reference in this prospectus before making an investment in the common stock of Aastrom Biosciences, Inc. See “Where You Can Find Additional Information” for more information, page 15. You should rely only on the information contained in or incorporated by reference in this prospectus or a prospectus supplement. We have not authorized anyone to provide you with different information. This document may be used only in jurisdictions where offers and sales of these securities are permitted. You should assume that information contained in this prospectus, or in any document incorporated by reference, is accurate only as of any date on the front cover of the applicable document. Our business, financial condition, results of operations and prospects may have changed since that date.

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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.

On February 18, 2010, we effected a one-for-eight reverse stock split of our common stock. Unless otherwise stated herein, all historical share amounts and prices in this prospectus have been adjusted to give retroactive effect to this reverse stock split.

Business

We focus on the development of innovative therapies to repair or regenerate damaged or diseased tissues or organs. We are developing autologous cellular therapies for the treatment of severe, chronic cardiovascular diseases. Using our proprietary Tissue Repair Cell (TRC) technology, we are able to expand the number of stem and early progenitor cells from a small amount (approximately 50 ml) of bone marrow collected from the patient. Early stage and clinical research show that these cells may have efficacy in the repair of cardiac and other tissue.

With the use of our proprietary TRC technology, we produce personalized cell products developed for site-specific delivery to repair or regenerate diseased or damaged tissue in patients. More than 375 patients have been treated in clinical trials based on this therapeutic approach over the past 10 years with no reported incidence of product safety problems or tissue rejection.

Cardiac Regeneration

Our lead product is based on the application of autologous stem cells used to repair damaged cardiac tissue. The U.S. Food and Drug Administration (FDA) has granted Orphan Drug Designation to our investigational therapy involving the use of TRCs in the treatment of dilated cardiomyopathy (DCM). DCM is a severe, chronic cardiac disease that leads to enlargement of the heart and is associated with reduced heart pumping function to the point that blood circulation is impaired. We have advanced this development program with two U.S. Phase II trials investigating both a surgical and a catheter-based delivery pathway for the use of CRCs in the treatment of DCM.

The first U.S. patient was treated with TRCs in our Phase II IMPACT-DCM surgical clinical trial in November 2008. As of January 31, 2010, the trial was fully enrolled with 40 patients who will be followed for one year. The study is being conducted at five cardiovascular treatment centers in the U.S., including: Methodist DeBakey Heart & Vascular Center in Houston, TX; Baylor University Medical Center in Dallas, TX; The University of Utah School of Medicine in Salt Lake City, UT; Cleveland Clinic Heart & Vascular Institute in Cleveland, OH; and Emory University Hospital Midtown in Atlanta, GA. We anticipate reporting the results of an interim analysis of 6 month patient data in the fourth quarter of calendar year 2010.

Our second cardiac trial, a U.S. Phase II cardiac catheter clinical trial has been designed to explore a catheter-based delivery of TRCs to treat DCM patients. Clinical site training for this trial was initiated during the fourth quarter of calendar year 2009, and we expect to begin enrolling patients in April 2010.

Vascular Regeneration

Our TRC technology has also shown promise in the treatment of an advanced stage of peripheral arterial disease (PAD) called critical limb ischemia (CLI). Patients with CLI generally have painful wounds on their feet that do not heal due to poor blood circulation, often leading to amputation. More than 160,000 amputations per year are associated with CLI. Our U.S. Phase IIb RESTORE-CLI clinical trial is investigating the safety and efficacy of TRCs in the treatment of patients with this severe, chronic disease compared with placebo; neither patients nor physicians know the treatment received during the study.

In February 2010 a planned interim analysis was performed for this study on 46 patients having completed at least 6 months of the study. According to the interim analysis, the safety profile was similar between the treatment and placebo patients. Based on a composite efficacy endpoint assessing time to treatment failure (including major amputations, doubling of wound size and new gangrene), our autologous TRCs were more effective than placebo ($p<0.05$). Other clinically meaningful endpoints (e.g., major amputation rate, complete wound healing) individually showed encouraging trends, but have not yet reached statistical significance at the interim analysis.

The interim analysis was planned to assess performance of TRCs and to help plan further studies. Based on the interim findings, we concluded enrollment of new patients in order to complete the study as soon as possible, and to begin planning and discussions with the FDA for pivotal clinical trials in CLI. The last patient enrolled in this trial was treated on March 23, 2010, for a total of 86 patients who will be followed for 12 months.

The TRC Technology Platform

TRCs are a cellular therapy developed using our proprietary TRC technology, an automated processing system utilizing “single-pass perfusion” to manufacture human cell products for clinical use. The system meets all Good Manufacturing Practices (GMP) guidelines. TRC-based therapies begin with a small amount of the patient’s own bone marrow to produce large numbers of stem and early progenitor cells. This mixture of cell types is capable of developing into cardiac, vascular and other tissues.

Our cell products have three features that we believe are critical for success in regenerative medicine. Cellular therapies based on our TRC technology are:

- **autologous,** which means we start with the patient’s own cells, which are accepted by the patient’s immune system allowing the cells to differentiate and integrate into existing functional tissues. Long-term engraftment is expected to support repair of damaged tissue;
- **expanded,** resulting in significantly higher concentrations of stem and progenitor cells than occur naturally, especially for older patients; and,
- **a mixed population of cells,** which includes all of the most important cell types required for tissue regeneration and found in natural bone marrow and are required for tissue regeneration.

All TRC-based products are manufactured at centralized facilities. We have our primary cell processing facility in the U.S. located at our headquarters in Ann Arbor, MI, and two contract facilities in the E.U. 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 a development-stage company engaged in research and product development conducted principally on our own behalf. We are focused the development of products based on our TRC technology platform for use in cardiovascular indications. We currently generate minimal product sales involving cell-therapy based products to physicians in the United States. At such time as we satisfy applicable regulatory approval requirements, we expect the sales of therapies based on our TRC technology platform to constitute nearly all of our revenue from product sales.

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

We expect that we will need to raise significant additional funds or pursue strategic alliances or other operational strategies to advance our product development programs including completion of our clinical research programs and commercialization of 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 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 are achieved. With respect to our current activities, profitability 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, 2009, we have accumulated a net loss of approximately $203 million. We cannot provide any assurance that we will achieve profitability or obtain the required funding, regulatory approvals or complete additional corporate partnering or acquisition transactions to advance our products to commercial-stage development.

Clinical Development

Our clinical development programs are focused on the utilization of our TRCs for cardiac and vascular regeneration. Our TRC-based cell therapies have a 72-hour shelf-life which we believe provides additional flexibility in transport and scheduling treatment for patients.

The mixture of cell types in TRC-based therapies is capable of developing into cardiac, vascular and other tissues. We have demonstrated in the laboratory that cells in TRC-based therapies can differentiate into endothelial (blood vessel) lineages. In addition, TRC treatment in both rat and mouse models of critical limb ischemia have shown evidence of angiogenesis and increased tissue perfusion, respectively. These preclinical observations support our current clinical-stage research at treatment centers where we are exploring the use of TRC-based therapies to regenerate cardiac tissue in patients with dilated cardiomyopathy and vascular tissue in patients with critical limb ischemia.

Results to date in our current clinical trials may not be indicative of results obtained from subsequent patients in those trials or from future clinical trials. Further, our future clinical trials may not be successful and we may not be able to obtain the required Biologic License Application (BLA) registration in the U.S. or required foreign regulatory approvals for our TRC-based products in a timely fashion, or at all. See "Risk Factors."

Clinical Trials Summary

Cardiac Regeneration

Dilated Cardiomyopathy — Background

DCM is a severe, chronic cardiac disease that leads to enlargement of the heart and is associated with reduced heart pumping function to the point that blood circulation is impaired. Patients with DCM typically present with symptoms of congestive heart failure, including limitations in physical activity and shortness of breath. DCM generally occurs in patients who have ischemic heart failure due to multiple heart attacks, though it can also be found in patients with non-ischemic heart failure caused by hypertension, viral infection, metabolic abnormalities and other causes. Patient prognosis depends on the stage of the disease but is typically characterized by a high mortality rate. Other than heart transplantation, there are currently no curative treatment options for end-stage patients with this disease. The New England Journal of Medicine estimates that in the U.S. alone 120,000 people currently suffer from this disease; other sources estimate that the patient population with DCM may be as high as 150,000.

Early clinical data in the treatment of DCM with TRCs was obtained from two DCM patients treated in 2007 at the University Hospital in Düsseldorf, Germany. These two patients showed 15-20% improvement in their left ventricular ejection fraction approximately 2 months after treatment with TRCs. One patient maintained this improvement after 7 months of follow-up; however, the other died due to natural causes after declining further medical treatment. These data provided supportive information critical to the success of the U.S. Phase II IMPACT-DCM IND application.

Dilated Cardiomyopathy — Surgical Trial

In November 2008, the first patient was treated in the 40-patient U.S. IMPACT-DCM surgical trial to evaluate TRCs in the treatment of DCM. This randomized, controlled, prospective, open-label, Phase II study was designed using two strata to include 20 patients with ischemic DCM and 20 patients with non-ischemic DCM. TRCs, manufactured using our TRC technology, received Orphan Drug Designation from the FDA for the treatment of DCM in February 2007. The FDA activated our Investigational New Drug (IND) application for this clinical trial in May 2008.

The IMPACT-DCM study is fully enrolled, with the final patient treated in March 2010. Patients were enrolled at five U.S. clinical sites (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). We anticipate reporting the results of an interim analysis of 6 month patient data in the fourth quarter of calendar year 2010.

Participants in the IMPACT-DCM clinical trial have to be in New York Heart Association (NYHA) functional class III or IV heart failure, must have an LVEF of less than or equal to 30% (60-75% is typical for a healthy person), and meet certain other eligibility criteria. The IMPACT-DCM trial is a controlled trial and patients are randomized in an approximate 3:1 ratio to the treatment versus the control group within each stratum. All patients receive optimal medical therapy and patients in the treatment group are treated with CRCs through direct injection into the heart muscle during minimally invasive open heart surgery (involving an incision of approximately 2 inches). While the primary objective of this study is to assess the safety of TRCs in patients with DCM (including the incidence of ectopy and arrhythmia as well as major adverse cardiac events), efficacy measures including cardiac dimensions and tissue mass, cardiac function (e.g. cardiac output, LVEF, cardiopulmonary exercise testing parameters), cardiac perfusion and viability as well as other efficacy endpoints will be monitored. NYHA functional class and quality of life are also assessed. Patients will be followed for 12 months post-treatment.

Dilated Cardiomyopathy — Catheter Trial

We have expanded our ongoing clinical program to evaluate TRCs in the treatment of severe heart failure patients with a second U.S. Phase II cardiac regeneration trial designed to explore a catheter-based delivery of TRCs to treat DCM patients. The FDA activated our IND application for this clinical trial in November 2009. The first clinical site was trained in December 2009 and patient enrollment is expected to begin during April 2010.

This randomized, controlled, prospective, open-label, Phase II study seeks to enroll 12 patients with ischemic DCM and 12 patients with non-ischemic DCM at four clinical sites in the U.S. Participants must be in NYHA functional class III or IV heart failure, must have an LVEF of less than or equal to 30% (60-75% is typical for a healthy person) and meet certain additional eligibility criteria. All 24 patients will receive optimal medical therapy and 16 of the patients (8 ischemic and 8 non-ischemic) will also be treated with TRCs via catheter injection. The catheter trial will randomize patients in an approximate 2:1 ratio to the treatment versus

control group within each stratum. While the primary objective of this study is to assess the safety of TRCs delivered by catheter injection in patients with DCM, efficacy measures including heart failure stage and cardiac function parameters will also be assessed. Patients will be followed for 12 months post-treatment.

Vascular Tissue Regeneration

Critical Limb Ischemia — Background

Peripheral Arterial Disease (PAD) is a chronic disease that progressively restricts blood flow in the limbs and can lead to serious medical complications. This disease is often associated with other clinical conditions, including hypertension, cardiovascular disease, hyperlipidemia, diabetes, obesity and stroke. CLI is used to describe patients with the most severe forms of PAD: those with chronic ischemia-induced pain (even at rest), ulcers, tissue loss or gangrene in the limbs. CLI is typically the end stage of PAD disease. Patients suffering from this condition are critically ill, with a high risk of amputation. These patients are extremely limited in their ambulatory capacity, experience constant and chronic ischemia-induced pain, ulcers, tissue loss or gangrene to the limbs, which lead to approximately 160,000 amputations per year.

Laboratory observations have shown that TRC-based products have the ability to form small blood vessel-like structures *in vitro*. TRC treatment in both rat and mouse models of critical limb ischemia have shown evidence of angiogenesis and increased tissue perfusion, respectively. These preclinical observations support our current clinical-stage research where we are exploring the use of TRC therapies to regenerate vascular tissue in patients with CLI.

The first evaluation of TRCs was conducted in a small clinical trial in Germany. Initial results from this study were reported in October 2007 at the 2nd Congress of the German Society for Stem Cell Research in Würzburg, Germany, by the study's Principal Investigator from the Heart & Diabetes Center in Bad Oeynhausen, Germany. This interim report provided results from the first 13 patients treated in a 30-patient, multi-arm Phase I/II single-center clinical trial to evaluate the safety of TRCs and unexpanded bone marrow cells in the treatment of chronic diabetic foot wounds associated with CLI. As presented, results reflect treatment experience from 4 diabetic patients with ischemia-related chronic tissue ulcers who were treated with TRCs, 7 patients who were treated with normal unexpanded marrow cells, and two standard-of-care patients who did not receive cells. All patients received wound care according to treatment standards outlined by the American Diabetes Association. Twelve months post-treatment, all patients in the interim analysis who were treated with TRCs reported no major amputations, no cell-related adverse events, and healing of all open wounds. Of the 7 patients treated with unexpanded bone marrow cells, 5 reported results similar to the TRC-treated patients 12 months post-treatment, 1 reported similar results to the TRC-treated patients 18 months post-treatment, and 1 patient underwent a major amputation. For the 2 standard-of-care patients who only received wound care (no cells), 1 patient received a major amputation and 1 patient experienced no improvement in wound healing after 12 months. Patient follow-up has been completed and final data are expected to be reported by the investigator.

Critical Limb Ischemia Trial

Following the interim clinical results from Germany, we initiated the RESTORE-CLI trial, a U.S. Phase IIb prospective, controlled, randomized, double-blind, multi-center clinical trial to treat patients suffering from CLI. This trial is designed to enroll up to 150 patients at up to 30 sites. Patients are randomized into two groups (treatment or placebo control) to evaluate the safety and efficacy of TRCs in the treatment of CLI. Patients are being followed for a period of 12 months post-treatment. In addition to assessing the safety of TRCs, secondary endpoints include the measurement of time to treatment failure, major amputation rates, level of amputation, complete wound healing, blood flow in affected limbs, patient quality of life, pain scores and analgesic use.

In February 2010 a planned interim analysis was performed for this study on 46 patients having completed at least 6 months of the study. We reported the safety profile was similar between the treatment and control patients. Importantly, we reported that our autologous TRCs were more effective than placebo ($p<0.05$), based on a composite efficacy endpoint assessing time to treatment failure (including major amputations, doubling of wound size or new gangrene). Other clinically meaningful endpoints (e.g., major amputation rate, complete wound healing) individually showed encouraging trends, but have not yet reached statistical significance at the interim analysis.

The interim analysis was planned to assess performance of TRCs in the CLI patient population and to help plan further studies. Based on the interim findings, we concluded enrollment of new patients in February 2010 in order to complete the study as rapidly as possible, and to begin planning and discussions with the FDA for pivotal clinical trials in CLI. The last patient enrolled in this trial was treated on March 23, 2010.

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, Ann Arbor, Michigan 48106. Our telephone number is (734) 930-5555. The address of our website is http://www.aastrom.com. Except for those documents explicitly incorporated by reference herein, information available on or through our website is not part of this prospectus.

Our Common Stock

Our common stock, no par value, trades on the Nasdaq Capital Market under the symbol “ASTM.”

The Offering

This prospectus relates to the resale by the selling shareholder identified in this prospectus of up to 4,984,079 shares of common stock. All of the shares, when sold, will be sold by the selling shareholder. The prices at which the selling shareholder may sell the shares will be determined by the prevailing market price for the shares or in negotiated transactions. We will not receive any proceeds from the sale of the shares by the selling shareholder.

On June 12, 2009, we entered into a Common Stock Purchase Agreement, or Purchase Agreement, with Fusion Capital, an Illinois limited liability company. Under the Purchase Agreement, Fusion Capital is obligated, under certain conditions, to purchase shares from us in an aggregate amount of $30.0 million from time to time over a 25-month period. Under the terms of the Purchase Agreement, Fusion Capital has received an initial commitment fee consisting of 181,529 shares of our common stock. Also, under the Purchase Agreement, we will issue to Fusion Capital up to an additional 302,549 shares as a commitment fee pro rata as we receive the $30.0 million of future funding. As of March 24, 2010, 1,900,083 shares of our common stock (including 232,962 shares related to the commitment fee) were issued to Fusion Capital for net proceeds of $5.1 million. As of March 24, 2010, there were 28,255,889 shares outstanding (28,196,584 shares held by non- affiliates) excluding the 2,832,879 shares registered under this registration statement that can be sold to Fusion and the 251,117 shares of additional commitment shares that Fusion Capital has not yet received from us. If all of such shares offered hereby were issued and outstanding as of the date hereof, the 4,984,079 shares (which includes the 1,900,083 shares already issued) would represent 17.64% of the total common stock outstanding or 17.68% of the non-affiliate shares outstanding as of the date hereof.

Under the Purchase Agreement and the Registration Rights Agreement, dated as of June 12, 2009 by and between Aastrom and Fusion Capital, or the Registration Rights Agreement, we are required to register and have included in the offering pursuant to this prospectus (1) 1,900,083 shares which have already been issued through the date hereof (including 232,962 shares related to the commitment fee), (2) an additional 251,117 shares which we may issue in the future as a commitment fee pro rata as we receive the future funding under the Purchase Agreement and (3) at least 2,832,879 shares which we may sell to Fusion Capital (not including the additional commitment fee shares). All 4,984,079 shares are being offered pursuant to this prospectus. Under the Purchase Agreement, we have the right but not the obligation to sell more than the 4,500,000 shares to Fusion Capital. The number of shares ultimately offered for sale by Fusion Capital is dependent upon the number of shares purchased by Fusion Capital under the Purchase Agreement.

Generally, we have the right but not the obligation from time to time to sell our shares to Fusion Capital in amounts between $100,000 and $4.0 million depending on certain conditions. We have the right to control the timing and amount of any sales of our shares to Fusion Capital. The purchase price of the shares will be determined based upon the market price of our shares without any fixed discount at the time of each sale. Fusion Capital shall neither have the right nor the obligation to purchase any shares of our common stock on any business day that the price of our common stock is below $0.80.

Additionally, in order to be in compliance with Nasdaq Capital Market rules, we cannot be required to sell, and Fusion Capital shall not have the right or the obligation to purchase, shares of our common at a price below $2.88, which represents the greater of the book value per share of our common stock as of March 31, 2009 or the closing sale price per share of our common stock on June 11, 2009, the business day before we entered into the Purchase Agreement, plus $0.08. If we elect to sell our shares of common stock to Fusion Capital at a price per share below $2.88, we may be required to obtain shareholder approval in order to be in compliance with the Nasdaq Capital Market rules.

There are no negative covenants, restrictions on future fundings, penalties or liquidated damages in the Purchase Agreement or the Registration Rights Agreement. The Purchase Agreement may be terminated by us at any time at our discretion without any cost to us.

In January 2010, we completed an underwritten public offering of common stock and warrants. Pursuant to the underwriting agreement with Oppenheimer & Co., Inc., we have agreed not to issue or sell any securities under the Purchase Agreement with Fusion Capital for a period of 180 days from January 15, 2010 without the prior written consent of Oppenheimer & Co. Inc.

INCORPORATION BY REFERENCE

This prospectus incorporates by reference important business and financial information that we file with the Securities and Exchange Commission, or the SEC, 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. The documents incorporated herein by reference are:

- our Annual Report on Form 10-K for the fiscal year ended June 30, 2009 filed with the SEC on September 14, 2009;
- the portions of our definitive Proxy Statement, filed with the SEC on October 27, 2009, for our Annual Meeting of Shareholders held on December 14, 2009 that have been incorporated by reference into the Form 10-K for the fiscal year ended June 30, 2009;
- our Quarterly Reports on Form 10-Q for the quarters ended September 30, 2009 and December 31, 2009 filed with the SEC on November 6, 2009, February 9, 2010, respectively; and
- our Current Reports on Form 8-K filed with the SEC on September 8, 2009 (*Item 5.02 only*), October 7, 2009, October 20, 2009, October 27, 2009, December 17, 2009, January 15, 2010, January 27, 2010, and February 9, 2010, February 18, 2010, February 24, 2010 and March 5, 2010.

Information in this prospectus supersedes related information in the documents listed above.

We will provide to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, upon request, a copy of any and all of the documents incorporated by reference in this prospectus. You may request a copy of any or all of these documents, which will be provided at no cost, by written request to: Aastrom Biosciences, Inc., 24 Frank Lloyd Wright Drive, P.O. Box 376, Ann Arbor, Michigan 48106, attention: Investor Relations or by telephone request to (734) 930-5555. These filings may also be obtained through the “Investors” section of our website located at http://www.aastrom.com under the heading “Financial Information.” Except for the documents explicitly incorporated by reference herein, the information available on or through our website is not a part of this prospectus. Exhibits to such filings will not be provided, unless such exhibits are specifically incorporated by reference into the information that this prospectus incorporates.

Additionally, as discussed below under the heading “Where You Can Find Additional Information,” the public may read and copy any materials we file with the SEC at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1.800.SEC.0330 for further information on the 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.

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.

MATERIAL CHANGES

There have been no material changes in our 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 terminology such as “anticipates,” “estimates,” “plans,” “projects,” “trends,” “opportunity,” “comfortable,” “current,” “intention,” “position,” “assume,” “potential,” “outlook,” “remain,” “continue,” “maintain,” “sustain,” “seek,” “achieve,” “continuing,” “ongoing,” “expects,” “believes,” “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 except as may be required by law. 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 and expected cash flows;
- adequacy of existing capital to support operations for a specified time;
- the rate and degree of progress on our product development and marketing plans;
- the rate of regulatory approval to proceed with clinical trial programs and the success achieved in clinical trials;
- enrollment in and results of our clinical trials;
- the requirements for marketing authorization from regulatory bodies in the United States, the European Union and in other countries;
- regulatory and manufacturing requirements and uncertainties;
- our products and 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.

RISK FACTORS

Investors should carefully consider the risks and uncertainties and all other information contained or incorporated by reference in this prospectus, including the risks and uncertainties discussed under “Risk Factors” in our Annual Report on Form 10-K for the year ended June 30, 2009 and in our Quarterly Reports on Form 10-Q for the quarters ended September 30, 2009 and December 31, 2009. All of these “Risk Factors” are incorporated by reference herein in their entirety. These risks and uncertainties are not the only ones facing us. Additional risks of which we are not presently aware or that we currently believe are immaterial may also harm our business and results of operations. The trading price of our common stock could decline due to the occurrence of any of these risks, and investors could lose all or part of their investment. In assessing these risks, investors should also refer to the other information contained or incorporated by reference in our other filings with the SEC.

USE OF PROCEEDS

This prospectus relates to shares of our common stock that may be offered and sold from time to time by the selling shareholder. We will receive no proceeds from the sale of shares of common stock in this offering. However, we may receive up to $30.0 million in proceeds from the sale of our common stock to Fusion Capital under the Purchase Agreement. Any proceeds from Fusion Capital we receive under the Purchase Agreement are expected be used, together with other available funds, to conduct operations and to continue to conduct our clinical development programs.

THE FUSION TRANSACTION

General

On June 12, 2009, we entered into a Common Stock Purchase Agreement with Fusion Capital Fund II, LLC, an Illinois limited liability company. Under the Purchase Agreement, Fusion Capital is obligated, under certain conditions, to purchase shares from us in an aggregate amount of $30.0 million from time to time over a 25-month period. Under the terms of the Purchase Agreement, Fusion Capital received an initial commitment fee consisting of 181,529 shares of our common stock. Also, we will issue to Fusion Capital an

additional 302,550 shares as a commitment fee pro rata as we receive the $30.0 million of future funding. As of March 24, 2010, 1,900,083 shares of our common stock (including 232,962 shares related to the commitment fee) were issued to Fusion Capital for net proceeds of $5.1 million. As of March 24, 2010, there were 28,255,889 shares outstanding (28,196,584 shares held by non-affiliates) excluding the 2,832,879 shares registered under this registration statement that can be sold to Fusion and the 251,117 shares of additional commitment shares that Fusion Capital has not yet received from us. If all of such shares offered hereby were issued and outstanding as of the date hereof, the 4,984,079 shares (which includes the 1,900,083 shares already issued) would represent 17.64% of the total common stock outstanding or 17.68% of the non-affiliate shares outstanding as of the date hereof.

Under the Purchase Agreement and the Registration Rights Agreement we are required to register and have included in the offering pursuant to this prospectus (1) 1,900,083 shares which have already been issued (including 232,962 shares related to the commitment fee), (2) an additional 251,117 shares which we may issue in the future as a commitment fee pro rata as we receive the future funding under the Purchase Agreement and (3) at least 2,832,879 shares which we may sell to Fusion Capital (not including the additional commitment fee shares). All 4,984,079 shares are being offered pursuant to this prospectus. Under the Purchase Agreement, we have the right but not the obligation to sell more than the 4,500,000 shares to Fusion Capital. If we elect to sell more than the 4,500,000 shares (which we have the right but not the obligation to do), we must first register under the Securities Act any additional shares we may elect to sell to Fusion Capital before we can sell such additional shares. The number of shares ultimately offered for sale by Fusion Capital is dependent upon the number of shares purchased by Fusion Capital under the Purchase Agreement.

Generally, we have the right but not the obligation from time to time to sell our shares to Fusion Capital in amounts between $100,000 and $4.0 million depending on certain conditions. We have the right to control the timing and amount of any sales of our shares to Fusion Capital. The purchase price of the shares will be determined based upon the market price of our shares without any fixed discount at the time of each sale. Fusion Capital shall not have the right nor the obligation to purchase any shares of our common stock on any business day that the price of our common stock is below $0.80. If we elect to sell our shares of common stock to Fusion Capital at a price per share below $2.88, we may be required to obtain shareholder approval in order to be in compliance with the Nasdaq Capital Market rules.

There are no negative covenants, restrictions on future fundings, penalties or liquidated damages in the Purchase Agreement or the Registration Rights Agreement. The Purchase Agreement may be terminated by us at any time at our discretion without any cost to us. The Purchase Agreement provides that neither party has the ability to amend the Purchase Agreement and the obligations of both parties are non-transferable.

In January 2010, we completed an underwritten public offering of common stock and warrants. Pursuant to the underwriting agreement with Oppenheimer & Co., Inc., we have agreed not to issue or sell any securities under the Purchase Agreement with Fusion Capital for a period of 180 days from January 15, 2010 without the prior written consent of Oppenheimer & Co. Inc.

Purchase of Shares under the Purchase Agreement

Under the Purchase Agreement, on any business day selected by us, we may direct Fusion Capital to purchase up to $100,000 of our common stock. The purchase price per share is equal to the lesser of:

- the lowest sale price of our common stock on the purchase date; or
- the average of the three lowest closing sale prices of our common stock during the 12 consecutive business days prior to the date of a purchase by Fusion Capital.

The purchase price will be equitably adjusted for any reorganization, recapitalization, non-cash dividend, stock split, or other similar transaction occurring during the business days used to compute the purchase price. We may direct Fusion Capital to make multiple purchases from time to time in our sole discretion; no sooner then every other business day.

Our Right to Increase the Amount to be Purchased

In addition to purchases of up to $100,000 from time to time, we may also from time to time elect on any single business day selected by us to require Fusion Capital to purchase our shares in an amount up to $100,000 provided that our closing share price is not below $2.00 on the purchase date. We may also require Fusion Capital to purchase our shares in an amount up to $250,000 if our closing share price is not below $3.60 on the purchase date. In addition, we can require Fusion Capital to purchase our shares in an amount up to $500,000 if our closing share price is not below $6.00 on the purchase date. Furthermore, we can require Fusion Capital to purchase our shares in an amount up to $1.0 million if our closing share price is not below $10.00 on the purchase date. Moreover, we can require Fusion Capital to purchase our shares in an amount up to $2.0 million if our closing share price is not below $16.00 on the purchase date. Finally, we may also require Fusion Capital to purchase our shares in amount up to $4.0 million if our closing share price is not below $32.00 on the purchase date. We may direct Fusion Capital to make multiple large purchases from time to time in our sole discretion; however, at least 1 business day must have passed since the most recent large purchase was completed. The price

at which our common stock would be purchased in this type of larger purchase will be the lesser of (i) the lowest sale price of our common stock on the purchase date and (ii) the lowest purchase price (as described above) during the previous 10 business days prior to the purchase date.

Minimum Purchase Price

Under the Purchase Agreement, we have set a minimum purchase price ("floor price") of $0.80. However, Fusion Capital shall not have the right nor the obligation to purchase any shares of our common stock in the event that the purchase price would be less the floor price. Specifically, Fusion Capital shall not have the right or the obligation to purchase shares of our common stock on any business day that the market price of our common stock is below $0.80.

Compliance with Nasdaq Market Rules

In order to be in compliance with Nasdaq Capital Market rules, we cannot be required to sell, and Fusion Capital shall not have the right or the obligation to purchase, shares of our common stock at a price below $2.88, which represents the greater of the book value per share of our common stock as of March 31, 2009 or the closing price per share of our common stock on June 11, 2009, the business day before we entered into the Purchase Agreement, plus $0.01. If we elect to sell our shares to Fusion Capital at a price per share below $2.88, we may be required to obtain shareholder approval in order to be in compliance with the Nasdaq Capital Market rules.

Events of Default

Generally, Fusion Capital may terminate the Purchase Agreement without any liability or payment to the Company upon the occurrence of any of the following events of default:

- Ÿ the effectiveness of the registration statement of which this prospectus is a part of lapses for any reason (including, without limitation, the issuance of a stop order) or is unavailable to Fusion Capital for sale of our common stock offered hereby and such lapse or unavailability continues for a period of 10 consecutive business days or for more than an aggregate of 30 business days in any 365-day period;
- Ÿ suspension by our principal market of our common stock from trading for a period of 3 consecutive business days;
- Ÿ the de-listing of our common stock from our principal market provided our common stock is not immediately thereafter trading on the OTC Bulletin Board Market, the Nasdaq Global Market, the NYSE Amex, or the New York Stock Exchange;
- Ÿ the transfer agent's failure for 5 business days to issue to Fusion Capital shares of our common stock which Fusion Capital is entitled to under the Purchase Agreement;
- Ÿ any material breach of the representations or warranties or covenants contained in the Purchase Agreement or any related agreements which has or which could have a material adverse effect on us subject to a cure period of 5 business days; or
- Ÿ any participation or threatened participation in insolvency or bankruptcy proceedings by or against us; or
- Ÿ a material adverse change in our business.

Our Termination Rights

We have the unconditional right at any time for any reason to give notice to Fusion Capital terminating the Purchase Agreement without any cost to us.

No Short-Selling or Hedging by Fusion Capital

Fusion Capital has agreed that neither it nor any of its affiliates shall engage in any direct or indirect short-selling or hedging of our common stock during any time prior to the termination of the Purchase Agreement.

Effect of Performance of the Purchase Agreement on Our Shareholders

All 4,984,079 shares registered in this offering are expected to be freely tradable. It is anticipated that shares registered in this offering will be sold over a period of up to 25 months from the date of the original effective date of this registration statement on June

29, 2009. The sale by Fusion Capital of a significant amount of shares registered in this offering at any given time could cause the market price of our common stock to decline and to be highly volatile. Fusion Capital may ultimately purchase or be issued all, some or none of the 3,083,966 shares of common stock not yet issued but registered in this offering. As of March 24, 2010, we have issued 1,900,083 shares of our common stock to Fusion Capital (including 232,962 shares related to the commitment fee). Fusion Capital may sell all, some or none of the shares it acquires in this offering. Therefore, sales to Fusion Capital by us under the Purchase Agreement may result in substantial dilution to the interests of other holders of our common stock. However, we have the right to control the timing and amount of any sales of our shares to Fusion Capital and the Purchase Agreement may be terminated by us at any time at our discretion without any cost to us.

In connection with entering into the Purchase Agreement, we authorized the sale to Fusion Capital of up to 4,500,000 shares of our common stock (not including the 484,079 shares that will or may be issued related to the commitment fee) (22.47% of our outstanding common stock on June 12, 2009, the date of the Purchase Agreement, and 15.93% of our outstanding common stock on March 24, 2010). We have the right to terminate the Purchase Agreement without any payment or liability to Fusion Capital at any time. Subject to approval by our board of directors, we have the right but not the obligation to sell more than 4,500,000 shares offered hereby, however, we will be required to file a new registration statement and have it declared effective by the U.S. Securities & Exchange Commission. The number of shares ultimately offered for sale by Fusion Capital under this prospectus is dependent upon the number of shares purchased by Fusion Capital under the Purchase Agreement. As of March 24, 2010, 1,900,083 shares of our common stock (including 232,962 shares related to the commitment fee) were issued to Fusion Capital for net proceeds of $5.1 million. The following table sets forth the amount of proceeds we would receive from Fusion Capital from the sale of shares at varying purchase prices:

Assumed Average Purchase Price(1)	Number of Shares to be Sold if Full Purchase(2)	Percentage of Outstanding Shares After Giving Effect to the Purchased Shares Issued to Fusion Capital(3)	Proceeds from the Sale of Shares to Fusion Capital Under the Common Stock Purchase Agreement(2)
$2.00	4,500,000	13.70%	$ 9,000,000
$2.80	4,500,000	13.68%	$12,600,000
$3.20	4,500,000	13.68%	$14,400,000
$4.00	4,500,000	13.66%	$18,000,000
$5.28	4,500,000	13.64%	$23,760,000
$6.00	4,500,000	13.62%	$27,000,000
$6.67	4,500,000	13.61%	$30,000,000

(1) In order to be in compliance with Nasdaq Capital Market rules, we cannot be required to sell, and Fusion Capital shall not have the right or the obligation to purchase, shares of our common stock at a price below $2.88 if such issuance would breach our obligations under the Nasdaq Capital Market rules.

(2) As of March 24, 2010, 1,667,121 shares of the 4,500,000 shares available for purchase pursuant to the Purchase Agreement have been purchased by Fusion Capital for net proceeds of $5.1 million. An additional 2,832,879 of additional shares may be sold to Fusion Capital pursuant to the Purchase Agreement (not including the additional commitment fee shares).

(3) The denominator is based on 28,255,889 shares outstanding as of March 24, 2010, which includes the 1,900,083 shares previously issued to Fusion Capital (including 232,962 shares for the commitment fee). The denominator also includes the shares of common stock not yet issued and the corresponding additional pro rata commitment shares. The numerator is based on the number of shares issuable under the Purchase Agreement at the corresponding assumed purchase price set forth in the adjacent column. The changes in percentages relate solely to the number of additional commitment shares to be issued pro rata based on the amount of funding.

THE SELLING SHAREHOLDER

The following table presents information regarding the selling shareholder. Neither the selling shareholder nor any of its affiliates has held a position or office, or had any other material relationship, with us. However, in October 2008, we entered into a common stock purchase agreement with Fusion Capital, pursuant to which we sold an aggregate of 2,836,583 shares for total gross proceeds of $8,628,561. The agreement was terminated on May 27, 2009. The selling shareholder may elect to sell none, some or all of the shares offered under this prospectus and we cannot estimate the number of shares of common stock that the selling shareholder will beneficially own after termination of the sales under this prospectus. For purposes of the table below, we have assumed that, after completion of the offering, none of the shares covered by this prospectus will be held by the selling shareholder.

Selling Shareholder	Shares Beneficially Owned before Offering	Maximum Number of Shares Offered	Shares Beneficially Owned after Offering	Percentage of Shares Beneficially Owned after Offering(1)
Fusion Capital Fund II, LLC (2)	564,508	4,984,079(3)	382,978(3)	1.2%

(1) Applicable percentage of ownership is based on 28,255,889 shares of our common stock outstanding as of March 24, 2010, together with securities exercisable or convertible into shares of common stock within 60 days of March 24, 2010 for the selling shareholder and includes the 3,083,996 shares which are not presently issued. Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Shares of common stock are deemed to be beneficially owned by the person holding such securities for the purpose of computing the percentage of ownership of such person, but are not treated as outstanding for the purpose of computing the percentage ownership of any other person.

(2) Steven G. Martin and Joshua B. Scheinfeld, the principals of Fusion Capital, are deemed to be beneficial owners of all of the shares of common stock owned by Fusion Capital. Messrs. Martin and Scheinfeld have shared voting and disposition power over the shares being offered under this prospectus.

(3) We are electing to register hereby 4,984,079 shares in the aggregate, 2,832,879 shares which are not presently issued and which we may sell or issue to Fusion Capital at our discretion, 1,667,121 shares that we have issued to Fusion Capital for net proceeds of $5.1 million, 232,962 shares that we have issued to Fusion Capital as a commitment fee and 251,117 shares we may issue to Fusion Capital as an additional commitment fee pro rata as we receive the $30 million. Therefore, we may issue to Fusion Capital up to an additional 3,083,996 shares under the Purchase Agreement but Fusion Capital does not presently beneficially own those shares as determined in accordance with the rules of the SEC. Fusion has informed us that prior to entering into the Purchase Agreement Fusion Capital owned 382,978 of our shares that it previously acquired.

PLAN OF DISTRIBUTION

The common stock offered by this prospectus is being offered by Fusion Capital Fund II, LLC, or Fusion Capital, the selling shareholder. The common stock may be sold or distributed from time to time by the selling shareholder directly to one or more purchasers or through brokers, dealers, or underwriters who may act solely as agents at market prices prevailing at the time of sale, at prices related to the prevailing market prices, at negotiated prices, or at fixed prices, which may be changed. The sale of the common stock offered by this prospectus may be effected in one or more of the following methods:

- ordinary brokers' transactions;
- transactions involving cross or block trades;
- through brokers, dealers, or underwriters who may act solely as agents
- "at the market" into an existing market for the common stock;
- in other ways not involving market makers or established business markets, including direct sales to purchasers or sales effected through agents;
- in privately negotiated transactions;
- any combination of the foregoing; or
- in such other transactions as may be permitted by law.

In order to comply with the securities laws of certain states, if applicable, the shares may be sold only through registered or licensed brokers or dealers. In addition, in certain states, the shares may not be sold unless they have been registered or qualified for sale in the state or an exemption from the registration or qualification requirement is available and complied with.

Brokers, dealers, underwriters, or agents participating in the distribution of the shares as agents may receive compensation in the form of commissions, discounts, or concessions from the selling shareholder and/or purchasers of the common stock for whom the broker-dealers may act as agent. The compensation paid to a particular broker-dealer may be less than or in excess of customary commissions.

Fusion Capital is an "underwriter" within the meaning of the Securities Act.

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

We will pay all of the expenses incident to the registration, offering, and sale of the shares to the public other than commissions or discounts of underwriters, broker-dealers, or agents. We have also agreed to indemnify Fusion Capital and related persons against specified liabilities, including liabilities under the Securities Act.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers, and controlling persons, we have been advised that in the opinion of the SEC this indemnification is against public policy as expressed in the Securities Act and is therefore, unenforceable.

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

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

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

DESCRIPTION OF SECURITIES TO BE REGISTERED

The following description of our common stock and certain provisions of our restated articles of incorporation, as amended, or our charter, and bylaws is a summary and is qualified in its entirety by the provisions of our charter and bylaws.

Our authorized capital stock consists of 62,500,000 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 charter, which may be amended by the holders of a majority of the outstanding shares of common stock.

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 charter does not provide shareholders with the right to act without a meeting and does 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 charter 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.

MARKET PRICE OF COMMON EQUITY

Our common stock is traded on the Nasdaq Capital Market under the symbol “ASTM.” The following table sets forth the high and low sales prices for our common stock as reported on the Nasdaq Capital Market for the periods indicated, as adjusted to the nearest cent.

	High	Low
Year Ended June 30, 2010:		
Third quarter (through March 24, 2010)	$2.80	$1.40
Second quarter	$3.60	$1.92
First quarter	$4.72	$2.80

SELECTED FINANCIAL DATA

The statement of operations data for the years ended June 30, 2007, 2008 and 2009 and for the period from March 24, 1989 (Inception) to June 30, 2009 and the balance sheet data at June 30, 2008 and 2009, are derived from, and are qualified by reference to, the audited consolidated financial statements incorporated by reference in this prospectus and should be read in conjunction with those financial statements and notes thereto. The statement of operations data for the years ended June 30, 2005 and 2006, and the balance sheet data at June 30, 2005, 2006 and 2007, are derived from audited consolidated financial statements not included or incorporated by reference herein. The unaudited statement of operations data for the six-month periods ended December 31, 2009 and 2008 and for the period from March 24, 1989 (Inception) to December 31, 2009 and the unaudited balance sheet data at December 31, 2009 and 2008, are derived from, and are qualified by reference to, the unaudited consolidated financial statements incorporated by reference in this prospectus and should be read in conjunction with those financial statements and notes thereto.

The data set forth below are qualified by reference to, and should be read in conjunction with, the consolidated financial statements and notes thereto and "Management's Discussion and Analysis of Financial Condition and Results of Operations" set forth in our Annual Report on Form 10-K for the fiscal period ended June 30, 2009 and in our Quarterly Reports on Form 10-Q for the fiscal periods ended September 30, 2009 and December 31, 2009.

On February 18, 2010, we effected a one-for-eight reverse stock split of our common stock. Presented below is selected financial data, as if the reverse stock split was effective at these dates *(in thousands, except per share amounts):*

	Year ended June 30,					March 24, 1989 (Inception) to June 30, 2009
	2005	2006	2007	2008	2009	
Statement of Operations Data *(in thousands, except per share amounts):*						
Total revenues	$ 909	$ 863	$ 685	$ 522	$ 182	$ 13,523
Loss from operations	(12,417)	(17,733)	(19,469)	(21,219)	(16,169)	(206,244)
Net loss (1)	(11,811)	(16,475)	(17,594)	(20,133)	(15,946)	(194,855)
Net loss per common share (basic and diluted)	$ (1.01)	$ (1.24)	$ (1.18)	$ (1.24)	$ (0.89)	

	June 30,				
	2005	2006	2007	2008	2009
Balance Sheet Data *(in thousands)*:					
Total assets	$33,897	$44,881	$32,848	$26,217	$19,276
Long-term debt	—	—	1,536	1,229	784
Total shareholders' equity	33,028	42,342	28,251	23,334	17,284

(1) Net loss for fiscal years ended June 30, 2006, 2007, 2008 and 2009 included stock-based compensation expense under Financial Accounting Standards Board Statement No. 123(R), "Share-Based Payment," ("SFAS 123(R)") of $1.0, $2.8, $1.6 and $1.4 million, respectively, related to employee and director stock-based awards. For the year ended June 30, 2005, we accounted for stock-based awards to employees and directors in accordance with Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" ("APB 25") and its related interpretations, accordingly, we recognized no compensation expense for stock-based awards because the awards had time-based vesting and the exercise price equaled the fair market value of the underlying common stock on the date of grant. See Note 3 to our consolidated financial statements.

	Six Months Ended December 31, 2008 (Unaudited)	Six Months Ended December 31, 2009 (Unaudited)	March 24, 1989 (Inception)to December 31, 2009 (Unaudited)
Statement of Operations Data *(in thousands, except per share amounts):*			
Total revenues	$ 55	$ 89	$ 13,612
Loss from operations	(8,171)	(8,401)	(214,645)
Net loss	(8,016)	(8,376)	(203,231)
Net loss per common share (basic and diluted)	$ (0.48)	$ (0.40)	

	December 31, 2008 (Unaudited)	December 31, 2009 (Unaudited)
Balance Sheet Data *(in thousands)*:		
Total assets	$ 19,600	$ 16,624
Long-term debt	1,011	548
Total shareholders' equity	17,116	14,358

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, 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

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 and the included exhibits, financial statements and schedules. You are referred to the registration statement, the included exhibits, financial statements and schedules for further information. This information is qualified in its entirety by such other information.

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 SEC relating to our business, financial statements and other matters.

Reports and proxy and information statements filed under or pursuant to Sections 13(a), 14 and 15(d) of the Securities Exchange Act of 1934 and other information filed with the SEC as well as copies of the registration statement can be inspected and copied at the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC 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, in the “Investors” section of our website located at http://www.aastrom.com under the heading “Financial Information.” Except for those documents explicitly incorporated by reference herein, the information available on or through our website is not a part of this prospectus.

You should rely only on the information contained in this prospectus or the documents incorporated by reference. Neither we nor the selling shareholder has 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.

* * *

No dealer, salesperson, or other person has been authorized to give any information or to make any representation not contained in this prospectus, and, if given or made, such information and representation should not be relied upon as having been authorized by Aastrom Biosciences, Inc. or the selling shareholder. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any of the securities offered by this prospectus in any jurisdiction or to any person to whom it is unlawful to make such offer or solicitation. Neither the delivery of this prospectus nor any sale made hereunder shall under any circumstances create an implication that there has been no change in the facts set forth in this prospectus or in the affairs of Aastrom Biosciences, Inc. since the date hereof.

Table of Contents

4,984,079 SHARES

Aastrom

AASTROM BIOSCIENCES, INC.

COMMON STOCK

PROSPECTUS

APRIL 13, 2010