

ATHERSYS, INC / NEW
Form 424B5
January 26, 2017
Table of Contents

**Filed Pursuant to Rule 424(b)(5)
Registration No. 333-194538**

The information in this preliminary prospectus supplement and the accompanying prospectus is not complete and may be changed. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities or a solicitation of an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JANUARY 26, 2017

PRELIMINARY PROSPECTUS SUPPLEMENT

(To Prospectus dated March 27, 2014)

Shares

Common Stock

We are offering _____ shares of our common stock pursuant to this prospectus supplement and the accompanying prospectus.

Our common stock is listed on the NASDAQ Capital Market under the symbol ATHX. On January 25, 2017, the closing price of our common stock on the NASDAQ Capital Market was \$1.52 per share.

Investing in our common stock involves significant risk. Please read carefully the section entitled Risk Factors beginning on page S-3 of this prospectus supplement.

	Per Share	Total
Public Offering Price	\$	\$
Underwriting Discounts and Commissions ¹	\$	\$
Proceeds to Athersys, Inc. before expenses	\$	\$

(1) See Underwriting for additional information regarding underwriting compensation. Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriters may also purchase up to an additional _____ shares of common stock from us at the public offering price, less the underwriting discount, within 30 days from the date of this prospectus supplement.

Certain of our executive officers, directors and an affiliate of one of our directors, which is an existing stockholder, has indicated an interest in purchasing shares of our common stock in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters could determine to sell no shares to any of these potential purchasers, and any of these potential purchasers could determine to purchase no shares in this offering. The underwriters will receive the same underwriting discounts and commissions on any shares purchased by these parties as they will on any other shares sold to the public in this offering.

Delivery of the shares is expected to be made on or about _____, 2017.

Sole Book-Running Manager

William Blair

Lead Manager

Needham & Company

Edgar Filing: ATHERSYS, INC / NEW - Form 424B5

The date of this prospectus supplement is _____, 2017

Table of Contents

Table of Contents

Prospectus Supplement

<u>About This Prospectus Supplement</u>	S-ii
<u>Trademarks, Service Marks and Tradenames</u>	S-ii
<u>Cautionary Note Regarding Forward-Looking Statements</u>	S-iii
<u>Prospectus Supplement Summary</u>	S-1
<u>Risk Factors</u>	S-3
<u>Use of Proceeds</u>	S-4
<u>Dilution</u>	S-5
<u>Capitalization</u>	S-6
<u>Certain U.S. Federal Income Tax Considerations for Non-U.S. Holders</u>	S-7
<u>Underwriting</u>	S-11
<u>Legal Matters</u>	S-19
<u>Experts</u>	S-19
<u>Where You Can Find More Information</u>	S-20
<u>Information We Incorporate By Reference</u>	S-20

Prospectus

<u>About This Prospectus</u>	1
<u>Where You Can Find More Information</u>	1
<u>Information We Incorporate By Reference</u>	1
<u>The Company</u>	3
<u>Risk Factors</u>	3
<u>Cautionary Note Regarding Forward-Looking Statements</u>	3
<u>Use of Proceeds</u>	4
<u>Description of Common Stock</u>	5
<u>Description of Warrants</u>	6
<u>Plan of Distribution</u>	7
<u>Legal Matters</u>	9
<u>Experts</u>	9

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering. The second part is the accompanying prospectus, dated March 27, 2014, including the documents incorporated by reference therein, which provides more general information, some of which may not apply to this offering. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. If the description of this offering varies between this prospectus supplement and the accompanying prospectus, you should rely on the information in this prospectus supplement, which supersedes the information in the accompanying prospectus. This prospectus supplement contains information about the shares offered in this offering and may add, update or change information in the accompanying prospectus. Before you invest in any of the shares offered under this prospectus supplement, you should carefully read both this prospectus supplement and the accompanying prospectus together with additional information under the heading "Where You Can Find More Information" and "Information We Incorporate By Reference."

You should rely only on the information contained or incorporated by reference in this prospectus supplement and in the accompanying prospectus or any free writing prospectus that we may provide. We have not, and the underwriters have not, authorized anyone to provide you with different information. If anyone provides you with different or additional information, you should not rely on it. You should not assume that the information contained in this prospectus supplement, the accompanying prospectus, any free writing prospectus that we may provide or any document incorporated by reference is accurate as of any date other than the date mentioned on the cover page of these documents. We are not, and the underwriters are not, making offers to sell the shares in any jurisdiction in which an offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation.

References in this prospectus supplement and the accompanying prospectus to the terms "we," "us," "our," "Athersys" or "Company" or other similar terms mean Athersys, Inc. and its consolidated subsidiaries, unless we state otherwise or the context indicates otherwise.

TRADEMARKS, SERVICE MARKS AND TRADENAMES

This prospectus supplement, including the documents incorporate by reference herein, contains some of our trademarks, trade names and service marks, including the following: MultiStem[®], MAPC[®], RAGE[®], ReGenesys[®] and Athersys[®]. Each one of these trademarks, trade names or service marks is either (i) our registered trademark, (ii) a trademark for which we have a pending application, (iii) a trade name or service mark for which we claim common law rights or (iv) a registered trademark or application for registration which we have been licensed by a third party to use.

Solely for convenience, the trademarks, service marks and trade names referred to in this prospectus supplement may be without the [®] and symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensors to these trademarks, service marks and trade names.

Table of Contents

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, which are subject to the safe harbor created by those sections. These forward-looking statements relate to, among other things, the expected timetable for development of our product candidates, our growth strategy and our future financial performance, including our operations, economic performance, financial condition, prospects and other future events. We have attempted to identify forward-looking statements by using such words as anticipates, believes, can, continue, could, estimates, expects, forecasts, intends, may, plans, potential, should, suggest, will or other similar words. These forward-looking statements are not historical facts. They are only predictions and are largely based on our current expectations. These forward-looking statements appear in a number of places in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference.

In addition, a number of known and unknown risks, uncertainties and other factors could affect the accuracy of these statements. Some of the more significant known risks that we face that could cause actual results to differ materially from those implied by forward-looking statements are the risks and uncertainties inherent in the process of discovering, developing and commercializing products that are safe and effective for use as human therapeutics, including the uncertainty regarding market acceptance of our product candidates and our ability to generate revenues. These risks may cause our actual results, levels of activity, performance or achievements to differ materially from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements.

Other important factors to consider in evaluating our forward-looking statements include:

the timing and nature of results from our MultiStem cell therapy clinical trials, including the MultiStem Administration for Stroke Treatment and Enhanced Recovery Study-2, or MASTERS-2, Phase 3 clinical trial and the clinical trial in Japan being conducted by our collaborator, HEALIOS K.K., or Healios;

our ability to successfully initiate and complete clinical trials of our product candidates within and expected timeframe or at all;

the possibility of delays in, adverse results of, and excessive costs of the development process;

the productivity, reliability and availability of suppliers, including contract research and contract manufacturing organizations;

uncertainty regarding market acceptance of our product candidates and our ability to generate revenues, including MultiStem cell therapy for the treatment of stroke, acute myocardial infarction and acute respiratory distress syndrome, and other disease indications, including graft-versus-host disease;

our ability to raise capital to fund our operations;

the success of our efforts to enter into new strategic partnerships or collaborations and advance our programs;

the success of our collaboration with Healios and others, including our ability to reach milestone payments, and whether any products are successfully developed and sold so that we earn royalty payments;

our possible inability to realize commercially valuable discoveries in our collaborations with pharmaceutical and other biotechnology companies;

our collaborators' ability to continue to fulfill their obligations under the terms of our collaboration agreements;

our ability to protect and defend our intellectual property and related business operations, including the successful prosecution of our patent applications and enforcement of our patent rights, and operate our business in an environment of rapid technology and intellectual property development;

changes in our business strategy;

changes in external economic and market factors;

changes in our industry's overall performance; and

the success of our competitors and the emergence of new competitors.

Table of Contents

These factors and the other risk factors described in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference are not necessarily all of the important factors that could cause actual results to differ materially from those expressed in any of our forward-looking statements. Other unknown or unpredictable factors also could harm our results. Consequently, there can be no assurance that the actual results or developments anticipated by us will be realized or, even if substantially realized, that they will have the expected consequences to or effects on us. We cannot guarantee that any forward-looking statement will be realized, although we believe we have been prudent in our plans and assumptions. Achievement of future results is subject to risks, uncertainties and inaccurate assumptions.

We undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. You are advised, however, to consult any further disclosures we make on related subjects in our reports on Forms 10-K, 10-Q and 8-K filed with the Securities and Exchange Commission, or SEC.

S-iv

Table of Contents

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. This summary may not contain all of the information that you should consider before investing in our securities. We urge you to read this entire prospectus supplement, the accompanying prospectus and the documents incorporated by reference carefully, including the section entitled Risk Factors and the financial statements and other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus.

The Company

We are an international biotechnology company that is focused primarily in the field of regenerative medicine. We are committed to the discovery and development of best-in-class therapies designed to extend and enhance the quality of human life. We have established a portfolio of therapeutic product development programs to address significant unmet medical needs in multiple disease areas. Our MultiStem[®] cell therapy, a patented and proprietary allogeneic stem cell product, is our lead platform product and is currently in later-stage clinical development. Our current clinical development programs are focused on treating neurological conditions, cardiovascular disease, inflammatory and immune disorders and other conditions where the current standard of care is limited or inadequate for many patients. These represent major areas of clinical need, as well as substantial commercial opportunities.

Company Information

We were incorporated in Delaware on October 24, 1995. On June 8, 2007, we merged with a wholly owned subsidiary of BTHC VI, Inc., a Delaware corporation, and, on August 31, 2007, BTHC VI, Inc. changed its name to Athersys, Inc. Our headquarters are located at 3201 Carnegie Avenue, Cleveland, Ohio 44115. Our telephone number is (216) 431-9900. Our website is <http://www.athersys.com>. The information contained on or accessible through our website is not part of this prospectus supplement or the accompanying prospectus, other than documents that we file with the SEC that are incorporated by reference into this prospectus supplement and the accompanying prospectus.

Recent Developments

As of January 20, 2017, we had cash and cash equivalents of approximately \$13 million.

Table of Contents

The Offering

Common stock offered by us	shares (or shares if the underwriters exercise their option to purchase additional shares of common stock in full).
Common stock to be outstanding immediately after this offering ⁽¹⁾	shares (or shares if the underwriters exercise their option to purchase additional shares of common stock in full).
Use of proceeds	We currently intend to use the net proceeds from this offering for working capital and general corporate purposes, including funding towards our Phase 3 MASTERS-2 clinical study and our other ongoing clinical programs. See Use of Proceeds.
Risk factors	You should carefully read and consider the information set forth in Risk Factors beginning on page S-3 of this prospectus supplement before investing in our securities.
NASDAQ Capital Market symbol	ATHX.

(1) The number of shares of common stock to be outstanding after this offering is based on 85,798,369 shares of common stock outstanding as of November 30, 2016 and excludes the following, each as of November 30, 2016:

10,617,369 shares of common stock authorized and reserved for future issuance under outstanding awards under our equity incentive plans;

7,492,704 shares of common stock authorized and reserved for future issuance under our equity incentive plans;

1,893,527 shares of common stock that may be issued upon exercise of outstanding warrants; and

any shares of common stock that we have issued since November 30, 2016 or that we may issue to Aspire Capital Fund LLC, or Aspire Capital, pursuant to a common stock purchase agreement that we entered on December 17, 2015, referred to herein as the Aspire Purchase Agreement.

S-2

Table of Contents**RISK FACTORS**

*Investing in our common stock involves significant risk. Prior to making a decision about investing in our common stock, you should carefully consider the specific risk factors included below, as well as the risk factors discussed under the heading *Risk Factors* in our most recent annual report on Form 10-K and in our quarterly reports on Form 10-Q filed subsequently thereto, which are incorporated by reference in this prospectus supplement and the accompanying prospectus and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we may face. Additional risks and uncertainties not currently known to us or that we currently deem immaterial may also affect our operations. If any of these risks actually occurs, our business, results of operations and financial condition could suffer. In that case, the trading price of our common stock could decline, and you could lose all or a part of your investment.*

You will experience immediate and substantial dilution in the net tangible book value per share of the common stock you purchase.

Since the price per share of our common stock being offered is substantially higher than the net tangible book value per share of our common stock, you will suffer immediate and substantial dilution in the net tangible book value of the common stock you purchase in this offering. Based on the offering price of \$ per share, if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of approximately \$ per share in the net tangible book value of the common stock. See the section entitled *Dilution* in this prospectus supplement for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

We may not be able to utilize a significant portion of our net operating loss or research tax credit carryforwards or other tax attributes, which could harm our profitability.

At December 31, 2015, we had U.S. federal net operating loss and research and development tax credit carryforwards of approximately \$102,261,000 and \$4,277,000, respectively. Such operating losses and tax credits may be used to reduce future taxable income and tax liabilities and will expire at various dates between 2020 and 2036. We also had foreign net operating losses and foreign tax credit carryforwards of approximately \$12,724,000 and \$177,000, respectively. Such foreign operating losses do not expire and foreign tax credits will expire between 2016 and 2020. We also had state and city net operating loss carryforwards aggregating approximately \$53,657,000. Such operating losses may be used to reduce future taxable income and tax liabilities and will expire at various dates between 2016 and 2036.

The utilization of net operating loss and tax credit carryforwards generated prior to October 2012, or the Section 382 Limited Attributes, likely is substantially limited under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, as a result of our equity offering that occurred in October 2012. U.S. federal net operating loss carryforwards of \$65,633,000, research and development tax credits of \$4,277,000, and state and local net operating loss carryforwards of \$48,484,000 generated since 2012, as well as foreign net operating loss carryforwards of \$12,724,000 and foreign tax credits of \$177,000, which we refer to collectively as the Unlimited Attributes, are not subject to annual limitations. The Section 382 Limited Attributes may be used to reduce future taxable income and tax liabilities and will expire at various dates between 2016 and 2031.

Our ability to utilize the Unlimited Attributes also may be limited if we experience an ownership change. A Section 382 ownership change generally occurs if one or more stockholders or groups of stockholders who own at least 5% of our stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Similar rules may apply under state tax laws. This offering in

combination with future issuances or sales of our common stock (including certain transactions involving our common stock that are outside of our control) could cause an ownership change. If an ownership change occurs, Section 382 of the Code would impose an annual limit on the amount of pre-ownership change net operating loss carryforwards and other tax attributes (including our Unlimited Attributes) we can use to reduce our taxable income, potentially increasing and accelerating our liability for income taxes, and also potentially causing those tax attributes to expire unused. It is possible that such an ownership change could materially reduce our ability to use our net operating loss carryforwards or other tax attributes to offset taxable income, which could harm our profitability.

S-3

Table of Contents

USE OF PROCEEDS

We expect to receive net proceeds of approximately \$ million from the sale of shares of our common stock in this offering (or \$ million if the underwriters exercise their option to purchase additional shares of common stock in full) after deducting underwriting discounts and commissions and estimated offering expenses.

We currently intend to use the net proceeds from this offering for working capital and general corporate purposes, including funding towards our Phase 3 MASTERS-2 clinical study and our other ongoing clinical programs.

Pending the application of the net proceeds as described above, we may invest the net proceeds from this offering in short-term, investment grade, interest-bearing securities.

Table of Contents**DILUTION**

Investors in shares of our common stock offered in this offering will experience immediate and substantial dilution in the net tangible book value of their common stock from the public offering price of the common stock. The net tangible book value of our common stock as of September 30, 2016 was approximately \$16.0 million, or approximately \$0.19 per share of common stock. Net tangible book value per share of our common stock is calculated by subtracting our total liabilities from our total tangible assets, which is equal to total assets less intangible assets, and dividing this amount by the number of shares of common stock outstanding.

Dilution per share represents the difference between the public offering price per share of our common stock and the adjusted net tangible book value per share of our common stock included in this offering after giving effect to this offering. After giving effect to the sale of all of the shares of our common stock offered in this offering at the offering price of \$ per share, and after deducting the applicable underwriting discounts and commissions and our estimated offering expenses in connection with this offering, our net tangible book value as of September 30, 2016 would have been approximately \$ million, or approximately \$ per share of common stock. This change represents an immediate increase in the net tangible book value of \$ per share of common stock to our existing stockholders and an immediate and substantial dilution in net tangible book value of \$ per share of common stock to new investors. The following table illustrates this per share dilution:

Offering price per share		\$
Net tangible book value per share as of September 30, 2016	\$ 0.19	
Increase in net tangible book value per share attributable to new investors	\$	
Net tangible book value per share after this offering		\$
Dilution per share to new investors		\$ ()

The above information excludes the following, each as of September 30, 2016:

10,840,306 shares of common stock authorized and reserved for future issuance under outstanding awards under our equity incentive plans;

7,269,767 shares of common stock authorized and reserved for future issuance under our equity incentive plans;

1,893,527 shares of common stock that may be issued upon exercise of outstanding warrants; and

any shares of common stock that we have issued since September 30, 2016 or that we may issue in the future to Aspire Capital pursuant to the Aspire Purchase Agreement.

Table of Contents**CAPITALIZATION**

The following table shows our cash and cash equivalents and capitalization as of September 30, 2016:

on an actual basis; and

on an as adjusted basis to reflect the sale of _____ shares of our common stock offered in this offering, after deducting the applicable underwriting discounts and commissions and our estimated expenses in connection with this offering.

This table should be read in conjunction with our financial statements and the accompanying notes and Management's Discussion and Analysis of Financial Condition and Results of Operations contained in the annual, quarterly and other reports filed by us with the SEC, which are incorporated by reference in this prospectus supplement and the accompanying prospectus.

	As of September 30, 2016	
	Actual	As Adjusted
	(in thousands, except share data)	
Cash, cash equivalents and available-for-sale securities	\$ 19,379	\$
Warrant liabilities	\$ 2,134	\$
Stockholders' equity:		
Preferred stock, at stated value; 10,000,000 shares authorized, and no shares issued and outstanding at September 30, 2016, actual and as adjusted		
Common stock, \$0.001 par value; 150,000,000 shares authorized, and 85,498,369 shares issued and outstanding at September 30, 2016, actual, and _____ shares issued and outstanding at September 30, 2016, as adjusted	85	
Additional paid-in capital	327,092	
Accumulated deficit	(311,153)	
Total stockholders' equity	16,024	
Total capitalization	\$ 18,158	\$

Table of Contents

CERTAIN U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

General

The following is a summary of certain U.S. federal income tax considerations related to the ownership and disposition of our common stock by a non-U.S. holder, as defined below, that acquires our common stock pursuant to this offering. This discussion assumes that a non-U.S. holder will hold our common stock issued pursuant to this offering as a capital asset within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended (the Code) (generally, for investment purposes). This summary does not address all aspects of U.S. federal income taxation that may be relevant to a particular investor in light of the investor's individual circumstances, and does not purport to be a complete analysis of all the potential tax considerations relating thereto. In addition, this discussion does not address (i) other U.S. federal tax laws, such as estate and gift tax laws, (ii) state, local or non-U.S. tax consequences, (iii) the special tax rules that may apply to certain investors, including, without limitation, banks, insurance companies, financial institutions, controlled foreign corporations, passive foreign investment companies, broker-dealers, grantor trusts, personal holding companies, taxpayers who have elected mark-to-market accounting, tax-exempt entities, regulated investment companies, real estate investment trusts, entities or arrangements classified as partnerships for U.S. federal income tax purposes or other pass-through entities (or an investor in such entities or arrangements), pension plans or U.S. expatriates and former long-term residents of the United States, (iv) the special tax rules that may apply to an investor that acquires, holds or disposes of our common stock as part of a straddle, hedge, constructive sale, conversion or other integrated or risk reduction transaction or (v) the impact, if any, of the alternative minimum tax or the Medicare tax imposed on net investment income.

This summary is based on current provisions of the Code, applicable Treasury regulations promulgated thereunder, judicial opinions, and published rulings of the Internal Revenue Service (the IRS), all as in effect on the date of this prospectus supplement and all of which are subject to differing interpretations or change, possibly with retroactive effect. We have not sought, and will not seek, any ruling from the IRS or any opinion of counsel with respect to the tax consequences discussed herein, and there can be no assurance that the IRS will not take a position contrary to the tax consequences discussed below or that any position taken by the IRS would not be sustained.

As used in this discussion, the term U.S. person means a person that is, for U.S. federal income tax purposes, (i) a citizen or individual resident of the United States, (ii) a corporation created or organized (or treated as created or organized) in the United States or under the laws of the United States or any state thereof or the District of Columbia, (iii) an estate the income of which is subject to U.S. federal income taxation regardless of its source or (iv) a trust if (A) a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust, or (B) it has in effect a valid election under applicable Treasury regulations to be treated as a U.S. person. As used in this summary, the term non-U.S. holder means a beneficial owner of our common stock that is, for U.S. federal income tax purposes, an individual, corporation, estate or trust that is not a U.S. person.

The tax treatment of a partnership (or any other entity or arrangement treated as a partnership for U.S. federal income tax purposes) and each partner thereof will generally depend upon the status and activities of the partnership and such partner. A holder that is treated as a partnership for U.S. federal income tax purposes or a partner in such partnership should consult its own tax advisor regarding the U.S. federal income tax consequences applicable to it and its partners of the acquisition, ownership and disposition of our common stock.

THIS DISCUSSION IS ONLY A SUMMARY OF CERTAIN U.S. FEDERAL INCOME TAX CONSIDERATIONS RELATED TO THE OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK BY NON-U.S. HOLDERS. IT IS NOT TAX ADVICE. EACH PROSPECTIVE INVESTOR SHOULD

CONSULT ITS OWN TAX ADVISOR WITH RESPECT TO THE PARTICULAR TAX CONSEQUENCES OF THE ACQUISITION, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK, INCLUDING THE APPLICABILITY AND EFFECT OF ANY STATE, LOCAL AND NON-U.S. TAX LAWS, AS WELL AS U.S. FEDERAL ESTATE AND GIFT TAX LAWS AND ANY APPLICABLE TAX TREATY.

S-7

Table of Contents

Certain U.S. Federal Income Tax Considerations

Distributions on Common Stock

If we pay cash or distribute property to holders of shares of common stock, such distributions generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Distributions in excess of current and accumulated earnings and profits will constitute a return of capital that will be applied against and reduce (but not below zero) the non-U.S. holder's adjusted tax basis in our common stock. Any remaining excess will be treated as gain from the sale or exchange of the common stock and will be treated as described under **Gain on Sale, Exchange or Other Taxable Disposition of Common Stock** below.

Dividends paid to a non-U.S. holder that are not effectively connected with the non-U.S. holder's conduct of a trade or business in the United States generally will be subject to withholding of U.S. federal income tax at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty. A non-U.S. holder that wishes to claim the benefit of an applicable tax treaty withholding rate generally will be required to (i) duly complete and execute an IRS Form W-8BEN, an IRS Form W-8BEN-E or other applicable IRS Form W-8 (or any successor form of the foregoing) and certify under penalties of perjury that such holder is not a U.S. person and is eligible for the benefits of the applicable tax treaty or (ii) if our common stock is held through certain foreign intermediaries, satisfy the relevant certification requirements of applicable Treasury regulations. These forms may need to be periodically updated.

A non-U.S. holder eligible for a reduced rate of withholding of U.S. federal income tax pursuant to an income tax treaty may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. holders should consult their own tax advisors regarding their entitlement to benefits under an applicable income tax treaty and the manner of claiming the benefits of such treaty (including, without limitation, the need to obtain a U.S. taxpayer identification number).

Dividends that are effectively connected with a non-U.S. holder's conduct of a trade or business in the United States, and, if required by an applicable income tax treaty, attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States, generally are subject to U.S. federal income tax on a net income basis at the U.S. federal income tax rates generally applicable to a U.S. person and are not subject to withholding of U.S. federal income tax, provided that the non-U.S. holder establishes an exemption from such withholding by complying with certain certification and disclosure requirements. Any such effectively connected dividends (and, if required, dividends attributable to a U.S. permanent establishment or fixed base) received by a non-U.S. holder that is treated as a foreign corporation for U.S. federal income tax purposes may be subject to an additional branch profits tax at a 30% rate, or such lower rate as may be specified by an applicable income tax treaty.

Gain on Sale, Exchange or Other Taxable Disposition of Common Stock

Subject to the summary below regarding backup withholding and FATCA, any gain recognized by a non-U.S. holder on a sale or other taxable disposition of our common stock generally will not be subject to U.S. federal income tax, unless:

- (i) the gain is effectively connected with the conduct of a trade or business of the non-U.S. holder in the United States (and, if required by an applicable income tax treaty, is attributable to a U.S. permanent

establishment or fixed base of the non-U.S. holder);

(ii) the non-U.S. holder is an individual who is present in the United States for a period or periods aggregating 183 days or more in the taxable year of that disposition, and certain other conditions are met; or

(iii) we are or have been a United States real property holding corporation (a USRPHC) for U.S. federal income tax purposes at any time during the shorter of the five-year period ending on the date of disposition or the period that the non-U.S. holder held the common stock.

Any gain recognized by a non-U.S. holder that is described in clause (i) of the preceding paragraph generally will be subject to U.S. federal income tax at the income tax rates generally applicable to a U.S. person, and such non-U.S. holder will be required to file a U.S. federal income tax return. Such non-U.S. holders are urged to consult their tax advisors regarding the possible application of these rules. Any gain of a non-U.S. holder that is treated as a foreign corporation for U.S. federal income tax purposes that is described in clause (i) above may also be subject to an additional branch profits tax at a 30% rate, or such lower rate as may be specified by an applicable income tax treaty. An individual non-U.S. holder that is described in clause (ii) above generally will be subject to a flat 30% tax (or a lower applicable tax treaty rate) on the U.S.-source capital gain derived from the disposition,

Table of Contents

which may be offset by U.S.-source capital losses during the taxable year of the disposition. With respect to clause (iii) above, a U.S. corporation generally is a USRPHC if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. We believe that we are not currently and do not anticipate becoming a USRPHC. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a non-U.S. holder of our common stock will not be subject to U.S. federal income tax if our common stock is regularly traded on an established securities market and such non-U.S. holder holds or held (at times during the shorter of the five-year period ending on the date of disposition or the non-U.S. holder's holding period) 5% or less of our common stock. If a non-U.S. holder holds or held (at any time during the relevant period) more than 5% of our common stock and if we were a USRPHC at any time during the relevant period, such non-U.S. holder generally will be subject to U.S. federal income tax on the net gain derived from a taxable disposition at the income tax rates generally applicable to a U.S. person. Non-U.S. holders are urged to consult their own tax advisors regarding the potential applicability of these rules, as well as any income tax treaty in their particular circumstances.

Information Reporting and Backup Withholding

We generally must report annually to the IRS and to each non-U.S. holder of our common stock the amount of dividends paid to such holder on our common stock, the tax, if any, withheld with respect to those dividends and such holder's name and address. Copies of the information returns reporting those dividends and withholding may also be made available to the tax authorities in the country in which the non-U.S. holder is a resident under the provisions of an applicable income tax treaty or agreement. Information reporting also is generally required with respect to the proceeds from sales and other dispositions of our common stock to or through the U.S. office (and in certain cases, the foreign office) of a broker, unless the non-U.S. holder establishes that it is not a U.S. person.

Under some circumstances, Treasury regulations require backup withholding of U.S. federal income tax, currently at a rate of 28%, on reportable payments with respect to our common stock. A non-U.S. holder generally may eliminate the requirement for backup withholding by providing certification of its foreign status, under penalties of perjury, on a duly completed and executed IRS Form W-8BEN, IRS Form W-8BEN-E or other applicable IRS Form W-8 (or any successor form of the foregoing), or by otherwise establishing an exemption. Notwithstanding the foregoing, backup withholding and information reporting may apply if either we or our paying agent has actual knowledge, or reason to know, that a holder is a U.S. person. Backup withholding is not an additional tax. Rather, the amount of any backup withholding will be allowed as a credit against a non-U.S. holder's U.S. federal income tax liability, if any, and may entitle such non-U.S. holder to a refund, provided that certain required information is timely furnished to the IRS. Non-U.S. holders are urged to consult their own tax advisors regarding the application of backup withholding and the availability of and procedure for obtaining an exemption from backup withholding in their particular circumstances.

FATCA

The Foreign Account Tax Compliance Act provisions of the Hiring Incentives to Restore Employment Act and Treasury regulations thereunder, commonly referred to as FATCA, impose a U.S. federal withholding tax of 30% on certain types of payments, including payments of U.S.-source dividends and gross proceeds from the sale or other disposition of certain securities producing such U.S.-source dividends made to (i) foreign financial institutions unless they agree to collect and disclose to the IRS information regarding their direct and indirect U.S. account holders, and (ii) certain non-financial foreign entities unless they certify certain information regarding their direct and indirect U.S. owners. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules. Under applicable Treasury regulations, the withholding obligations described above generally apply to payments of U.S.-source dividends and, on or after January 1, 2019, will apply to payments of gross proceeds from a sale or other disposition of securities producing such

U.S.-source dividends. You are urged to consult your own tax advisors regarding FATCA and the application of these requirements to your investment in our common shares.

We will not pay any additional amounts to non-U.S. holders in respect of any amounts withheld, including pursuant to FATCA. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. Non-U.S. holders are urged to consult with their own tax advisors regarding the effect, if any, of the FATCA provisions to them based on their particular circumstances.

Table of Contents

THE PRECEDING DISCUSSION OF U.S. FEDERAL TAX CONSIDERATIONS IS FOR GENERAL INFORMATION ONLY. IT IS NOT TAX ADVICE. YOU SHOULD CONSULT YOUR OWN TAX ADVISOR REGARDING THE PARTICULAR U.S. FEDERAL, STATE AND LOCAL AND NON-U.S. TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAWS.

S-10

Table of Contents**UNDERWRITING**

William Blair & Company, L.L.C. is acting as representative of each of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of shares of our common stock set forth opposite its name below.

Name	Number of Shares
William Blair & Company, L.L.C.	
Needham & Company, LLC	
Total	

The underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated.

We have granted to the underwriters an option, exercisable for 30 calendar days from the date of this prospectus, to purchase up to additional shares of common stock at the public offering price listed on the cover of this prospectus supplement, less underwriting discounts and commissions. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase approximately the same percentage of the additional shares of common stock as the number listed next to such underwriter's name in the table above bears to the total number of shares of common stock listed next to the names of all underwriters in the above table. Any shares issued or sold under the option will be issued and sold on the same terms and conditions as the other shares that are the subject of this offering.

We have agreed to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act relating to losses or claims resulting from material misstatements in or omissions from this prospectus supplement, the registration statement of which this prospectus supplement is a part, certain free writing prospectuses that may be used in the offering and in any marketing materials used in connection with this offering and to contribute to payments the underwriters may be required to make in respect of those liabilities.

Certain of our executive officers, directors and an affiliate of one of our directors, which is an existing stockholder, has indicated an interest in purchasing shares of our common stock in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters could determine to sell no shares to any of these potential purchasers, and any of these potential purchasers could determine to purchase no shares in this offering. The underwriters will receive the same underwriting discounts and commissions on any shares purchased by these parties as they will on any other shares sold to the public in this offering.

Commissions and Discounts

The representative has advised us that the underwriters propose initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus supplement and to dealers at that price less a concession not in excess of \$ _____ per share. After the public offering, the public offering price, concession or any other term of this offering may be changed.

S-11

Table of Contents

The following table shows the public offering price, underwriting discount and proceeds before expenses to us. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares.

	Per Share	Without Option	With Option
Public offering price	\$	\$	\$
Underwriting discount			
Proceeds, before expenses, to us			

The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus supplement are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the shares of common stock offered by this prospectus supplement if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters' option to purchase additional shares described above. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the non-defaulting underwriters may be increased. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

The estimated offering expenses payable by us, exclusive of the underwriting discounts and commissions, are approximately \$0.5 million, which includes legal, accounting and printing costs and various other fees associated with the registration and listing of our common stock. We have also agreed to reimburse the underwriters for certain of their expenses in an amount up to \$100,000.

No Sales of Similar Securities

We have agreed with the underwriters, subject to specified exceptions not to (i) offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise transfer or dispose of, directly or indirectly, or file with the SEC a registration statement under the Act relating to, any shares of our common stock or any securities that are substantially similar to our common stock, including but not limited to any options or warrants to purchase shares of our common stock or any securities that are convertible into or exchangeable for, or that represent the right to receive, common stock or any such substantially similar securities, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing or (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of our common stock, or any such other securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of our common stock or such other securities, in cash or otherwise, without the prior written consent of the representative.

Our directors and executive officers have agreed with the underwriters, subject to specified exceptions, not to (i) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, make any short sale or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into, exercisable or exchangeable for or that represent the right to receive our common stock (including without limitation, our common stock which may be deemed to be beneficially owned in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant), whether now owned or hereafter acquired, or (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of our common stock, whether any such transaction is to be settled by delivery of our common stock or such other securities, in cash or otherwise. These restrictions will apply through and including the date that is 90 days

after the date of this prospectus supplement.

Listing

Our common stock is listed on the Nasdaq Capital Market under the symbol ATHX.

S-12

Table of Contents

Price Stabilization, Short Positions and Penalty Bids

Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing shares of our common stock. However, the representative may engage in transactions that stabilize the price of our common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with this offering, the underwriters may purchase and sell shares of our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in this offering. Covered short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising this option or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through this option. Naked short sales are sales in excess of this option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering. Stabilizing transactions consist of various bids for or purchases of shares of our common stock made by the underwriters in the open market prior to the closing of this offering.

The underwriters may also impose penalty bids. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representative has repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the Nasdaq Capital Market, in the over-the-counter market or otherwise.

Neither we nor any of the underwriters make 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 common stock. In addition, neither we nor any of the underwriters make any representation that the representative will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Offer, Sale and Distribution of Shares

In connection with this offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail. In addition, one or more of the underwriters may facilitate Internet distribution for this offering to certain of their Internet subscription customers. Any such underwriter may allocate a limited number of shares for sale to its online brokerage customers. An electronic prospectus is available on the Internet websites maintained by any such underwriter. Other than the prospectus in electronic format, the information on the websites of any such underwriter is not part of this prospectus.

Other Relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Certain of the underwriters and their affiliates may engage in from time to time in the future certain investment banking and other commercial dealings in the ordinary course of business with us or our affiliates, for which they have received and may continue to receive customary fees and commissions.

S-13

Table of Contents

In the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of the issuer. The underwriters and their respective affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Selling Restrictions

Canada

Resale Restrictions

The distribution of the shares of common stock in Canada is being made only in the provinces of Ontario, Quebec, Alberta and British Columbia on a private placement basis exempt from the requirement that we and the selling stockholders prepare and file a prospectus with the securities regulatory authorities in each province where trades of these securities are made. Any resale of the shares of common stock in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the securities.

Representations of Canadian Purchasers

By purchasing the shares of common stock in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us, the selling stockholders and the dealer from whom the purchase confirmation is received that:

the purchaser is entitled under applicable provincial securities laws to purchase the shares of common stock without the benefit of a prospectus qualified under those securities laws as it is an accredited investor as defined under National Instrument 45-106 Prospectus Exemptions,

the purchaser is a permitted client as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations,

where required by law, the purchaser is purchasing as principal and not as agent, and

the purchaser has reviewed the text above under Resale Restrictions.

Conflicts of Interest

Canadian purchasers are hereby notified that the underwriter is relying on the exemption set out in section 3A.3 or 3A.4, if applicable, of National Instrument 33-105 *Underwriting Conflicts* from having to provide certain conflict of interest disclosure in this document.

Statutory Rights of Action

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if the offering memorandum (including any amendment thereto) such as this document contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser of these securities in Canada should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

S-14

Table of Contents

Enforcement of Legal Rights

All of our directors and officers as well as the experts named herein and the selling stockholders may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

Taxation and Eligibility for Investment

Canadian purchasers of the shares of common stock should consult their own legal and tax advisors with respect to the tax consequences of an investment in the shares of common stock in their particular circumstances and about the eligibility of the shares of common stock for investment by the purchaser under relevant Canadian legislation.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State) an offer to the public of any shares of our common stock may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any shares of our common stock may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representative for any such offer; or
- (c) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares of our common stock shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an offer to the public in relation to any shares of our common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of our common stock to be offered so as to enable an investor to decide to purchase any shares of our common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression Prospectus Directive means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State, and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

United Kingdom

Each underwriter has represented and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, or the FSMA) received by it in connection with the issue or sale of the shares of our common stock in circumstances in which Section 21(1) of the FSMA does not apply to us; and
- (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares of our common stock in, from or otherwise involving the United Kingdom.

S-15

Table of Contents

Hong Kong

The common stock has not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong), or (ii) to professional investors within the meaning of the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a prospectus within the meaning of the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong). No advertisement, invitation or document relating to the common stock has been or may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to common stock which is or is intended to be disposed of only to persons outside Hong Kong or only to professional investors within the meaning of the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) and any rules made thereunder.

Singapore

This prospectus has not been, and will not be, registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the common stock may not be circulated or distributed, nor may the common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined in Section 4A of the Securities and Futures Act, Chapter 289 of Singapore (the SFA)) pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to compliance with conditions set forth in the SFA.

Where the common stock is subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor, securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the common stock pursuant to an offer made under Section 275 of the SFA except:
 - (a) to an institutional investor pursuant to Section 274 of the SFA or to a relevant person pursuant to Section 275(1) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or

Section 276(4)(i)(B) of the SFA;

- (b) where no consideration is or will be given for the transfer;
- (c) where the transfer is by operation of law;
- (d) as specified in Section 276(7) of the SFA; or
- (e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

S-16

Table of Contents

Switzerland

The common stock may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or the SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the common stock or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, or the common stock have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of common stock will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of common stock has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. Accordingly, no public distribution, offering or advertising, as defined in CISA, its implementing ordinances and notices, and no distribution to any non-qualified investor, as defined in CISA, its implementing ordinances and notices, shall be undertaken in or from Switzerland, and the investor protection afforded to acquirers of interests in collective investment schemes under CISA does not extend to acquirers of common stock.

United Arab Emirates

This offering has not been reviewed, approved or licensed by the Central Bank of the United Arab Emirates (the UAE), the Emirates Securities and Commodities Authority of the UAE (the SCA) and/or any other relevant licensing authority in the UAE including any licensing authority incorporated under the laws and regulations of any of the free zones established and operating in the territory of the UAE (the Free Zones), in particular the Dubai Financial Services Authority (the DFSA), a regulatory authority of the Dubai International Financial Centre (DIFC) or the Financial Services Regulatory Authority (the FSRA), a regulatory authority of Abu Dhabi Global Market (ADGM).

This offering is not intended to, and does not, constitute an offer, sale or delivery of shares or other securities under the laws of the UAE. The common stock has not been and will not be registered with or licensed by the SCA or with the UAE Central Bank, the Dubai Financial Market, the Abu Dhabi Securities Exchange or with any other UAE regulatory authority or exchange.

The issue and/or sale of the common stock has not been approved or licensed by the SCA, the UAE Central Bank or any other relevant licensing authority in the UAE, and does not constitute a public offer of securities in the UAE, DIFC, ADGM and/or any other Free Zone in accordance with the Commercial Companies Law, Federal Law No 2 of 2015 (as amended), the Markets Rules of the DFSA, (the DFSA Markets Rules), the Markets Rules of the FSRA (the FSRA Markets Rules) and/or Nasdaq Dubai Listing Rules or under any other law of the UAE. The common stock may not be offered to the public in the UAE and/or any of the Free Zones.

No marketing or promotion of the common stock has been or will be made from within the UAE and no sale of or subscription for the common stock may or will be consummated within the UAE. It should not be assumed that Athersys Inc, Athersys Inc's advisors, their advisors or any other person is a licensed broker, dealer or investment adviser under the laws of the UAE or that they advise as to the appropriateness of investing in or purchasing or selling securities or other financial products.

This offering is not intended to constitute a financial promotion, an offer, sale or delivery of shares or other securities under the DIFC Markets Law (DIFC Law No. 1 of 2012, as amended) (the Markets Law), the DFSA Markets Rules, the Collective Investment Law 2010 (DIFC Law No. 2 of 2010) (the Collective Investment Law), the ADGM Financial Services and Markets Regulations 2015 (the FSMR), the FSRA Markets Rules, the Funds Rules of the FSRA (FSRA Funds Rules), or any other laws and regulations of the DIFC, the DFSA, ADGM or the FSRA.

S-17

Table of Contents

This offering and the issue or transfer of any securities related to it have not been approved or licensed by the DFSA, and do not constitute an offer of securities in the DIFC in accordance with the Markets Law or the DFSA Markets Rules or the Collective Investment Law or any other laws and regulations of the DIFC or the DFSA. This offering and the issue or transfer of any securities related to it have not been approved or licensed by the FSRA, and do not constitute an offer of securities in ADGM in accordance with the FSMR or the FSRA Markets Rules or the FSRA Funds Rules or any other laws and regulations of ADGM or the FSRA.

France

This prospectus (including any amendment, supplement or replacement thereto) is not being distributed in the context of a public offering of financial instruments (*offre au public de titres financiers*) in France within the meaning of Article L. 411-1 of the French Monetary and Financial Code (*Code monétaire et financier*) and Articles 211-1 *et seq.* of the General Regulations of the French *Autorité des marchés financiers* (the AMF). The common stock have not been offered or sold and will not be offered or sold, directly or indirectly, to the public in France.

This prospectus and any other offering material relating to the common stock have not been, and will not be, submitted to the AMF for approval in France and, accordingly, may not and will not be distributed or caused to be distributed, directly or indirectly, to the public in France.

Pursuant to Article 211-3 of the AMF General Regulations, French residents are hereby informed that:

- (a) the transaction does not require a prospectus to be submitted for approval to the AMF;
- (b) the offer, sale and distribution of the financial instruments shall only be made in France to (i) qualified investors (*investisseurs qualifiés*) acting for their own account, as defined in and in accordance with Articles L. 411-2-II-2° and D. 411-1, D. 411-2, D. 734-1, D. 744-1, D. 754-1 and D. 764-1 of the French Monetary and Financial Code and any implementing regulation and/or (ii) a restricted number of non-qualified investors (*investisseurs non-qualifiés*) acting for their own account, as defined in and in accordance with Articles L. 411-2-II-2° and D. 411-4, D. 734-1, D. 744-1, D. 754-1 and D. 764-1 of the French Monetary and Financial Code and any implementing regulation; and
- (c) the financial instruments thus acquired cannot be distributed, directly or indirectly, to the public otherwise than in accordance with Articles L. 411-1, L. 411-2, L. 412-1 and L. 621-8 to L. 621-8-3 of the French Monetary and Financial Code.

This prospectus is not to be further distributed or reproduced (in whole or in part) in France by the recipients of this prospectus. This prospectus has been distributed on the understanding that such recipients will only participate in the issue or sale of our common stock for their own account and undertake not to transfer, directly or indirectly, our common stock to the public in France, other than in compliance with all applicable laws and regulations and in particular with Articles L. 411-1 and L. 411-2 of the French Monetary and Financial Code and Articles 211-1 *et seq.* of the AMF General Regulations.

Notice to Prospective Investors in Israel

This document does not constitute a prospectus under Israeli Securities Law, and has not been filed with or approved by the Israeli Securities Authority. In Israel, this prospectus supplement and the accompanying prospectus may be distributed only to, and directed only at, investors listed in the first addendum, or the Addendum, to Israel's Securities Law, 5728-1968. Institutional investors are required to submit written confirmation that they fall within the scope of the Addendum. In addition, we may distribute and direct this prospectus supplement and the accompanying prospectus in Israel, at our sole discretion, to certain other exempt investors or to investors who do not qualify as institutional or exempt investors, provided that the number of such non-qualified investors in Israel shall be no greater than 35 in any 12-month period.

S-18

Table of Contents

LEGAL MATTERS

The validity of the issuance of the securities offered in this offering has been passed upon for us by Jones Day. Latham & Watkins LLP, Chicago, Illinois, acted as counsel to the underwriters in connection with this offering. Certain attorneys of Latham & Watkins LLP beneficially own, in the aggregate, less than one percent (1%) of our common stock.

EXPERTS

The consolidated financial statements of Athersys, Inc. appearing in Athersys, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2015, including the schedule appearing therein, and the effectiveness of Athersys, Inc.'s internal control over financial reporting as of December 31, 2015, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational reporting requirements of the Exchange Act. We file reports, proxy statements and other information with the SEC. Our SEC filings are available over the Internet at the SEC's website at <http://www.sec.gov>. You may read and copy any reports, statements and other information filed by us at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call 1-800-SEC-0330 for further information on the Public Reference Room.

We make available, free of charge, on our website at <http://www.athersys.com>, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports and statements as soon as reasonably practicable after they are filed with the SEC. The contents of our website are not part of this prospectus supplement or the accompanying prospectus, and the reference to our website does not constitute incorporation by reference into this prospectus supplement or the accompanying prospectus of the information contained at that site, other than documents we file with the SEC that are incorporated by reference into this prospectus supplement and the accompanying prospectus.

INFORMATION WE INCORPORATE BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus supplement and the accompanying prospectus the information in documents 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 a part of this prospectus supplement and the accompanying prospectus, and information that we file later with the SEC will automatically update and supersede this information. Any statement contained in any document incorporated or deemed to be incorporated by reference in this prospectus supplement and the accompanying prospectus shall be deemed to be modified or superseded to the extent that a statement contained in or omitted from this prospectus supplement or the accompanying prospectus, or in any other subsequently filed document that also is or is deemed to be incorporated by reference, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement or the accompanying prospectus.

We incorporate by reference the documents listed below and any future documents that we file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement:

our Annual Report on Form 10-K for the year ended December 31, 2015;

our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2016, June 30, 2016 and September 30, 2016;

our Current Reports on Form 8-K filed on January 13, 2016, April 22, 2016, June 22, 2016, September 12, 2016, September 28, 2016 and January 13, 2017; and

the description of our common stock set forth in the registration statement on Form 8-A filed on December 6, 2007, and all amendments and reports filed for the purpose of updating that description.

We will not, however, incorporate by reference in this prospectus supplement or the accompanying prospectus any documents or portions thereof that are not deemed filed with the SEC, including any information furnished pursuant to Item 2.02 or Item 7.01 of our current reports on Form 8-K unless, and except to the extent, specified in such current reports.

We will provide you with a copy of any of these filings (other than an exhibit to these filings, unless the exhibit is specifically incorporated by reference into the filing requested) at no cost if you submit a request to us by writing or telephoning us at the following address and telephone number:

Athersys, Inc.

3201 Carnegie Avenue

Cleveland, Ohio 44115-2634

(216) 431-9900

Attn: Secretary

S-20

Table of Contents

PROSPECTUS

20,000,000 Shares

Common Stock

Warrants

We may from time to time issue up to 20,000,000 shares of our common stock and/or warrants to purchase such common stock in one or more offerings.

We will provide the specific terms of the securities to be offered in one or more supplements to this prospectus. You should read this prospectus and the applicable prospectus supplement carefully before you invest in our securities. This prospectus may not be used to offer and sell our securities unless accompanied by a prospectus supplement describing the method and terms of the offering of those offered securities.

We may sell the securities directly or to or through underwriters or dealers, and also to other purchasers or through agents. The names of any underwriters or agents that are included in a sale of securities to you, and any applicable commissions or discounts, will be stated in an accompanying prospectus supplement. In addition, the underwriters, if any, may over-allot a portion of the securities.

Investing in any of our securities involves risk. Please read carefully the section entitled Risk Factors beginning on page 3 of this prospectus.

Our common stock is listed on the NASDAQ Capital Market under the symbol ATHX.

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 March 27, 2014

Table of Contents

TABLE OF CONTENTS

	Page
<u>About This Prospectus</u>	1
<u>Where You Can Find More Information</u>	1
<u>Information We Incorporate By Reference</u>	1
<u>The Company</u>	3
<u>Risk Factors</u>	3
<u>Cautionary Note Regarding Forward-Looking Statements</u>	3
<u>Use of Proceeds</u>	4
<u>Description of Common Stock</u>	5
<u>Description of Warrants</u>	6
<u>Plan of Distribution</u>	7
<u>Legal Matters</u>	9
<u>Experts</u>	9

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, using a shelf registration process. Under this shelf process, we may from time to time sell up to 20,000,000 shares of our common stock and/or warrants to purchase such common stock in one or more offerings.

This prospectus provides you with 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. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with additional information under the heading **Where You Can Find More Information** and **Information We Incorporate By Reference**.

You should rely only on the information contained or incorporated by reference in this prospectus and in any prospectus supplement or in any free writing prospectus that we may provide you. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. You should not assume that the information contained in this prospectus, any prospectus supplement, any document incorporated by reference or any free writing prospectus is accurate as of any date, other than the date mentioned on the cover page of these documents. We are not making offers to sell the securities in any jurisdiction in which an offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation.

References in this prospectus to the terms **we**, **us**, **Athersys** or **the Company** or other similar terms mean Athersys, Inc. and its consolidated subsidiaries, unless we state otherwise or the context indicates otherwise.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational reporting requirements of the Securities Exchange Act of 1934. We file reports, proxy statements and other information with the SEC. Our SEC filings are available over the Internet at the SEC's website at <http://www.sec.gov>. You may read and copy any reports, statements and other information filed by us at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call 1-800-SEC-0330 for further information on the Public Reference Room.

We make available, free of charge, on our website at <http://www.athersys.com>, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports and statements as soon as reasonably practicable after they are filed with the SEC. The contents of our website are not part of this prospectus, and the reference to our website does not constitute incorporation by reference into this prospectus of the information contained at that site, other than documents we file with the SEC that are incorporated by reference into this prospectus.

INFORMATION WE INCORPORATE BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus the information in documents 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 a part of this prospectus, and information that we file

Table of Contents

later with the SEC will automatically update and supersede this information. Any statement contained in any document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in or omitted from this prospectus or any accompanying prospectus supplement, or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We incorporate by reference the documents listed below and any future documents that we file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (1) after the date of the initial filing of the registration statement of which this prospectus forms a part prior to the effectiveness of the registration statement and (2) after the date of this prospectus until the offering of the securities is terminated.

our annual report on Form 10-K for the year ended December 31, 2013;

our current reports on Form 8-K filed on January 13, 2014, January 15, 2014 and January 21, 2014; and

the description of our common stock set forth in the registration statement on Form 8-A filed on December 6, 2007, and all amendments and reports filed for the purpose of updating that description.

We will not, however, incorporate by reference in this prospectus any documents or portions thereof that are not deemed filed with the SEC, including any information furnished pursuant to Item 2.02 or Item 7.01 of our current reports on Form 8-K unless, and except to the extent, specified in such current reports.

We will provide you with a copy of any of these filings (other than an exhibit to these filings, unless the exhibit is specifically incorporated by reference into the filing requested) at no cost, if you submit a request to us by writing or telephoning us at the following address and telephone number:

Athersys, Inc.

3201 Carnegie Avenue

Cleveland, Ohio 44115-2634

(216) 431-9900

Attn: Secretary

Table of Contents

THE COMPANY

We are an international biotechnology company that is focused primarily in the field of regenerative medicine. We are committed to the discovery and development of best-in-class therapies designed to extend and enhance the quality of human life. We have established a portfolio of therapeutic product development programs to address significant unmet medical needs in multiple disease areas. Our MultiStem[®] cell therapy, a patented and proprietary allogeneic stem cell product, is our lead platform product and has been evaluated in two completed Phase 1 clinical trials and is currently being evaluated in two ongoing Phase 2 clinical trials, as well as an investigator-led Phase 1 trial. Our current clinical development programs are focused on treating inflammatory & immune disorders, neurological conditions, cardiovascular disease, and other conditions. We are also applying our pharmaceutical discovery capabilities to identify and develop small molecule compounds with potential applications in indications such as obesity, related metabolic conditions and certain neurological conditions. These represent major areas of clinical need, as well as substantial commercial opportunities.

Corporate Information

We are incorporated in Delaware and our headquarters are located at 3201 Carnegie Avenue, Cleveland, Ohio 44115. Our telephone number is (216) 431-9900. Our website is <http://www.athersys.com>. The information accessible through our website is not part of this prospectus, other than the documents that we file with the SEC that are incorporated by reference into this prospectus.

RISK FACTORS

Investing in our securities involves risk. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed under the heading **Risk Factors** in our most recent annual report on Form 10-K and in our most recent quarterly reports on Form 10-Q, which are incorporated herein by reference and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations. If any of these risks actually occurs, our business, results of operations and financial condition could suffer. In that case, the trading price of our securities could decline, and you could lose all or a part of your investment.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the documents incorporated by reference, contains, and any prospectus supplement may contain, forward-looking statements that represent our beliefs, projections and predictions about future events or our future performance. You can identify forward-looking statements by terminology such as *may*, *will*, *would*, *could*, *should*, *expect*, *intend*, *plan*, *anticipate*, *believe*, *potential*, *continue* or the negative of these terms or other similar expressions or phrases. These forward-looking statements are necessarily subjective and involve known and unknown risks, uncertainties and other important factors that could cause our actual results, level of activity, performance, achievement or industry results to differ materially from any future results, levels of activity, performance or achievements described in or implied by these forward-looking statements.

Factors that may cause actual results to differ materially from expected results described in forward-looking statements include, but are not limited to:

our ability to raise capital to fund our operations;

the timing of the results of Pfizer's Phase 2 clinical study involving MultiStem cell therapy to ulcerative colitis patients;

Table of Contents

final results from our MultiStem clinical trials;

the possibility of delays in, adverse results of, and excessive costs of the development process;

our ability to successfully initiate and complete clinical trials of our product candidates;

uncertainty regarding market acceptance of our product candidates and our ability to generate revenues, including MultiStem cell therapy for the prevention of graft-versus-host disease and the treatment of inflammatory bowel disease, acute myocardial infarction, stroke and other disease indications;

changes in external market factors;

changes in our industry's overall performance;

changes in our business strategy;

our ability to protect and defend our intellectual property and related business operations, including the successful prosecution of our patent applications and enforcement of our patent rights, and operate our business in an environment of rapid technology and intellectual property development;

our possible inability to realize commercially valuable discoveries in our collaborations with pharmaceutical and other biotechnology companies;

our ability to meet milestones under our collaboration agreements;

our collaborators' ability to continue to fulfill their obligations under the terms of our collaboration agreement;

the success of our efforts to enter into new strategic partnerships and advance our programs, including, without limitation, in Japan;

our possible inability to execute our strategy due to changes in our industry or the economy generally;

changes in productivity and reliability of suppliers; and

the success of our competitors and the emergence of new competitors.

Any forward-looking statement you read in this prospectus, any prospectus supplement or any document incorporated by reference reflects our current views with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to our operations, operating results, growth strategy and liquidity. You should not place undue reliance on these forward-looking statements because such statements speak only as to the date when made. We assume no obligation to publicly update or revise these forward-looking statements for any

reason, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future, except as otherwise required by applicable law. You are advised, however, to consult any further disclosures we make on related subjects in our reports on Forms 10-Q, 8-K and 10-K furnished to the SEC. You should understand that it is not possible to predict or identify all risk factors. Consequently, you should not consider any such list to be a complete set of all potential risks or uncertainties.

Any document incorporated by reference or any prospectus supplement may also contain statistical data and estimates we obtained from industry publications and reports generated by third parties. Although we believe that the publications and reports are reliable, we have not independently verified their data.

USE OF PROCEEDS

Unless we inform you otherwise in the applicable prospectus supplement, we expect to use the net proceeds from the sale of securities for general corporate purposes, including, but not limited to, research and development costs, payment obligations and capital expenditures. Pending any specific application, we may initially invest funds in debt instruments of the U.S. government and its agencies, corporate debt securities, floating-rate notes and A1+/P1 commercial paper.

Table of Contents

DESCRIPTION OF COMMON STOCK

We are authorized to issue 150,000,000 shares of common stock, par value \$0.001 per share, and 10,000,000 shares of preferred stock, par value \$0.001 per share.

Common Stock

This section describes the general terms and provisions of our common stock. For more detailed information, you should refer to our Certificate of Incorporation and Bylaws, copies of which have been filed with the SEC. These documents are also incorporated by reference into the registration statement of which this prospectus forms a part.

Holders of shares of common stock will be entitled to receive dividends if and when declared by the board of directors from funds legally available therefor, and, upon liquidation, dissolution or winding-up of our company, will be entitled to share ratably in all assets remaining after payment of liabilities. The holders of shares of common stock will not have any preemptive rights, but will be entitled to one vote for each share of common stock held of record. Stockholders will not have the right to cumulate their votes for the election of directors. The shares of common stock offered hereby, when issued, will be fully paid and nonassessable.

Preferred Stock

This section describes the general terms and provisions of our preferred stock. For more detailed information, you should refer to our Certificate of Incorporation and Bylaws, copies of which have been filed with the SEC. These documents are also incorporated by reference into the registration statement of which this prospectus forms a part.

Our board of directors is authorized, without action by our stockholders, to designate and issue up to 10,000,000 shares of preferred stock, par value \$0.001 per share, in one or more series. The board of directors can fix the rights, preferences and privileges of the shares of each series and any of its qualifications, limitations or restrictions. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of common stock. The issuance of preferred stock, while providing flexibility in connection with possible future financings, acquisitions and other corporate purposes could, under certain circumstances, have the effect of delaying, deferring or preventing a change in control of us and could adversely affect the market price of our common stock. We do not have any shares of preferred stock outstanding, and we have no current plans to issue any preferred stock.

Transfer Agent and Registrar

We have appointed Computershare Investor Services as the transfer agent and registrar for our common stock.

Listing

Our common stock is listed on the NASDAQ Capital Market under the symbol ATHX.

Table of Contents

DESCRIPTION OF WARRANTS

General

We may issue warrants for the purchase of shares of common stock. The following description sets forth certain general terms and provisions of the warrants that we may offer pursuant to this prospectus. The particular terms of the warrants and the extent, if any, to which the general terms and provisions may apply to the warrants so offered will be described in the applicable prospectus supplement.

Warrants may be issued independently or together with shares of common stock and may be attached to or separate from any shares of common stock. Each series of warrants may be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants and will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants.

A copy of the forms of the warrant agreement and the warrant certificate relating to any particular issue of warrants will be filed with the SEC each time we issue warrants, and you should read those documents for provisions that may be important to you. For more information on how you can obtain copies of the forms of the warrant agreement and the related warrant certificate, see [Where You Can Find More Information](#).

Common Stock Warrants

The prospectus supplement relating to a particular issue of warrants to issue shares of common stock will describe the terms of the common stock warrants, including the following:

the title of the warrants;

the offering price for the warrants, if any;

the aggregate number of the warrants;

if applicable, the date from and after which the warrants and the common stock issued with the warrants will be separately transferable;

the number of shares of common stock that may be purchased upon exercise of a warrant and the price at which the shares may be purchased upon exercise;

the dates on which the right to exercise the warrants commence and expire;

if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;

the currency or currency units in which the offering price, if any, and the exercise price are payable;

if applicable, a discussion of material United States federal income tax considerations;

anti-dilution provisions of the warrants, if any;

redemption or call provisions, if any, applicable to the warrants;

any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants; and

any other information we think is important about the warrants.

Exercise of Warrants

Each warrant will entitle the holder of the warrant to purchase at the exercise price set forth in the applicable prospectus supplement the shares of common stock being offered. Holders may exercise warrants at any time up to the close of business on the expiration date set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants are void. Holders may exercise warrants as set forth in the prospectus supplement relating to the warrants being offered.

Until a holder exercises the warrants to purchase our shares of common stock, the holder will not have any rights as a holder of our common stock by virtue of ownership of warrants.

Table of Contents

PLAN OF DISTRIBUTION

We may sell the offered securities in and outside the United States:

through underwriters or dealers;

directly to purchasers;

in a rights offering;

in at the market offerings, within the meaning of Rule 415(a)(4) of the Securities Act, to or through a market maker or into an existing trading market on an exchange or otherwise;

through agents; or

through a combination of any of these methods.

The prospectus supplement will include the following information:

the terms of the offering;

the names of any underwriters or agents;

the name or names of any managing underwriter or underwriters;

the purchase price or initial public offering price of the securities;

the net proceeds from the sale of the securities;

any delayed delivery arrangements;

any underwriting discounts, commissions and other items constituting underwriters' compensation;

any discounts or concessions allowed or reallocated or paid to dealers; and

any commissions paid to agents.

Sale through Underwriters or Dealers

If underwriters are used in the sale, the underwriters will acquire the securities for their own account. The underwriters may resell the securities from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Underwriters may offer securities to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. Unless we inform you otherwise in the prospectus supplement, the obligations of the underwriters to purchase the securities will be subject to certain conditions, and the underwriters will be obligated to purchase all the offered securities if they purchase any of them. The underwriters may change from time to time any initial public offering price and any discounts or concessions allowed or reallocated or paid to dealers.

During and after an offering through underwriters, the underwriters may purchase and sell the securities in the open market. These transactions may include over-allotment and stabilizing transactions and purchases to cover syndicate short positions created in connection with the offering. The underwriters may also impose a penalty bid, which means that selling concessions allowed to syndicate members or other broker-dealers for the offered securities sold for their account may be reclaimed by the syndicate if the offered securities are repurchased by the syndicate in stabilizing or covering transactions. These activities may stabilize, maintain or otherwise affect the market price of the offered securities, which may be higher than the price that might otherwise prevail in the open market. If commenced, the underwriters may discontinue these activities at any time.

Table of Contents

If dealers are used in the sale of securities, we will sell the securities to them as principals. They may then resell those securities to the public at varying prices determined by the dealers at the time of resale. We will include in the prospectus supplement the names of the dealers and the terms of the transaction.

Direct Sales and Sales through Agents

We may sell the securities directly. In this case, no underwriters or agents would be involved. We may also sell the securities through agents designated from time to time. In the prospectus supplement, we will name any agent involved in the offer or sale of the offered securities, and we will describe any commissions payable to the agent. Unless we inform you otherwise in the prospectus supplement, any agent will agree to use its reasonable best efforts to solicit purchases for the period of its appointment.

We may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of those securities. We will describe the terms of any sales of these securities in the prospectus supplement.

Remarketing Arrangements

Offered securities may also be offered and sold, if so indicated in the applicable prospectus supplement, in connection with a remarketing upon their purchase, in accordance with a redemption or repayment pursuant to their terms, or otherwise, by one or more remarketing firms, acting as principals for their own accounts or as agents for us. Any remarketing firm will be identified and the terms of its agreements, if any, with us and its compensation will be described in the applicable prospectus supplement.

Delayed Delivery Contracts

If we so indicate in the prospectus supplement, we may authorize agents, underwriters or dealers to solicit offers from certain types of institutions to purchase securities from us at the public offering price under delayed delivery contracts. These contracts would provide for payment and delivery on a specified date in the future. The contracts would be subject only to those conditions described in the prospectus supplement. The prospectus supplement will describe the commission payable for solicitation of those contracts.

General Information

We may have agreements with the agents, dealers, underwriters and remarketing firms to indemnify them against certain civil liabilities, including liabilities under the Securities Act, or to contribute with respect to payments that the agents, dealers, underwriters or remarketing firms may be required to make. Agents, dealers, underwriters and remarketing firms may be customers of, engage in transactions with or perform services for us in the ordinary course of their businesses.

Table of Contents

LEGAL MATTERS

Jones Day will pass upon the validity of the securities being offered hereby.

EXPERTS

The consolidated financial statements of Athersys, Inc. appearing in Athersys, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2013, including the schedule appearing therein, and the effectiveness of Athersys, Inc.'s internal control over financial reporting as of December 31, 2013 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

Table of Contents

Shares

Common Stock

Prospectus Supplement

, 2017

Sole Book-Running Manager

William Blair

Lead Manager

Needham & Company