Filed Pursuant to Rule 424(b)(5)
Registration No. 333-178748

PROSPECTUS SUPPLEMENT
(To Prospectus dated January 6, 2012)

8,000,000 Shares

Common Stock

We are offering 8,000,000 shares of our common stock. Our common stock is listed on The NASDAQ Global Market under the symbol “ACAD.” On May 14, 2013, the last reported sale price for our common stock on The NASDAQ Global Market was $12.95 per share.

Investing in our common stock involves a high degree of risk. Please read “Risk Factors” beginning on page S-8 of this prospectus supplement and the documents incorporated by reference into this prospectus supplement.

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

	PER SHARE	TOTAL
Public offering price	$ 12.50	$100,000,000
Underwriting discounts and commissions	$ 0.75	$ 6,000,000
Proceeds to ACADIA (before expenses)	$ 11.75	$ 94,000,000

Entities affiliated with one of our principal stockholders and one of our directors, Dr. Stephen R. Biggar, have agreed to purchase 1,993,000 shares of the common stock offered in this offering at the price offered to the public.

Delivery of the shares of common stock is expected to be made on or about May 20, 2013. We have granted the underwriters an option for a period of 30 days to purchase up to an additional 1,200,000 shares of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $6,900,000 and the total proceeds to us, before expenses, will be $108,100,000.

Joint Book-Running Managers

Jefferies **Cowen and Company**

Co-Managers

JMP Securities **Needham & Company**

Ladenburg Thalmann & Co. Inc. **Roth Capital Partners** **SunTrust Robinson Humphrey**

Prospectus Supplement dated May 14, 2013

TABLE OF CONTENTS

We have not, and the underwriters have not, authorized anyone to provide you with different information than that which is contained in or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectus that we have authorized for use in connection with this offering. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus supplement entitled "Where You Can Find More Information" and "Incorporation of Certain Information by Reference."

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering of common stock and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus dated January 6, 2012, including the documents incorporated by reference therein, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or in any document incorporated by reference that was filed with the Securities and Exchange Commission, or SEC, before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement. You should assume that the information contained in this prospectus supplement is accurate as of the date on the front cover of this prospectus supplement only and that any information we have incorporated by reference or included in the accompanying prospectus is accurate only as of the date given in the document incorporated by reference or as of the date of the prospectus, as applicable, regardless of the time of delivery of this prospectus supplement or the accompanying prospectus or any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

Unless otherwise mentioned or unless the context requires otherwise, all references in this prospectus supplement to “ACADIA,” “the Company,” “we,” “our” or similar references mean ACADIA Pharmaceuticals Inc. together with its wholly owned subsidiary, ACADIA Pharmaceuticals A/S.

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

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained elsewhere or incorporated by reference in this prospectus supplement and the accompanying prospectus. This summary does not contain all the information you should consider before investing in our common stock. You should read and consider carefully the more detailed information in this prospectus supplement and the accompanying prospectus, including the factors described under the heading "Risk Factors" in this prospectus supplement beginning on page S-8 and the financial and other information incorporated by reference in this prospectus supplement and the accompanying prospectus, as well as the information included in any free writing prospectus that we have authorized for use in connection with this offering, before making an investment decision.

Company Overview

We are a biopharmaceutical company focused on the development and commercialization of innovative small molecule drugs that address unmet medical needs in neurological and related central nervous system disorders. We have a pipeline of product candidates led by pimavanserin, which is in Phase III development as a potential first-in-class treatment for Parkinson's disease psychosis. We have reported successful results from a pivotal Phase III trial with pimavanserin in patients with Parkinson's disease psychosis. We hold worldwide commercialization rights to pimavanserin. Our pipeline also includes clinical-stage programs for chronic pain and glaucoma in collaboration with Allergan, Inc. and two internal, advanced preclinical programs directed at Parkinson's disease and other neurological disorders. All of our product candidates emanate from discoveries made at ACADIA.

Recent Clinical Developments

Detailed results of our pivotal Phase III -020 clinical trial evaluating the efficacy, tolerability and safety of pimavanserin in patients with Parkinson's disease psychosis were presented at the American Academy of Neurology meeting in March 2013. The -020 data showed robust and consistent efficacy of pimavanserin across study measures and were consistent with the -020 top-line results that we announced in November 2012. Pimavanserin met the primary endpoint in the -020 study by demonstrating highly significant antipsychotic efficacy (p=0.001) on the SAPS-PD scale, which consists of nine items from the hallucinations and delusions domains of the Scale for the Assessment of Positive Symptoms. Pimavanserin also met the key secondary endpoint for motoric tolerability as measured using Parts II and III of the Unified Parkinson's Disease Rating Scale, or UPDRS. Highly significant improvements also were observed in additional secondary efficacy measures, including the Clinical Global Impression Severity, or CGI-S, scale ($p<0.001$), the Clinical Global Impression Improvement, or CGI-I, scale (p=0.001), and a CGI-I responder analyses (p=0.002). In addition, statistically significant benefits were observed in exploratory measures of nighttime sleep, daytime wakefulness, and caregiver burden. Consistent with previous studies, pimavanserin was safe and well-tolerated in the -020 study.

In April 2013, we announced that we had met with the U.S. Food and Drug Administration, or FDA, and that the FDA has agreed that the data from our pivotal Phase III -020 trial, together with supportive data from other studies with pimavanserin, are sufficient to support the filing of a New Drug Application, or NDA, for the treatment of Parkinson's disease psychosis. We are focused on completing the remaining elements of our development program that are needed for submission of an NDA. Subject to changes that could result from our future interactions with the FDA or other developments, we currently are targeting an NDA submission near the end of 2014.

Our Pipeline

Our product candidates address diseases that are not well served by currently available therapies and that represent large potential commercial market opportunities. We believe that our product candidates offer innovative therapeutic approaches and may provide significant advantages relative to current therapies. Our pipeline consists of the following product candidates and programs:

PRODUCT CANDIDATE/PROGRAM	INDICATION	STAGE OF DEVELOPMENT	COMMERCIALIZATION RIGHTS
Pimavanserin	Parkinson's disease psychosis	Phase III	ACADIA
	Schizophrenia	Phase II (1)	ACADIA
	Alzheimer's disease psychosis	Phase II (2)	ACADIA
Alpha adrenergic agonists	Chronic pain	Phase II	Allergan
Muscarinic agonist	Glaucoma	Phase I	Allergan
ER-beta program	Chronic pain, Multiple Sclerosis, Parkinson's disease	Preclinical	ACADIA
Nurr-1 program	Parkinson's disease	Preclinical	ACADIA

(1) We have completed a Phase II schizophrenia co-therapy trial.
(2) We are planning to initiate a Phase II Alzheimer's disease psychosis trial in the second half of 2013.

Pimavanserin

Overview

Pimavanserin is a new chemical entity that we discovered and have advanced to Phase III development, potentially positioning it to be the first drug approved in the United States for the treatment of Parkinson's disease psychosis. We hold worldwide rights to pimavanserin and have established a patent portfolio, which includes numerous issued patents covering pimavanserin in the United States, Europe and several additional countries.

Pimavanserin as a Treatment for Parkinson's Disease Psychosis

We have selected Parkinson's disease psychosis as our lead indication for pimavanserin. This is a debilitating disorder that develops in up to 60 percent of patients with Parkinson's disease. Parkinson's disease psychosis, commonly consisting of visual hallucinations and delusions, substantially contributes to the burden of Parkinson's disease and deeply affects the quality of life of patients. Parkinson's disease psychosis is associated with increased caregiver distress and burden, nursing home placement, and increased morbidity and mortality. Currently, there are no drugs approved to treat this disorder in the United States. Nevertheless, physicians frequently resort to off-label use of existing antipsychotic drugs to treat patients with Parkinson's disease psychosis. Due to their dopamine-blocking properties, these drugs may counteract the dopamine-replacement therapy and, therefore, often worsen motor symptoms in patients with Parkinson's disease. Current antipsychotic agents also are associated with a number of side effects and all of these drugs have a black box warning for use in elderly patients with dementia-related psychosis due to increased mortality and morbidity. Pimavanserin offers an innovative, non-dopaminergic approach to treating Parkinson's disease psychosis by selectively blocking a key serotonin receptor that plays an important role in psychosis. We believe pimavanserin has the potential to be the first effective and safe drug that will treat Parkinson's disease psychosis without compromising motor control, thereby significantly improving the quality of life for patients with Parkinson's disease.

We currently are focused on completing the remaining elements of our Phase III pimavanserin Parkinson's disease psychosis development program that are needed for submission of an NDA. These include customary supportive studies, such as drug-drug interaction studies, and chemistry, manufacturing and controls, or CMC, development, such as stability testing of registration batches. We also are continuing to conduct a Phase III open-label safety extension study, referred to as the -015 Study, in this program. This trial involves patients who have completed our Phase III efficacy studies and who, in the opinion of the treating physician, may

benefit from continued treatment with pimavanserin. While the FDA has agreed to accept and review an NDA for pimavanserin on the basis of our positive pivotal-020 trial, along with supportive efficacy and safety data from other pimavanserin studies, the NDA will be subject to a standard FDA review to determine whether the filing package is adequate to support approval of pimavanserin for Parkinson's disease psychosis.

Pimavanserin as a Treatment for Other Neurological and Psychiatric Indications

We believe that pimavanserin also has the potential to address a range of other neurological and psychiatric indications, including Alzheimer's disease psychosis and schizophrenia, that are underserved by currently marketed antipsychotics. An estimated 5.4 million people in the United States are living with Alzheimer's disease. Studies have suggested that approximately 25 to 50 percent of Alzheimer's disease patients may develop psychosis, commonly consisting of hallucinations and delusions. Similar to Parkinson's disease psychosis, currently no drug is approved to treat Alzheimer's disease psychosis in the United States. We believe that pimavanserin's non-dopaminergic mechanism of action and favorable safety profile observed to date in elderly patients with Parkinson's disease, make it ideally suited to address the need for a novel Alzheimer's disease psychosis treatment. We are preparing to initiate a Phase II feasibility trial in the second half of 2013 to evaluate the use of pimavanserin as a treatment for Alzheimer's disease psychosis.

Schizophrenia is another indication for which we believe pimavanserin may provide important benefits to patients. It is estimated that approximately one percent of the U.S. population suffers from schizophrenia. Due to the limitations of currently available antipsychotics that result in poor patient compliance, we believe there is a large unmet medical need for new therapies for schizophrenia that have improved side effect and efficacy profiles. We have completed a successful Phase II trial for schizophrenia that demonstrated that co-therapy with pimavanserin and a low, sub-therapeutic dose of risperidone provided an attractive clinical profile with efficacy comparable to a high, standard dose of risperidone but with a much improved side effect profile and faster onset of action. We are planning for additional studies to pursue in this indication.

Strategy

Our goal is to discover, develop, and commercialize innovative small molecule drugs that address unmet medical needs in neurological and related central nervous system disorders. Key elements of our strategy are to:

- ***Develop and commercialize our lead product candidate, pimavanserin, for Parkinson's disease psychosis.*** We have selected Parkinson's disease psychosis as our lead indication for pimavanserin and we are focused on advancing our Phase III program to an NDA filing for this indication. We plan to complete the development in this program, and position pimavanserin as a potential first-in-class treatment for patients with Parkinson's disease psychosis. If successful, we intend to commercialize pimavanserin for this indication in the United States by establishing a small specialty sales force that calls on a focused group of neurologists. We may choose to commercialize pimavanserin in markets outside of the United States by establishing one or more strategic alliances in the future.
- ***Maximize the commercial potential of pimavanserin by expanding to additional neurological and psychiatric disorders.*** We intend to use our Phase III Parkinson's disease psychosis program as a foundation to develop and commercialize pimavanserin for additional neurological and psychiatric indications that are underserved by currently available antipsychotics and represent large unmet medical needs. This may include development of pimavanserin as a treatment for psychoses associated with other neurological disorders, including Alzheimer's disease, and as a co-therapy for schizophrenia. We plan to retain commercialization rights in therapeutic areas where we feel pimavanserin can be sold by a specialty sales force that calls on a focused group of physicians. In therapeutic areas that require large specialty or primary care sales forces, we may elect to complete late-stage development and commercialization through, or in collaboration with, partners.
- ***Continue to develop our other product candidates for the treatment of central nervous system and related disorders.*** We plan to continue developing our other product candidates, including our clinical-stage programs with Allergan, and our advanced internal preclinical programs. While our resources are currently focused on our most advanced product candidates, most notably pimavanserin, we may

choose to pursue additional product candidates in the future. These may be directed at neurological and related central nervous system disorders and may be developed independently or in partnerships. We believe that a diversified pipeline will mitigate risks inherent in drug development and increase the likelihood of commercial success.

- ***Opportunistically in-license or acquire complementary product candidates.*** Although all of the product candidates currently in our pipeline emanate from internal discoveries, in the future we may elect to in-license or acquire preclinical assets, clinical-stage product candidates or products to augment our pipeline and to leverage any sales force that we may establish in the future.

Corporate Information

We were originally incorporated in Vermont in 1993 as Receptor Technologies, Inc. In 1997, we reincorporated in Delaware. Our executive offices are located at 3911 Sorrento Valley Boulevard, San Diego, California 92121, and our telephone number is (858) 558-2871. Our website address is www.acadia-pharm.com. Information contained on our website is not a part of this prospectus supplement, the accompanying prospectus or any of the documents incorporated by reference herein.

THE OFFERING

Common stock offered by us	8,000,000 shares
Common stock to be outstanding immediately after this offering	86,802,997 shares
Option to purchase additional shares	We have granted the underwriters an option to purchase up to 1,200,000 additional shares of our common stock. This option is exercisable, in whole or in part, for a period of 30 days from the date of this prospectus supplement.
Use of proceeds	We intend to use the net proceeds of this offering to fund ongoing and new clinical trials and development and commercialization efforts for pimavanserin and our other product candidates, and for general corporate purposes, including working capital. See “Use of Proceeds” on page S-10 of this prospectus supplement.
NASDAQ Global Market Listing	Our common stock is listed on The NASDAQ Global Market under the symbol “ACAD.”
Risk Factors	Investing in our common stock involves a high degree of risk. See “Risk Factors” beginning on page S-8 of this prospectus supplement.
Insider Participation	Entities affiliated with one of our principal stockholders and one of our directors, Dr. Stephen R. Biggar, have agreed to purchase 1,993,000 shares of the common stock offered in this offering at the price offered to the public.

Outstanding Shares

The number of shares of our common stock to be outstanding immediately after this offering is based on 78,802,997 shares outstanding as of March 31, 2013, and excludes as of that date:

- 7,009,644 shares of common stock issuable upon the exercise of outstanding stock options under our equity incentive plans, with a weighted average exercise price of $3.23 per share;
- 872,355 shares of common stock available for future grants under our equity incentive plans;
- 306,253 shares of common stock available for issuance under our employee stock purchase plan; and
- 3,725,130 shares of common stock issuable upon the exercise of outstanding warrants at a weighted average exercise price of $1.20 per share.

Except as otherwise indicated, all information in this prospectus supplement assumes no exercise by the underwriters of their option to purchase additional shares.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Our business, prospects, financial condition or operating results could be materially adversely affected by the risks identified below, as well as other risks not currently known to us or that we currently consider immaterial. The trading price of our common stock could decline due to any of these risks, and you may lose all or part of your investment. In assessing the risks described below, you should also refer to the information contained in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2013 and other documents which are incorporated by reference in this prospectus supplement and the accompanying prospectus in their entirety, and other documents that we file from time to time with the SEC.

Risks Related to This Offering

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

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

If you purchase the common stock sold in this offering, you will experience immediate and substantial dilution in your investment. You will experience further dilution if we issue additional equity securities in future fundraising transactions.

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 substantial dilution with respect to the net tangible book value of the common stock you purchase in this offering. Based on the public offering price of $12.50 per share and our net tangible book value as of March 31, 2013, if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of $10.30 per share with respect to the net tangible book value of the common stock. See the section entitled “Dilution” for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

In addition, we have a significant number of stock options and warrants outstanding. To the extent that outstanding stock options or warrants have been or may be exercised or other shares issued, investors purchasing our common stock in this offering may experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders or result in downward pressure on the price of our common stock.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus, and the documents incorporated by reference herein and therein 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. These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to statements about:

- the progress or timing of clinical trials and regulatory submissions involving our drug candidates;
- the benefits to be derived from our drug candidates or the design of our clinical trials;
- the progress of our research and development programs;
- the benefits to be derived from relationships with our collaborators;
- the receipt of regulatory clearances and approvals;
- our estimates of future revenues and profitability; and
- our estimates regarding our capital requirements and our need for additional financing.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “could,” “would,” “expects,” “plans,” “anticipates,” “believes,” “estimates,” “projects,” “predicts,” “potential” and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail in the documents incorporated by reference herein, usually under the heading “Risk Factors.” Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement.

We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements. Before deciding to purchase our common stock, you should carefully consider the risk factors incorporated by reference herein, in addition to the other information set forth in this prospectus supplement, the accompanying prospectus and in the documents incorporated by reference herein.

USE OF PROCEEDS

We estimate the net proceeds to us from this offering will be approximately $93.8 million ($107.9 million if the underwriters' option to purchase additional shares is exercised in full), after payment of underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering to fund ongoing and new clinical trials and development and commercialization efforts for pimavanserin and our other product candidates and for general corporate purposes, which may include research, development and commercialization expenses, capital expenditures, working capital, and general and administrative expenses. We may also use a portion of the net proceeds to acquire or invest in complementary businesses, products and technologies. Although we currently have no specific agreements, commitments or understandings with respect to any acquisition or investment, we evaluate acquisition and investment opportunities and may engage in related discussions with other companies from time to time.

The amounts and timing of these expenditures will depend on a number of factors, such as the timing and progress of our research and development efforts, the timing and progress of any partnering efforts, and the competitive environment for our product candidates. As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering. Accordingly, our management will have broad discretion in the application of these proceeds. Pending application of the net proceeds as described above, we intend to temporarily invest the proceeds in short term, interest-bearing instruments.

DILUTION

Our net tangible book value as of March 31, 2013 was approximately $97.3 million, or $1.23 per share. Net tangible book value per share is determined by dividing our total tangible assets, less total liabilities, by the number of shares of our common stock outstanding as of March 31, 2013. Dilution with respect to net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately after this offering.

After giving effect to the sale of shares of our common stock in this offering at the public offering price of $12.50 per share and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of March 31, 2013 would have been approximately $191.1 million, or $2.20 per share. This represents an immediate increase in net tangible book value of $0.97 per share to existing stockholders and immediate dilution in net tangible book value of $10.30 per share to investors purchasing our common stock in this offering at the public offering price.

The following table illustrates this dilution on a per share basis:

Public offering price per share		$12.50
Net tangible book value per share as of March 31, 2013	$1.23	
Increase in net tangible book value per share attributable to new investors purchasing our common stock in this offering	0.97	
As adjusted net tangible book value per share on March 31, 2013, after giving effect to this offering		2.20
Dilution per share to new investors purchasing our common stock in this offering		$10.30

If the underwriters exercise in full their option to purchase up to 1,200,000 additional shares of common stock at the public offering price of $12.50 per share, the as adjusted net tangible book value after this offering would have been $2.33 per share, representing an increase in net tangible book value of $1.10 per share to existing stockholders and immediate dilution in net tangible book value of $10.17 per share to investors purchasing our common stock in this offering at the public offering price.

The above discussion and table are based on 78,802,997 shares outstanding as of March 31, 2013, and exclude as of that date:

- 7,009,644 shares of common stock issuable upon the exercise of outstanding stock options under our equity incentive plans, with a weighted average exercise price of $3.23 per share;
- 872,355 shares of common stock available for future grants under our equity incentive plans;
- 306,253 shares of common stock available for issuance under our employee stock purchase plan; and
- 3,725,130 shares of common stock issuable upon the exercise of outstanding warrants at a weighted average exercise price of $1.20 per share.

To the extent that options or warrants outstanding as of March 31, 2013 have been or may be exercised or other shares issued, investors purchasing our common stock in this offering may experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

UNDERWRITING

Subject to the terms and conditions set forth in the underwriting agreement, dated May 14, 2013, between us and Jefferies LLC and Cowen and Company, LLC, as the representatives of the underwriters named below and the joint book-running managers of this offering, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the respective number of shares of common stock shown opposite its name below:

UNDERWRITERS	NUMBER OF SHARES
Jefferies LLC	3,000,000
Cowen and Company, LLC	2,600,000
JMP Securities LLC	680,000
Needham & Company, LLC	680,000
Ladenburg Thalmann & Co. Inc.	400,000
Roth Capital Partners, LLC	400,000
SunTrust Robinson Humphrey, Inc.	240,000
Total	8,000,000

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the shares of common stock if any of them 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 agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

The underwriters have advised us that, following the completion of this offering, they currently intend to make a market in the common stock as permitted by applicable laws and regulations. However, the underwriters are not obligated to do so, and the underwriters may discontinue any market-making activities at any time without notice in their sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the common stock, that you will be able to sell any of the common stock held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriters are offering the shares of common stock subject to their acceptance of the shares of common stock from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commission and Expenses

The underwriters have advised us that they propose to offer the shares of common stock to the public at the public offering price set forth on the cover page of this prospectus supplement and to certain dealers, which may include the underwriters, at that price less a concession not in excess of $0.45 per share of common stock. After the offering, the public offering price, concession and reallowance to dealers may be reduced by the representatives. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus supplement.

The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	PER SHARE		TOTAL	
	WITHOUT OPTION TO PURCHASE ADDITIONAL SHARES	WITH OPTION TO PURCHASE ADDITIONAL SHARES	WITHOUT OPTION TO PURCHASE ADDITIONAL SHARES	WITH OPTION TO PURCHASE ADDITIONAL SHARES
Public offering price	$ 12.50	$ 12.50	$100,000,000	$115,000,000
Underwriting discounts and commissions paid by us	$ 0.75	$ 0.75	$ 6,000,000	$ 6,900,000
Proceeds to us, before expenses	$ 11.75	$ 11.75	$ 94,000,000	$108,100,000

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately $175,000.

Listing

Our common stock is listed on The NASDAQ Global Market under the trading symbol "ACAD."

Option to Purchase Additional Shares

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus supplement, to purchase, from time to time, in whole or in part, up to an aggregate of 1,200,000 additional shares of common stock from us at the public offering price set forth on the cover page of this prospectus supplement, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional shares of common stock proportionate to that underwriter's initial purchase commitment as indicated in the table above.

No Sales of Similar Securities

We and each of our executive officers and directors have agreed, subject to specified exceptions, not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open "put equivalent position" within the meaning of Rule 16a-1(h) under the Securities Exchange Act of 1934, as amended, or
- otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially, or
- publicly announce an intention to do any of the foregoing for a period of 90 days after the date of this prospectus supplement without the prior written consent of Jefferies LLC and Cowen and Company, LLC.

These restrictions terminate after the close of trading of the shares of common stock on and including the 90th day after the date of this prospectus supplement. However, subject to certain exceptions, in the event that either:

- during the last 17 days of the 90-day restricted period, we issue an earnings release or material news or a material event relating to us occurs, or
- prior to the expiration of the 90-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 90-day restricted period,

then in either case the expiration of the 90-day restricted period will be extended until the expiration of the 18-day period beginning on the date of the issuance of an earnings release or the occurrence of the material news or event, as applicable, unless Jefferies LLC and Cowen and Company, LLC waive, in writing, such an extension.

Jefferies LLC and Cowen and Company, LLC may, in their sole discretion and at any time or from time to time before the termination of the 90-day period release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our stockholders who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period.

Stabilization

The underwriters have advised us that, pursuant to Regulation M under the Securities Exchange Act of 1934, as amended, certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of our common stock at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve either “covered” short sales or “naked” short sales.

“Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional shares of our common stock in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares of our common stock or purchasing shares of our common stock 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 of common stock available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares.

“Naked” short sales are sales in excess of the option to purchase additional shares of common stock. 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 the shares of common stock in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of common stock on behalf of the underwriters for the purpose of fixing or maintaining the price of the common stock. A syndicate covering transaction is the bid for or the purchase of common stock on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. 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. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the common stock originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

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. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

The underwriters may also engage in passive market making transactions in our common stock on the NASDAQ Global Market in accordance with Rule 103 of Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker’s bid, that bid must then be lowered when specified purchase limits are exceeded.

Electronic Distribution

This prospectus supplement and the accompanying prospectus in electronic format may be made available by e-mail or on the web sites or through online services maintained by one or more of the underwriters or their affiliates. In

those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of shares of our common stock for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than this prospectus supplement and the accompanying prospectus in electronic format, the information on the underwriters' web sites and any information contained in any other web site maintained by any of the underwriters is not part of this prospectus supplement or the accompanying prospectus, has not been approved and/or endorsed by us or the underwriters and should not be relied upon by investors.

Other Activities and Relationships

The underwriters and certain of their 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. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their 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 issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas 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.

Notice To Investors

Australia

This prospectus supplement is not a disclosure document for the purposes of Australia's Corporations Act 2001 (Cth) of Australia, or Corporations Act, has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus supplement in Australia:

A. You confirm and warrant that you are either:
- a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;
- a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to the company which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made; or
- a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor or professional investor under the Corporations Act, any offer made to you under this prospectus supplement is void and incapable of acceptance.

B. You warrant and agree that you will not offer any of the shares issued to you pursuant to this prospectus supplement for resale in Australia within 12 months of those shares being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

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, with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, which is referred to as the Relevant Implementation Date, no offer of any securities which are the subject of the offering contemplated by this prospectus supplement has been or will be made to the public in that Relevant Member State other than any offer where a prospectus has been or will be published in relation to such securities that has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the relevant competent authority in that Relevant Member State in accordance with the Prospectus Directive, except that with effect from and including the Relevant Implementation Date, an offer of such securities may be made to the public 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 representatives of the underwriters for any such offer; or

c) to any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of securities shall require the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to any securities 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 the securities to be offered so as to enable an investor to decide to purchase or subscribe the securities, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and 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.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32) of Hong Kong. No document, invitation or advertisement relating to the securities has been issued 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 of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance.

This prospectus supplement has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus supplement may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus supplement and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Japan

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended), or FIEL, and the underwriters will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means, unless otherwise provided herein, any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus supplement has not been and will not be lodged or registered with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and any other document or material in connection with the offer or sale, or the invitation for subscription or purchase of the securities may not be issued, circulated or distributed, nor may the securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to the public or any member of the public in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person as defined under Section 275(2), or any person pursuant to Section 275(1A) of the SFA, 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. Where the securities are 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 under 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 is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for six months after that corporation or that trust has acquired such securities under Section 275 of the SFA except:

   i) to an institutional investor under Section 274 of the SFA or to a relevant person defined in Section 275(2) of the SFA, or to any person pursuant to an offer that is made on terms that such shares, debentures and units of shares and debentures of that corporation or such rights and interest in that trust are acquired at a consideration of not less than $200,000 (or its equivalent in a foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets, and further for corporations, in accordance with the conditions, specified in Section 275 of the SFA;

   ii) where no consideration is given for the transfer; or

   iii) where the transfer is by operation of law.

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This prospectus supplement 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 prospectus supplement nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus supplement nor any other offering or marketing material relating to the offering, the Company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus supplement will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority, or FINMA, and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

United Kingdom

This prospectus supplement is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, which is referred to as the Order, and/or (ii) high net worth entities falling within Article 49(2)(a) to (d) of the Order and other persons to whom it may lawfully be communicated, each such person being referred to as a relevant person.

This prospectus supplement and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

LEGAL MATTERS

The validity of the common stock offered by this prospectus supplement and the accompanying prospectus will be passed upon for us by Cooley LLP, San Diego, California. Latham & Watkins LLP, San Diego, California, is counsel for the underwriters in connection with this offering.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended December 31, 2012 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus supplement and the accompanying prospectus are part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and do not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus supplement or the accompanying prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference in this prospectus supplement and the accompanying prospectus for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at http://www.sec.gov. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" the information we file with it, which means that we can disclose important information to you by referring you to those documents. Information incorporated by reference is part of this prospectus supplement and the accompanying prospectus. Later information filed with the SEC will update and supersede this information. The SEC's Internet site can be found at http://www.sec.gov.

We incorporate by reference the documents listed below and any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement until the termination of the offering of the shares covered by this prospectus supplement (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items):

- our Annual Report on Form 10-K for the year ended December 31, 2012 filed with the SEC on March 12, 2013;
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2012 from our Definitive Proxy Statement on Schedule 14A for the 2013 Annual Meeting of Stockholders, filed with the SEC on April 25, 2013;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2013, filed with the SEC on May 7, 2013;
- our Current Reports on Form 8-K filed with the SEC on January 24, 2013, March 21, 2013, and April 11, 2013;
- our Current Report on Form 8-K/A filed with the SEC on March 21, 2013; and
- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on May 19, 2004, including any amendments or reports filed for the purposes of updating this description.

You may request a copy of these filings at no cost, by contacting us at the following address or telephone number:

Investor Relations
ACADIA Pharmaceuticals Inc.
3911 Sorrento Valley Boulevard
San Diego, CA 92121
(858) 558-2871

In accordance with Rule 412 of the Securities Act, any statement contained in a document incorporated by reference herein shall be deemed modified or superseded to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement.

Table of Contents

PROSPECTUS

Common Stock

We may from time to time sell up to 20,000,000 shares of our common stock, $0.0001 par value per share. You should read this prospectus and any supplement carefully before you invest.

Our common stock is listed on The Nasdaq Global Market under the symbol “ACAD”. On December 22, 2011, the last reported sale price for our common stock was $1.32. You are encouraged to obtain current market quotations for shares of our common stock.

Our principal executive offices are located at 3911 Sorrento Valley Boulevard, San Diego, California 92121, and our telephone number at that address is (858) 558-2871.

Investing in our common stock involves a high degree of risk. See “Risk Factors” on page 1.

As of December 22, 2011, the aggregate market value of our outstanding common stock held by non-affiliates, or the public float, was approximately $69.5 million, which was calculated based on approximately 52.7 million shares of our outstanding common stock held by non-affiliates and on a price of $1.32 per share, the last reported sale price for our common stock on December 22, 2011. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell our common stock in a public primary offering with a value exceeding one-third of our public float in any 12-month period unless our public float subsequently rises to $75.0 million or more. We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the 12 calendar months prior to and including the date of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved 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 January 6, 2012.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS

You should rely only on the information contained or incorporated by reference in this prospectus and any related prospectus supplement. We have not authorized anyone to provide you with different information. No one is making offers to sell or seeking offers to buy these shares of our common stock in any jurisdiction where the offer or sale is not permitted. You should assume that the information contained in this prospectus and any prospectus supplement is accurate only as of the date on the front of this prospectus or the prospectus supplement, as applicable, and that any information we have incorporated by reference in this prospectus or any prospectus supplement is accurate only as of the date given in the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

References in this prospectus to "ACADIA," the "Company," "we," "us" and "our" refer to ACADIA Pharmaceuticals Inc., together with our wholly-owned subsidiaries.

"ACADIA" is our trademark. This prospectus also includes trademarks and trade names owned by other parties, and these trademarks and trade names are the property of their respective owners. Use or display by us of other parties' trademarks, trade dress or products in this prospectus is not intended to, and does not imply a relationship with, or endorsements or sponsorship of, us by the trademark or trade dress owners.

ACADIA PHARMACEUTICALS INC.

We are a biopharmaceutical company utilizing innovative technology to fuel drug discovery and clinical development of novel treatments for central nervous system disorders. We have four product candidates in clinical development including pimavanserin, which is in Phase III development as a potential first-in-class treatment for Parkinson's disease psychosis. We hold worldwide commercialization rights to pimavanserin. We also have a product candidate in Phase II development for chronic pain and a product candidate in Phase I development for glaucoma, both in collaboration with Allergan, Inc., and AM-831 in Phase I development for schizophrenia in collaboration with Meiji Seika Pharma Co., Ltd. All of the product candidates in our pipeline emanate from discoveries made using our proprietary drug discovery platform.

We were incorporated in Delaware in January 1997. Our website address is www.acadia-pharm.com. The information contained in, or that can be accessed through, our website is not part of this prospectus.

RISK FACTORS

An investment in our common stock is risky. Prior to making a decision about investing in our common stock, you should carefully consider the specific risks discussed under "Risk Factors" in any applicable prospectus supplement and in our filings with the Securities and Exchange Commission, or SEC, incorporated by reference in this prospectus, together with all of the other information contained in this prospectus and any applicable prospectus supplement or incorporated by reference in this prospectus. The risks and uncertainties described in any applicable prospectus supplement and in our SEC filings are not the only ones facing us. Additional risks and uncertainties not presently known to us, or that we currently see as immaterial, may also harm our business. If any of the risks or uncertainties described in any applicable prospectus supplement or our SEC filings or any such additional risks and uncertainties actually occur, our business, results of operations and financial condition could be materially and adversely affected. In that case, the trading price of our common stock could decline, and you might lose all or part of your investment.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains, and the documents incorporated by reference herein and any prospectus supplement hereto may 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. These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to statements about:

- the progress or timing of clinical trials involving our drug candidates;
- the benefits to be derived from our drug candidates or the design of our clinical trials;
- the progress of our research and development programs;
- the benefits to be derived from relationships with our collaborators;
- the receipt of regulatory clearances and approvals;
- our estimates of future payments, revenues and profitability; and
- our estimates regarding our capital requirements and our need for additional financing.

In some cases, you can identify forward-looking statements by terms such as "may", "will", "should", "could", "would", "expects", "plans", "anticipates", "believes", "estimates", "projects", "predicts", "potential" and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the heading "Risk Factors" in our SEC filings, and may provide additional information in any applicable prospectus supplement. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement.

You should read this prospectus, the registration statement of which this prospectus is a part, the documents incorporated by reference herein, and any applicable prospectus supplement completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

You should rely only on the information contained, or incorporated by reference, in this prospectus and any applicable prospectus supplement. We have not authorized anyone to provide you with different information. The common stock offered under this prospectus is not being offered in any state where the offer is not permitted. You should not assume that the information provided by this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of this prospectus or the prospectus supplement, as applicable, or that any information incorporated by reference in this prospectus or in any prospectus supplement is accurate as of any date other than the date given in the document incorporated by reference. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of our common stock offered under this prospectus. Unless we indicate otherwise in the applicable prospectus supplement, we anticipate that any net proceeds will be used for working capital and general corporate purposes. We will set forth in the applicable prospectus supplement our intended use for the net proceeds received from the sale of any common stock sold pursuant to that prospectus supplement.

PLAN OF DISTRIBUTION

We may sell the common stock to one or more underwriters for public offering and sale by them and may also sell the common stock to investors directly or through agents. We will name any underwriter or agent involved in the offer and sale of common stock in the applicable prospectus supplement. We have reserved the right to sell or exchange our common stock directly to investors on our own behalf in those jurisdictions where we are authorized to do so.

We may distribute the common stock from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

We may also, from time to time, authorize dealers, acting as our agents, to offer and sell the common stock upon the terms and conditions set forth in the applicable prospectus supplement. We, or the purchasers of the common stock for whom the underwriters may act as agents, may compensate underwriters in the form of underwriting discounts or commissions, in connection with the sale of the common stock. Underwriters may sell the common stock to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agent. Unless otherwise indicated in the applicable prospectus supplement, an agent will be acting on a best efforts basis and a dealer will purchase the common stock as a principal, and may then resell the common stock at varying prices to be determined by the dealer.

We will describe in the applicable prospectus supplement any compensation we pay to underwriters or agents in connection with the offering of our common stock, and any discounts, concessions or commissions allowed by underwriters to participating dealers. Dealers and agents participating in the distribution of the common stock may be deemed to be underwriters, and any discounts and commissions received by them and any profit realized by them on resale of the common stock may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against certain civil liabilities, including liabilities under

the Securities Act and to reimburse these persons for certain expenses. We may grant underwriters who participate in the distribution of the common stock we are offering under this prospectus an option to purchase additional shares to cover over-allotments, if any, in connection with the distribution.

To facilitate the offering of our common stock, certain persons participating in the offering may engage in transactions that stabilize, maintain, or otherwise affect the price of the common stock. This may include over- allotments or short sales of the common stock, which involve the sale by persons participating in the offering of more common stock than we sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the common stock by bidding for or purchasing common stock in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if the common stock sold by them is repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the common stock at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

Certain underwriters, dealers or agents and their associates may engage in transactions with and perform services for us in the ordinary course of our business.

LEGAL MATTERS

Cooley LLP, San Diego, California, has given its opinion to us as to certain legal matters relating to the validity of the shares of our common stock to be offered by this prospectus. Any underwriters will be advised about the other issues relating to any offering by their own legal counsel.

EXPERTS

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2010 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We are a reporting company and we file annual, quarterly and current reports, proxy statements and other information with the SEC. We have filed with the SEC a registration statement under the Securities Act with respect to the common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits which are part of the registration statement. For further information with respect to us and the common stock offered by this prospectus, we refer you to the registration statement and the exhibits filed as part of the registration statement. You may read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our SEC filings are also available to the public from the SEC's website at www.sec.gov. We maintain a website at www.acadia-pharm.com. The information contained in, or that can be accessed through, our website is not part of this prospectus.

The SEC allows us to "incorporate by reference" the information we file with it, which means that we can disclose important information to you by referring to those documents. The information incorporated by reference is an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the following documents we filed with the SEC pursuant to Section 13 of the Exchange Act:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2010 (including information specifically incorporated by reference into our Form 10-K from our Proxy Statement for our 2011 Annual Meeting of Stockholders);

- Quarterly Reports on Form 10-Q for the quarters ended March 31, June 30, and September 30, 2011;
- Current Reports on Form 8-K filed on January 12, April 1, April 11, June 14, and December 9, 2011;
- Description of our common stock contained in our registration statement on Form 8-A dated May 19, 2004; and
- All documents filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial filing of the registration statement to which this prospectus relates and prior to effectiveness of the registration statement or (ii) after the date of this prospectus and before the last offering of common stock under this prospectus (excluding any portion of such documents which are furnished and not filed with the SEC).

You may access our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, Proxy Statement, and amendments to those documents, if any, filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at the SEC's website or our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The reference to our website does not constitute incorporation by reference of the information contained in our website. We do not consider information contained on, or that can be accessed through, our website to be part of this prospectus or the related registration statement.

You may request a copy of our SEC filings at no cost, by telephoning or writing us at the following address:

Investor Relations
ACADIA Pharmaceuticals Inc.
3911 Sorrento Valley Boulevard
San Diego, CA 92121
(858) 558-2871

Table of Contents

8,000,000 Shares

Common Stock

PROSPECTUS SUPPLEMENT

Joint Book-Running Managers

Jefferies
Cowen and Company

Co-Managers

JMP Securities
Needham & Company
Ladenburg Thalmann & Co. Inc.
Roth Capital Partners
SunTrust Robinson Humphrey

May 14, 2013