

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13G
Under the Securities Exchange Act of 1934

(Amendment No. 5)*

ACADIA PHARMACEUTICALS, INC.

(Name of Issuer)

Common Stock, \$0.0001 par value

(Title of Class of Securities)

004225108

(CUSIP Number)

January 10, 2011

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

Rule 13d-1(b)

Rule 13d-1(c)

Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("*Act*") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1. Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

RA Capital Management, LLC

2. Check the Appropriate Box if a Member of a Group (See Instructions)
(a)
(b)

3. SEC Use Only

4. Citizenship or Place of Organization **Massachusetts**

Number of Shares Beneficially Owned by Each Reporting Person With	5. Sole Voting Power	0 shares
	6. Shared Voting Power	2,496,178 shares*
	7. Sole Dispositive Power	0 shares
	8. Shared Dispositive Power	2,496,178 shares*

9. Aggregate Amount Beneficially Owned by Each Reporting Person
2,496,178 shares*

10. Check if the Aggregate Amount in Row (9) Excludes
Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)
6.4%*

12. Type of Reporting Person (See Instructions)
IA

* Reflects the number of shares of outstanding common stock of the issuer beneficially owned by the Reporting Person on January 10, 2011. The percentage of the outstanding common stock beneficially owned was calculated based upon 39,299,302 shares outstanding according to the Quarterly Report on Form 10-Q filed by the Issuer on November 9, 2010.

1. Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

Peter Kolchinsky

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization **United States**

Number of Shares Beneficially Owned by Each Reporting Person With	5. Sole Voting Power	0 shares
	6. Shared Voting Power	2,496,178 shares*
	7. Sole Dispositive Power	0 shares
	8. Shared Dispositive Power	2,496,178 shares*
9.	Aggregate Amount Beneficially Owned by Each Reporting Person 2,496,178 shares*	
10.	Check if the Aggregate Amount in Row (9) Excludes <input type="checkbox"/> Certain Shares (See Instructions)	
11.	Percent of Class Represented by Amount in Row (9) 6.4%*	
12.	Type of Reporting Person (See Instructions) IN	

* Reflects the number of shares of outstanding common stock of the issuer beneficially owned by the Reporting Person on January 10, 2011. The percentage of the outstanding common stock beneficially owned was calculated based upon 39,299,302 shares outstanding according to the Quarterly Report on Form 10-Q filed by the Issuer on November 9, 2010.

1. Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

RA Capital Healthcare Fund, L.P.

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a) (b)

3. SEC Use Only

4. Citizenship or Place of Organization **Delaware**

Number of Shares Beneficially Owned by Each Reporting Person With	5.	Sole Voting Power	0 shares
	6.	Shared Voting Power	1,248,095 shares*
	7.	Sole Dispositive Power	0 shares
	8.	Shared Dispositive Power	1,248,095 shares*

9. Aggregate Amount Beneficially Owned by Each Reporting Person
1,248,095 shares*

10. Check if the Aggregate Amount in Row (9) Excludes
Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)
3.2%*

12. Type of Reporting Person (See Instructions)
PN (Limited Partnership)

* Reflects the number of shares of outstanding common stock of the issuer beneficially owned by the Reporting Person on January 10, 2011. The percentage of the outstanding common stock beneficially owned was calculated based upon 39,299,302 shares outstanding according to the Quarterly Report on Form 10-Q filed by the Issuer on November 9, 2010.

EXPLANATORY NOTE

This Amendment No. 5 (the "Amendment") amends and supplements the statement on Schedule 13G originally filed by the Reporting Persons (defined below) with the Securities and Exchange Commission (the "SEC") on January 20, 2011, as amended by Amendment No. 1 to Schedule 13G filed with the SEC on February 14, 2012, Amendment No. 2 to Schedule 13G filed with the SEC on February 14, 2013, and Amendment No. 3 to Schedule 13G filed with the SEC on February 14, 2014 (collectively, the "Statement"), with respect to the common stock, par value \$0.001 per share ("Common Stock"), of Acadia Pharmaceuticals, Inc. (the "Issuer").

RA Capital Management, LLC ("Capital") is the general partner of RA Capital Healthcare Fund, L.P. (the "Fund") and serves as investment adviser for a separately managed account (the "Account"). Peter Kolchinsky is the manager of Capital. Mr. Kolchinsky, Capital and the Fund are referred to herein collectively as the "Reporting Persons." As the investment adviser to the Fund and the Account, Capital may be deemed a beneficial owner, for purposes of Section 13(d) of the Securities Exchange Act of 1934 (the "Act"), of any securities of the Issuer owned by the Fund or the Account. As the manager of Capital, Mr. Kolchinsky may be deemed a beneficial owner, for purposes of Section 13(d) of the Act, of any securities of the Issuer beneficially owned by Capital. Capital is a registered investment adviser within the meaning of Rule 13d-1(b)(1)(ii)(E) and Rule 16a-1(a)(v), and Mr. Kolchinsky is a parent or control person of Capital within the meaning of Rule 13d-1(b)(1)(ii)(G) and Rule 16a-1(a)(1)(vii). Capital and Mr. Kolchinsky disclaim beneficial ownership of the securities reported in the Statement and this Amendment other than for the purpose of determining their obligations under Section 13(d) of the Act, and neither the filing of the Statement nor the filing of this Amendment shall be deemed an admission that either Capital or Mr. Kolchinsky is or was the beneficial owner of such securities for any other purpose.

This Amendment is being filed to report the Reporting Persons' holdings of Common Stock as of January 10, 2011, the first date on which Capital beneficially owned more than 5% of the outstanding Common Stock, and as of each date thereafter as of which a required amendment was not filed. (each such date, a "Subsequent Amendment Date"). Information regarding the holdings of each Reporting Person as of January 10, 2011 is set forth on the cover page hereto, and information regarding each Reporting Person's holdings as of each Subsequent Amendment Date is set forth in Item 4 hereof.

Item 1.

(a) **Name of Issuer:** Acadia Pharmaceuticals, Inc.

(b) **Address of the Issuer's Principal Executive Offices:** 3911 Sorrento Valley Boulevard, San Diego, California 92121.

Item 2.

(a) **Name of Person Filing:** This joint statement on Schedule 13G is being filed by Peter Kolchinsky, RA Capital Management, LLC and RA Capital Healthcare Fund, L.P.

(b) **Address of Principal Business Office:** The principal business office of the Reporting Persons is c/o RA Capital Management, LLC, 20 Park Plaza, Suite 1200, Boston, MA 02116.

(c) **Citizenship:** Capital is a Massachusetts limited liability company. The Fund is a Delaware limited partnership. Mr. Kolchinsky is a United States citizen.

(d) **Title and Class of Securities:** Common Stock.

(e) **CUSIP Number:** 004225108

Item 3. If this statement is filed pursuant to §§240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

Not applicable.

Item 4. Ownership:

Item 4 of the Statement is hereby amended and supplemented as follows:

(a)-(b) The table below sets forth (1) the number of shares of Common Stock beneficially owned by each of the Reporting Persons as of January 10, 2011 and as of each Subsequent Amendment Date and (2) the percentage of the outstanding Common Stock beneficially owned by each of the Reporting Persons as of each such date, calculated based upon the total number of shares outstanding reported in the most recent Quarterly Report on Form 10-Q or Registration Statement on Form S-3 filed by the Issuer on or prior to the applicable date.

Date	RA Capital Healthcare Fund, L.P. (1)		RA Capital Management, LLC (1)		Peter Kolchinsky (1)	
	(#)	(%)	(#)	(%)	(#)	(%)
01/10/2011	1,248,095	3.2%	2,496,178	6.4%	2,496,178	6.4%
02/24/2011	2,597,629	5.0%	5,158,708	9.9%	5,158,708	9.9%
12/31/2011	2,657,194	5.0%	5,269,999	9.9%	5,269,999	9.9%
12/21/2012	4,976,286	6.4%	7,927,763	10.2%	7,927,763	10.2%
12/31/2012	5,069,919	6.5%	8,077,092	10.3%	8,077,092	10.3%
12/31/2013	4,557,403	5.0%	6,419,898	7.1%	6,419,898	7.1%

(1) Amounts reported above for the Fund represent shares of Common Stock owned by the Fund. Amounts reported above for each of Capital and Peter Kolchinsky represent shares of Common Stock owned by the Fund and the Account. Shares beneficially owned include options exercisable within sixty days.

Item 5. Ownership of Five Percent or Less of a Class:

Not applicable.

Item 6. Ownership of More than Five Percent on Behalf of Another Person:

Not applicable.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person:

Not applicable.

Item 8. Identification and Classification of Members of the Group:

Not applicable.

Item 9. Notice of Dissolution of Group:

Not applicable.

Item 10. Certification:

By signing below I hereby certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

Exhibit 99.1 Joint Filing Agreement by and among the Reporting Persons.

The Joint Filing Agreement, executed by and among the Reporting Persons, dated January 19, 2011, which was filed as an exhibit to the Schedule 13G filed by the Reporting Persons with the Securities and Exchange Commission on January 20, 2011, is hereby incorporated by reference.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this Amendment is true, complete and correct.

Date: April 3, 2015

RA CAPITAL HEALTHCARE FUND, L.P.

By: RA Capital Management, LLC
General Partner

By: /s/ Peter Kolchinsky
Peter Kolchinsky
Manager

RA CAPITAL MANAGEMENT, LLC

By: /s/ Peter Kolchinsky
Peter Kolchinsky
Manager

PETER KOLCHINSKY

/s/ Peter Kolchinsky