

ARCA biopharma, Inc.  
Form SC 13G/A  
February 12, 2010

**SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**

**SCHEDULE 13G**

**Under the Securities Exchange Act of 1934**  
**(Amendment No. 1)\***

**ARCA BIOPHARMA, INC.**

(Name of Issuer)

**COMMON STOCK**

(Title of Class of Securities)

**00211Y 10 0**

(CUSIP Number)

**DECEMBER 31, 2009**

(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*).

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Page 2 of 12 Pages

1. NAMES OF REPORTING PERSONS  
**Boulder Ventures IV (Annex), L.P.**

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

2. (a)   
(b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION  
**Delaware, United States of America**

5. SOLE VOTING POWER  
NUMBER OF **0 shares**

6. SHARED VOTING POWER  
SHARES BENEFICIALLY OWNED BY **0 shares**

7. SOLE DISPOSITIVE POWER  
EACH REPORTING PERSON **0 shares**

8. SHARED DISPOSITIVE POWER  
WITH: **0 shares**

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  
**0 shares**

CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)

10.

o

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

11.

0.0%

TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

12.

PN

(1) This Schedule 13G is filed by Boulder Ventures IV (Annex), L.P. ( BV IV Annex ), Boulder Ventures IV, L.P. ( BV IV LP ), BV Partners IV, L.L.C. ( BV PARTNERS IV LLC ), Josh E. Fidler ( Fidler ), Kyle Lefkoff ( Lefkoff ), Lawrence M. Macks ( Macks ) and Peter Roshko ( Roshko ) (collectively, the Fund Entities ). The Fund Entities expressly disclaim status as a group for purposes of this Schedule 13G. BV PARTNERS IV LLC serves as the general partner of BV IV Annex and BV IV LP, and owns no securities of the Issuer directly. Fidler, Lefkoff, Macks and Roshko are Managing Members of BV PARTNERS IV LLC and share voting and dispositive power over the shares held by BV IV Annex and BV IV LP. The information with respect to the ownership of the Common Stock by the Fund Entities filing this Amendment No. 1 to the statement on Schedule 13G is provided as of December 31, 2009.

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1. NAMES OF REPORTING PERSONS  
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(b)

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**Delaware, United States of America**

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NUMBER OF **0 shares**

6. SHARED VOTING POWER  
SHARES BENEFICIALLY OWNED BY **0 shares**

7. SOLE DISPOSITIVE POWER  
EACH REPORTING PERSON **0 shares**

8. SHARED DISPOSITIVE POWER  
WITH: **0 shares**

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  
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1. NAMES OF REPORTING PERSONS  
**BV Partners IV, L.L.C.**

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

2. (a)   
(b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION  
**Delaware, United States of America**

5. SOLE VOTING POWER  
NUMBER OF **0 shares**

6. SHARED VOTING POWER  
SHARES BENEFICIALLY OWNED BY **0 shares**

7. SOLE DISPOSITIVE POWER  
EACH REPORTING PERSON **0 shares**

8. SHARED DISPOSITIVE POWER  
WITH: **0 shares**

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  
**0 shares**

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PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

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TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

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1. NAMES OF REPORTING PERSONS  
**Josh E. Fidler**

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

2. (a)   
(b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION  
**United States of America**

5. SOLE VOTING POWER  
NUMBER OF **0 shares**

6. SHARED VOTING POWER  
SHARES BENEFICIALLY OWNED BY **0 shares**

7. SOLE DISPOSITIVE POWER  
EACH REPORTING PERSON **0 shares**

8. SHARED DISPOSITIVE POWER  
WITH: **0 shares**

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  
**0 shares**



CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)

10.

o

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

11.

0.0%

TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

12.

**IN**

(1) This Schedule 13G is filed by Boulder Ventures IV (Annex), L.P. ( BV IV Annex ), Boulder Ventures IV, L.P. ( BV IV LP ), BV Partners IV, L.L.C. ( BV PARTNERS IV LLC ), Josh E. Fidler ( Fidler ), Kyle Lefkoff ( Lefkoff ), Lawrence M. Macks ( Macks ) and Peter Roshko ( Roshko ) (collectively, the Fund Entities ). The Fund Entities expressly disclaim status as a group for purposes of this Schedule 13G. BV PARTNERS IV LLC serves as the general partner of BV IV Annex and BV IV LP, and owns no securities of the Issuer directly. Fidler, Lefkoff, Macks and Roshko are Managing Members of BV PARTNERS IV LLC and share voting and dispositive power over the shares held by BV IV Annex and BV IV LP. The information with respect to the ownership of the Common Stock by the Fund Entities filing this Amendment No. 1 to the statement on Schedule 13G is provided as of December 31, 2009.

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1. NAMES OF REPORTING PERSONS  
**Kyle Lefkoff**

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

2. (a)   
(b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION  
**United States of America**

5. SOLE VOTING POWER  
NUMBER OF **0 shares**

6. SHARED VOTING POWER  
SHARES BENEFICIALLY OWNED BY **0 shares**

7. SOLE DISPOSITIVE POWER  
EACH REPORTING PERSON **0 shares**

8. SHARED DISPOSITIVE POWER  
WITH: **0 shares**

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  
**0 shares**

CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)

10.

o

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

11.

0.0%

TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

12.

**IN**

(1) This Schedule 13G is filed by Boulder Ventures IV (Annex), L.P. ( BV IV Annex ), Boulder Ventures IV, L.P. ( BV IV LP ), BV Partners IV, L.L.C. ( BV PARTNERS IV LLC ), Josh E. Fidler ( Fidler ), Kyle Lefkoff ( Lefkoff ), Lawrence M. Macks ( Macks ) and Peter Roshko ( Roshko ) (collectively, the Fund Entities ). The Fund Entities expressly disclaim status as a group for purposes of this Schedule 13G. BV PARTNERS IV LLC serves as the general partner of BV IV Annex and BV IV LP, and owns no securities of the Issuer directly. Fidler, Lefkoff, Macks and Roshko are Managing Members of BV PARTNERS IV LLC and share voting and dispositive power over the shares held by BV IV Annex and BV IV LP. The information with respect to the ownership of the Common Stock by the Fund Entities filing this Amendment No. 1 to the statement on Schedule 13G is provided as of December 31, 2009.

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1. NAMES OF REPORTING PERSONS  
**Lawrence M. Macks**

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

2. (a)   
(b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION  
**United States of America**

5. SOLE VOTING POWER  
NUMBER OF **0 shares**

6. SHARED VOTING POWER  
SHARES BENEFICIALLY OWNED BY **0 shares**

7. SOLE DISPOSITIVE POWER  
EACH REPORTING PERSON **0 shares**

8. SHARED DISPOSITIVE POWER  
WITH: **0 shares**

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  
**0 shares**

CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)

10.

o

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

11.

0.0%

TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

12.

**IN**

(1) This Schedule 13G is filed by Boulder Ventures IV (Annex), L.P. ( BV IV Annex ), Boulder Ventures IV, L.P. ( BV IV LP ), BV Partners IV, L.L.C. ( BV PARTNERS IV LLC ), Josh E. Fidler ( Fidler ), Kyle Lefkoff ( Lefkoff ), Lawrence M. Macks ( Macks ) and Peter Roshko ( Roshko ) (collectively, the Fund Entities ). The Fund Entities expressly disclaim status as a group for purposes of this Schedule 13G. BV PARTNERS IV LLC serves as the general partner of BV IV Annex and BV IV LP, and owns no securities of the Issuer directly. Fidler, Lefkoff, Macks and Roshko are Managing Members of BV PARTNERS IV LLC and share voting and dispositive power over the shares held by BV IV Annex and BV IV LP. The information with respect to the ownership of the Common Stock by the Fund Entities filing this Amendment No. 1 to the statement on Schedule 13G is provided as of December 31, 2009.

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1. NAMES OF REPORTING PERSONS  
**Peter Roshko**

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

2. (a)   
(b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION  
**United States of America**

5. SOLE VOTING POWER  
NUMBER OF **0 shares**

6. SHARED VOTING POWER  
SHARES BENEFICIALLY OWNED BY **0 shares**

7. SOLE DISPOSITIVE POWER  
EACH REPORTING PERSON **0 shares**

8. SHARED DISPOSITIVE POWER  
WITH: **0 shares**

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  
**0 shares**

CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)

10.

o

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

11.

0.0%

TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

12.

**IN**

(1) This Schedule 13G is filed by Boulder Ventures IV (Annex), L.P. ( BV IV Annex ), Boulder Ventures IV, L.P. ( BV IV LP ), BV Partners IV, L.L.C. ( BV PARTNERS IV LLC ), Josh E. Fidler ( Fidler ), Kyle Lefkoff ( Lefkoff ), Lawrence M. Macks ( Macks ) and Peter Roshko ( Roshko ) (collectively, the Fund Entities ). The Fund Entities expressly disclaim status as a group for purposes of this Schedule 13G. BV PARTNERS IV LLC serves as the general partner of BV IV Annex and BV IV LP, and owns no securities of the Issuer directly. Fidler, Lefkoff, Macks and Roshko are Managing Members of BV PARTNERS IV LLC and share voting and dispositive power over the shares held by BV IV Annex and BV IV LP. The information with respect to the ownership of the Common Stock by the Fund Entities filing this Amendment No. 1 to the statement on Schedule 13G is provided as of December 31, 2009.

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Introductory Note: This Amendment No. 1 to the Statement on Schedule 13G is filed on behalf of Boulder Ventures IV (Annex), L.P., a Delaware limited partnership ( BV IV Annex), Boulder Ventures IV, L.P., a Delaware limited partnership ( BV IV LP ), BV Partners IV, L.L.C., a Delaware limited liability company ( BV PARTNERS IV LLC ), Josh E. Fidler ( Fidler ), Kyle Lefkoff ( Lefkoff ), Lawrence M. Macks ( Macks ) and Peter Roshko ( Roshko ), in respect of shares of Common Stock of ARCA biopharma, Inc.

**Item 1**

**Item 1(a).** Name of Issuer: ARCA biopharma, Inc. (ABIO)

**Item 1(b).** Address of Issuer's Principal Executive Offices:

8001 Arista Place, Suite 200  
Broomfield Co 80021

**Item 2(a).** Name of Person(s) Filing:

Boulder Ventures IV (Annex), L.P. ( BV IV Annex )  
Boulder Ventures IV, L.P. ( BV IV LP )  
BV Partners IV, L.L.C. ( BV PARTNERS IV LLC )  
Josh E. Fidler ( Fidler )  
Kyle Lefkoff ( Lefkoff )  
Lawrence M. Macks ( Macks )  
Peter Roshko ( Roshko )

**Item 2(b).** Address of Principal Business Office or, if none, Residence:

1941 Pearl Street, Suite 300  
Boulder, CO 80302

**Item 2(c).** Citizenship:

Entities:	BV IV	
	Annex	Delaware
	BV IV LP	Delaware
	BV PARTNERS IV LLC	Delaware
Individuals:	Fidler	United States of America
	Lefkoff	United States of America
	Macks	United States of America
	Roshko	United States of America

**Item 2(d).** Title of Class of Securities: Common Stock

**Item 2(e).** CUSIP Number: 00211Y 10 0

**Item 3.** Not applicable.



**Item 4. Ownership**

The following information with respect to the ownership of the Common Stock of the Issuer by the persons filing this statement on Amendment No. 1 to the Statement on Schedule 13G is provided as of December 31, 2009:

<b>Fund Entities</b>	<b>Shares Held Directly</b>	<b>Sole Voting Power</b>	<b>Shared Voting Power</b>	<b>Sole Dispositive Power</b>	<b>Shared Dispositive Power</b>	<b>Beneficial Ownership</b>	<b>Percentage of Class</b>
Boulder IV Annex (1)	0	0	0	0	0	0	0.0%
BV IV LP (1)	0	0	0	0	0	0	0.0%
BV PARTNERS IV LLC (1)	0	0	0	0	0	0	0.0%
Fidler (1)	0	0	0	0	0	0	0.0%
Lefkoff (1)	0	0	0	0	0	0	0.0%
Lawrence (1)	0	0	0	0	0	0	0.0%
Roshko (1)	0	0	0	0	0	0	0.0%

(1) BV PARTNERS IV LLC serves as the general partner of BV IV Annex and BV IV LP, and owns no securities of the Issuer directly. Fidler, Lefkoff, Macks and Roshko are Managing Members of PARTNERS IV LLC and share voting and dispositive power over the shares held by BV IV Annex and BV IV LP.

**Item 5. Ownership of 5 Percent or Less of a Class**

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than 5 percent of the class of securities, check the following box

**Item 6. Ownership of More than 5 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 a Group**

Not applicable.

**Item 10. Certification**

By signing below I 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.

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SIGNATURE

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

Dated: February 12, 2010

BOULDER VENTURES IV (ANNEX), L.P.

By: BV Partners IV, L.L.C.

Its: General Partner

By: /s/ Kyle Lefkoff

Kyle Lefkoff, Managing Member

BOULDER VENTURES IV, L.P.

By: BV Partners IV, LLC

Its: General Partner

By: /s/ Kyle Lefkoff

Kyle Lefkoff, Managing Member

BV PARTNERS IV, LLC

By: /s/ Kyle Lefkoff

Kyle Lefkoff, Managing Member

/s/ Josh E. Fidler

Josh E. Fidler

/s/ Kyle Lefkoff

Kyle Lefkoff

/s/ Lawrence M. Macks

Lawrence M. Macks

/s/ Peter Roshko

Peter Roshko

**Exhibit(s):**

A Joint Filing Statement

EXHIBIT A  
JOINT FILING STATEMENT

We, the undersigned, hereby express our agreement that the attached Schedule 13G (or any amendments thereto) relating to the Common Stock of ARCA biopharma, Inc. is filed on behalf of each of us.

Dated: February 12, 2010

BOULDER VENTURES IV (ANNEX), L.P.

By: BV Partners IV, L.L.C.  
Its: General Partner

By: /s/ Kyle Lefkoff  
Kyle Lefkoff, Managing Member

BOULDER VENTURES IV, L.P.

By: BV Partners IV, LLC  
Its: General Partner

By: /s/ Kyle Lefkoff  
Kyle Lefkoff, Managing Member

BV PARTNERS IV, LLC

By: /s/ Kyle Lefkoff  
Kyle Lefkoff, Managing Member

/s/ Josh E. Fidler  
Josh E. Fidler

/s/ Kyle Lefkoff  
Kyle Lefkoff

/s/ Lawrence M. Macks  
Lawrence M. Macks

/s/ Peter Roshko  
Peter Roshko