

ARCA biopharma, Inc.
Form SC 13D
June 29, 2015

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

SCHEDULE 13D

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

ARCA biopharma, Inc.

(Name of Issuer)

Common Stock, \$.001 par value

(Title of Class of Securities)

00211Y100

(CUSIP Number)

Louis S. Citron, Esq.
New Enterprise Associates

1954 Greenspring Drive, Suite 600
Timonium, MD 21093
(410) 842-4000

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

June 16, 2015

(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box. ☐

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See §240.13d-7 for other parties to whom copies are to be sent.

Edgar Filing: ARCA biopharma, Inc. - Form SC 13D

*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 disclosures provided in a prior cover page.

The information required on 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).

CUSIP No. 00211Y100

13D

Page 2 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Growth Equity Opportunities Fund IV, LLC

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

(a) ☐(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

WC

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware Limited Liability Company

7

SOLE VOTING POWER

NUMBER OF
SHARES

0 shares

BENEFICIALLY

8

SHARED VOTING POWER

OWNED BY

14,310,051 shares

EACH
REPORTING

9

SOLE DISPOSITIVE POWER

PERSON

0 shares

WITH

10

SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

OO

CUSIP No. 00211Y100

13D

Page 3 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

New Enterprise Associates 15, L.P.

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

(a) ☐

(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware Limited Partnership

7

SOLE VOTING POWER

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

0 shares

8

SHARED VOTING POWER

14,310,051 shares

9

SOLE DISPOSITIVE POWER

0 shares

10

SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

PN

CUSIP No. 00211Y100

13D

Page 4 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

NEA Partners 15, L.P.

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

(a) ☐

(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware Limited Partnership

	7	SOLE VOTING POWER
NUMBER OF		0 shares
SHARES		
BENEFICIALLY	8	SHARED VOTING POWER
OWNED BY		14,310,051 shares
EACH		
REPORTING	9	SOLE DISPOSITIVE POWER
PERSON		0 shares
WITH		
	10	SHARED DISPOSITIVE POWER
		14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

PN

CUSIP No. 00211Y100

13D

Page 5 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

NEA 15 GP, LLC

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

(a) o

(b) o

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) o

6 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware Limited Liability Company

7

SOLE VOTING POWER

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

0 shares

8

SHARED VOTING POWER

14,310,051 shares

9

SOLE DISPOSITIVE POWER

0 shares

10

SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) o

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

OO

CUSIP No. 00211Y100

13D

Page 6 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Peter J. Barris

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

(a) ☐

(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7

SOLE VOTING POWER

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

0 shares

8

SHARED VOTING POWER

14,310,051 shares

9

SOLE DISPOSITIVE POWER

0 shares

10

SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 7 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Forest Baskett

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

(a) ☐(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7

SOLE VOTING POWER

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

0 shares

8

SHARED VOTING POWER

14,310,051 shares

9

SOLE DISPOSITIVE POWER

0 shares

10

SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 8 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Anthony A. Florence, Jr.

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

(a) ☐

(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7 SOLE VOTING POWER

NUMBER OF 0 shares

SHARES

BENEFICIALLY

OWNED BY

EACH

REPORTING

PERSON

WITH

8 SHARED VOTING POWER

14,310,051 shares

9 SOLE DISPOSITIVE POWER

0 shares

10 SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 9 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Krishna S. Kolluri

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

(a) ☐

(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7

SOLE VOTING POWER

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

0 shares

8

SHARED VOTING POWER

14,310,051 shares

9

SOLE DISPOSITIVE POWER

0 shares

10

SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 10 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Joshua Makower

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

(a) ☐(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7

SOLE VOTING POWER

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

0 shares

8

SHARED VOTING POWER

14,310,051 shares

9

SOLE DISPOSITIVE POWER

0 shares

10

SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 11 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

David M. Mott

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

(a) ☐(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7

SOLE VOTING POWER

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

0 shares

8

SHARED VOTING POWER

14,310,051 shares

9

SOLE DISPOSITIVE POWER

0 shares

10

SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 12 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Jon M. Sakoda

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

(a) ☐(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7 SOLE VOTING POWER

NUMBER OF 0 shares

SHARES

BENEFICIALLY

8 SHARED VOTING POWER

OWNED BY

14,310,051 shares

EACH

9 SOLE DISPOSITIVE POWER

REPORTING

PERSON

0 shares

WITH

10 SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 13 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Scott D. Sandell

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

(a) ☐(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7 SOLE VOTING POWER

NUMBER OF 0 shares

SHARES

BENEFICIALLY

8 SHARED VOTING POWER

OWNED BY

14,310,051 shares

EACH

9 SOLE DISPOSITIVE POWER

REPORTING

PERSON

0 shares

WITH

10 SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 14 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Peter W. Sonsini

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

(a) ☐

(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7

SOLE VOTING POWER

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH

0 shares

8

SHARED VOTING POWER

14,310,051 shares

9

SOLE DISPOSITIVE POWER

0 shares

10

SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 15 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Ravi Viswanathan

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

(a) ☐(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7 SOLE VOTING POWER

NUMBER OF 0 shares

SHARES

BENEFICIALLY

8 SHARED VOTING POWER

OWNED BY

14,310,051 shares

EACH

9 SOLE DISPOSITIVE POWER

REPORTING

PERSON

0 shares

WITH

10 SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 16 of 27 Pages

1 NAMES OF REPORTING PERSONS.

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY).

Harry R. Weller

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

(a) ☐(b) ☐

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

AF

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) ☐

6 CITIZENSHIP OR PLACE OF ORGANIZATION

United States citizen

7 SOLE VOTING POWER

NUMBER OF 0 shares

SHARES

BENEFICIALLY

8 SHARED VOTING POWER

OWNED BY

14,310,051 shares

EACH

9 SOLE DISPOSITIVE POWER

REPORTING

PERSON

0 shares

WITH

10 SHARED DISPOSITIVE POWER

14,310,051 shares

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

14,310,051 shares

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) ☐

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

21.3%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 00211Y100

13D

Page 17 of 27 Pages

Schedule 13D

Item 1. Security and Issuer.

This statement relates to the common stock, \$.001 par value (the “Common Stock”) of ARCA biopharma, Inc. (the “Issuer”) having its principal executive office at 11080 Circle Point Road, Suite 140, Westminster, CO 80020.

Item 2. Identity and Background.

This statement is being filed by:

(a) Growth Equity Opportunities Fund IV, LLC (“GEO”);

(b) New Enterprise Associates 15, L.P. (“NEA 15”), which is the sole member of GEO, NEA Partners 15, L.P. (“NEA Partners 15”), which is the sole general partner of NEA 15; and NEA 15 GP, LLC (“NEA 15 LLC” and, together with NEA Partners 15, the “Control Entities”), which is the sole general partner of NEA Partners 15; and

(c) Peter J. Barris (“Barris”), Forest Baskett (“Baskett”), Anthony A Florence, Jr. (“Florence”), Krishna S. Kolluri (“Kolluri”), Joshua Makower (“Makower”), David M. Mott (“Mott”), Jon M. Sakoda (“Sakoda”), Scott D. Sandell (“Sandell”), Peter W. Sonsini (“Sonsini”), Ravi Viswanathan (“Viswanathan”) and Harry R. Weller (“Weller”) (together, the “Managers”). The Managers are the managers of NEA 15 LLC.

The persons named in this Item 2 are referred to individually herein as a “Reporting Person” and collectively as the “Reporting Persons.”

The address of the principal business office of GEO and each Control Entity is New Enterprise Associates, 1954 Greenspring Drive, Suite 600, Timonium, MD 21093. The address of the principal business office of each of Barris, Florence, Mott and Weller is New Enterprise Associates, 5425 Wisconsin Avenue, Suite 800, Chevy Chase, MD 20815. The address of the principal business office of Baskett, Kolluri, Makower, Sakoda, Sandell, Sonsini and Viswanathan is New Enterprise Associates, 2855 Sand Hill Road, Menlo Park, California 94025.

The principal business of GEO and NEA 15 is to invest in and assist growth-oriented businesses located principally in the United States. The principal business of NEA Partners 15 is to act as the sole general partner of NEA 15. The principal business of NEA 15 LLC is to act as the sole general partner of NEA Partners 15. The principal business of each of the Managers is to manage the Control Entities, GEO and a number of affiliated partnerships with similar businesses.

During the five years prior to the date hereof, none of the Reporting Persons has been convicted in a criminal proceeding or has been a party to a civil proceeding ending in a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

GEO and NEA 15 LLC are limited liability companies organized under the laws of the State of Delaware. NEA 15 and NEA Partners 15 are limited partnerships organized under the laws of the State of Delaware. Each of the

Managers is a United States citizen.

Item 3. Source and Amount of Funds or Other Consideration.

On June 10, 2015, GEO entered into a Securities Purchase Agreement among the Issuer, GEO and certain other purchasers (the "Purchase Agreement"), a form of which is attached as Exhibit 10.1 to the Issuer's Form 8-K filed on June 11, 2015 (the "8-K") and incorporated by reference herein, pursuant to which GEO acquired 10,221,465 shares (the "GEO Shares") of Common Stock and a certain Warrant to Purchase Common Stock, a form of which is attached as Exhibit 4.1 to the 8-K and incorporated by reference herein, subject to certain limitations, up to an aggregate of 4,088,586 shares of Common Stock (the "GEO Warrant Shares" and, together with the GEO Shares, the "Securities"), exercisable immediately, from the Issuer, at a purchase price of \$0.8805 per unit, in a private placement transaction (the "Offering") for an aggregate purchase price to GEO of \$8,999,999.93

CUSIP No. 00211Y100

13D

Page 18 of 27 Pages

The working capital of GEO was the source of the funds for the purchase of the Securities. No part of the purchase price of the Securities was represented by funds or other consideration borrowed or otherwise obtained for the purpose of acquiring, holding, trading or voting the Securities or the Total Warrant Shares.

Item 4. Purpose of Transaction.

GEO acquired the Securities for investment purposes. Depending on market conditions, its continuing evaluation of the business and prospects of the Issuer and other factors, GEO and other Reporting Persons may dispose of or acquire additional shares of the Issuer. Except as set forth above, none of the Reporting Persons has any present plans which relate to or would result in:

- (a) The acquisition by any person of additional securities of the Issuer, or the disposition of securities of the Issuer;
- (b) An extraordinary corporate transaction, such as a merger, reorganization or liquidation, involving the Issuer or any of its subsidiaries;
- (c) A sale or transfer of a material amount of assets of the Issuer or any of its subsidiaries;
- (d) Any change in the present board of directors or management of the Issuer, including any plans or proposals to change the number or term of directors or to fill any existing vacancies on the board;
- (e) Any material change in the present capitalization or dividend policy of the Issuer;
- (f) Any other material change in the Issuer's business or corporate structure;
- (g) Changes in the Issuer's charter, bylaws or instruments corresponding thereto or other actions which may impede the acquisition of control of the Issuer by any person;
- (h) Causing a class of securities of the Issuer to be delisted from a national securities exchange or to cease to be authorized to be quoted in an inter-dealer quotation system of a registered national securities association;
- (i) A class of equity securities of the Issuer becoming eligible for termination of registration pursuant to Section 12(g)(4) of the Securities Exchange Act of 1934; or
- (j) Any action similar to any of those enumerated above.

Item 5. Interest in Securities of the Issuer.

GEO is the record owner of the Securities. As the sole member of GEO, NEA 15 may be deemed to own beneficially the GEO Shares. As the general partner of NEA 15, NEA Partners 15 may be deemed to own beneficially the GEO Shares. As the sole general partner of NEA Partners 15, NEA 15 LLC may be deemed to own beneficially the GEO Shares. As members of NEA 15 LLC, each of the Managers may be deemed to own beneficially the GEO Shares.

CUSIP No. 00211Y100

13D

Page 19 of 27 Pages

Each Reporting Person disclaims beneficial ownership of the GEO Shares other than those shares which such person owns of record.

The percentage of outstanding Common Stock of the Issuer which may be deemed to be beneficially owned by each Reporting Person is set forth on Line 13 of such Reporting Person's cover sheet. Such percentage was calculated based on 67,308,576 shares deemed to be outstanding, which includes (a) 21,198,411 shares of Common Stock reported to be outstanding as of May 11, 2015 in the Issuer's Form 10-Q filed on May 12, 2015, (b) an aggregate of 42,021,579 shares of Common Stock newly issued by the Issuer in the Offering and reported in the 8-K and (c) the GEO Warrant Shares.

(b) Regarding the number of shares as to which such person has:

(i) sole power to vote or to direct the vote: See line 7 of cover sheets

(ii) shared power to vote or to direct the vote: See line 8 of cover sheets

(iii) sole power to dispose or to direct the disposition: See line 9 of cover sheets.

(iv) shared power to dispose or to direct the disposition: See line 10 of cover sheets

(c) Except as set forth in Item 3 above, none of the Reporting Persons has effected any transaction in the Common Stock during the last 60 days.

(d) No other person is known to have the right to receive or the power to direct the receipt of dividends from, or any proceeds from the sale of, Shares beneficially owned by any of the Reporting Persons.

(e) Not applicable.

Item 6. Contracts, Arrangements, Undertakings or Relationships with Respect to Securities of the Issuer.

Not applicable.

Item 7. Material to be Filed as Exhibits.

Exhibit 1 – Agreement regarding filing of joint Schedule 13D.

Exhibit 2 – Power of Attorney regarding filings under the Securities Exchange Act of 1934, as amended.

CUSIP No. 00211Y100

13D

Page 20 of 27 Pages

SIGNATURE

After reasonable inquiry and to the best of its knowledge and belief, each of the undersigned certifies that the information set forth in this statement is true, complete and correct.

EXECUTED this 29th day of June, 2015.

GROWTH EQUITY OPPORTUNITIES FUND IV, LLC

By: NEW ENTERPRISE ASSOCIATES 15, L.P.
Sole Member

By: NEA PARTNERS 15, L.P.
General Partner

By: NEA 15 GP, LLC
General Partner

By: *
Louis S. Citron
Chief Legal Officer

NEW ENTERPRISE ASSOCIATES 15, L.P.

By: NEA PARTNERS 15, L.P.
General Partner

By: NEA 15 GP, LLC
General Partner

By: *
Louis S. Citron
Chief Legal Officer

NEA PARTNERS 15, L.P.

By: NEA 15 GP, LLC
General Partner

By: *

Louis S. Citron
Chief Legal Officer

CUSIP No. 00211Y100

13D

Page 21 of 27 Pages

NEA 15 GP, LLC

By: *

Louis S. Citron
Chief Legal Officer

*

Peter J. Barris

*

Forest Baskett

*

Anthony A. Florence, Jr.

*

Krishna S. Kolluri

*

Joshua Makower

*

David A. Mott

*

Jon M. Sakoda

*

Scott D. Sandell

CUSIP No. 00211Y100

13D

Page 22 of 27 Pages

*

Peter W. Sonsini

*

Ravi Viswanathan

*

Harry R. Weller

*/s/ Louis S. Citron

Louis S. Citron

As attorney-in-fact

This Schedule 13D was executed by Louis S. Citron on behalf of the individuals listed above pursuant to a Power of Attorney a copy of which is attached as Exhibit 2.

CUSIP No. 00211Y100

13D

Page 23 of 27 Pages

EXHIBIT 1

AGREEMENT

Pursuant to Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, the undersigned hereby agree that only one statement containing the information required by Schedule 13D need be filed with respect to the ownership by each of the undersigned of shares of stock of ARCA biopharma, Inc.

EXECUTED this 29th day of June, 2015.

GROWTH EQUITY OPPORTUNITIES FUND IV, LLC

By: NEW ENTERPRISE ASSOCIATES 15, L.P.
Sole Member

By: NEA PARTNERS 15, L.P.
General Partner

By: NEA 15 GP, LLC
General Partner

By: *
Louis S. Citron
Chief Legal Officer

NEW ENTERPRISE ASSOCIATES 15, L.P.

By: NEA PARTNERS 15, L.P.
General Partner

By: NEA 15 GP, LLC
General Partner

By: *
Louis S. Citron
Chief Legal Officer

NEA PARTNERS 15, L.P.

By: NEA 15 GP, LLC
General Partner

By: *

Louis S. Citron
Chief Legal Officer

CUSIP No. 00211Y100

13D

Page 24 of 27 Pages

NEA 15 GP, LLC

By: *

Louis S. Citron
Chief Legal Officer

*

Peter J. Barris

*

Forest Baskett

*

Anthony A. Florence, Jr.

*

Krishna S. Kolluri

*

Joshua Makower

*

David A. Mott

*

Jon M. Sakoda

*

Scott D. Sandell

CUSIP No. 00211Y100

13D

Page 25 of 27 Pages

*

Peter W. Sonsini

*

Ravi Viswanathan

*

Harry R. Weller

*/s/ Louis S. Citron

Louis S. Citron

As attorney-in-fact

This Agreement relating to Schedule 13D was executed by Louis S. Citron on behalf of the individuals listed above pursuant to a Power of Attorney a copy of which is attached hereto as Exhibit 2.

CUSIP No. 00211Y100

13D

Page 26 of 27 Pages

EXHIBIT 2

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned hereby constitutes and appoints Louis S. Citron, Timothy Schaller, Sasha Keough and Stephanie Brecher, and each of them, with full power to act without the others, his or her true and lawful attorney-in-fact, with full power of substitution, to sign any and all instruments, certificates and documents that may be necessary, desirable or appropriate to be executed on behalf of himself as an individual or in his or her capacity as a direct or indirect general partner, director, officer or manager of any partnership, corporation or limited liability company, pursuant to section 13 or 16 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and any and all regulations promulgated thereunder, and to file the same, with all exhibits thereto, and any other documents in connection therewith, with the Securities and Exchange Commission, and with any other entity when and if such is mandated by the Exchange Act or by the Financial Industry Regulatory Authority, granting unto said attorney-in-fact full power and authority to do and perform each and every act and thing necessary, desirable or appropriate, fully to all intents and purposes as he or she might or could do in person, thereby ratifying and confirming all that said attorney-in-fact, or his or her substitutes, may lawfully do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, this Power of Attorney has been signed as of the 1st day of August, 2013.

/s/ M. James Barrett
M. James Barrett

/s/ Peter J. Barris
Peter J. Barris

/s/ Forest Baskett
Forest Baskett

/s/ Rohini Chakravarthy
Rohini Chakravarthy

/s/ Patrick Chung
Patrick Chung

/s/ Ryan Drant
Ryan Drant

/s/ Anthony A. Florence
Anthony A. Florence

/s/ Robert Garland
Robert Garland

/s/ Paul Hsiao
Paul Hsiao

/s/ Patrick J. Kerins
Patrick J. Kerins

/s/ Suzanne King
Suzanne King

CUSIP No. 00211Y100

13D

Page 27 of 27 Pages

/s/ Krishna S. Kolluri
Krishna S. Kolluri

/s/ C. Richard Kramlich
C. Richard Kramlich

/s/ Edward Mathers
Edward Mathers

/s/ David M. Mott
David M. Mott

/s/ John M. Nehra
John M. Nehra

/s/ Charles W. Newhall III
Charles W. Newhall III

/s/ Jason R. Nunn
Jason R. Nunn

/s/ Jon Sakoda
Jon Sakoda

/s/ Scott D. Sandell
Scott D. Sandell

/s/ Peter W. Sonsini
Peter W. Sonsini

/s/ A. Brooke Seawell
A. Brooke Seawell

/s/ Ravi Viswanathan
Ravi Viswanathan

/s/ Paul E. Walker
Paul E. Walker

/s/ Harry Weller
Harry Weller