

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

SCHEDULE 13D

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

**Bellerophon Therapeutics, Inc.**

(Name of Issuer)

Common Stock, \$0.01 par value

(Title of Class of Securities)

078771102

(CUSIP Number)

Mark McDonnell  
ARCH Venture Corporation  
8725 W. Higgins Road Suite 290  
Chicago, IL 60631  
773-380-6600

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

February 19, 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.

\*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).

**Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.**

1	NAMES OF REPORTING PERSONS. I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)  ARCH Venture Fund VI, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="radio"/> (b) <input type="radio"/>	
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) <input type="radio"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares
	8	SHARED VOTING POWER  965,660 shares
	9	SOLE DISPOSITIVE POWER  0 shares
	10	SHARED DISPOSITIVE POWER  965,660 shares
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  965,660 shares	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="radio"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  7.5%	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  PN	

1	NAMES OF REPORTING PERSONS. I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)  ARCH Venture Partners VI, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)         (a) <input type="radio"/> (b) <input type="radio"/>	
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) <input type="radio"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares
	8	SHARED VOTING POWER  965,660 shares
	9	SOLE DISPOSITIVE POWER  0 shares
	10	SHARED DISPOSITIVE POWER  965,660 shares
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  965,660 shares	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="radio"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  7.5%	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  PN	

1	NAMES OF REPORTING PERSONS. I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)  ARCH Venture Partners VI, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="radio"/> (b) <input type="radio"/>	
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) <input type="radio"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares
	8	SHARED VOTING POWER  965,660 shares
	9	SOLE DISPOSITIVE POWER  0 shares
	10	SHARED DISPOSITIVE POWER  965,660 shares
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  965,660 shares	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="radio"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  7.5%	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  OO	

1	NAMES OF REPORTING PERSONS. I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)  Clinton Bybee	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)         (a) <input type="radio"/> (b) <input type="radio"/>	
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) <input type="radio"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares
	8	SHARED VOTING POWER  965,660 shares
	9	SOLE DISPOSITIVE POWER  0 shares
	10	SHARED DISPOSITIVE POWER  965,660 shares
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  965,660 shares	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="radio"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  7.5%	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN	

1	NAMES OF REPORTING PERSONS. I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)  Keith Crandell	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="radio"/> (b) <input type="radio"/>	
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) <input type="radio"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares
	8	SHARED VOTING POWER  965,660 shares
	9	SOLE DISPOSITIVE POWER  0 shares
	10	SHARED DISPOSITIVE POWER  965,660 shares
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  965,660 shares	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="radio"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  7.5%	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN	

1	NAMES OF REPORTING PERSONS. I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)  Robert Nelsen	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="radio"/> (b) <input type="radio"/>	
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) <input type="radio"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares
	8	SHARED VOTING POWER  965,660 shares
	9	SOLE DISPOSITIVE POWER  0 shares
	10	SHARED DISPOSITIVE POWER  965,660 shares
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  965,660 shares	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="radio"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  7.5%	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  IN	

Item 1. Security and Issuer.

This statement relates to the Common Stock, \$0.01 par value per share (the “Common Stock”), of Bellerophon Therapeutics, Inc. (the “Issuer”) having its principal executive office at 53 Frontage Road, Suite 301, Hampton, NJ 08827.

Item 2. Identity and Background.

- (a) This statement is being filed by: (1) ARCH Venture Fund VI, L.P. (“ARCH Venture Fund VI”), (2) ARCH Venture Partners VI, L.P. (“AVP VI LP”), which is the sole general partner of ARCH Venture Fund VI, (3) ARCH Venture Partners VI, LLC (“AVP VI LLC”), which is the sole general partner of AVP VI LP, (4) Clinton Bybee (“Bybee”), (5) Keith Crandell (“Crandell”), and (6) Robert Nelsen (“Nelsen” and, together with Bybee and Crandell, collectively, the “Managing Directors” and each individually, a “Managing Director”). Each of the individuals and entities above shall be referred to herein individually as a “Reporting Person” and collectively as the “Reporting Persons”.
- (b) The business address of each of the Reporting Persons is 8725 West Higgins Road, Suite 290, Chicago, IL, 60631.
- (c) The principal business of ARCH Venture Fund VI is to invest and assist in developmental and emerging businesses located principally in the United States. The principal business of AVP VI LP is to act as the general partner of ARCH Venture Fund VI. The principal business of AVP VI LLC is to act as the general partner of AVP VI LP. The principal business of each of the Managing Directors is to act as managing directors of AVP VI LLC and a number of affiliated partnerships with similar businesses.
- (d) During the five years prior to the date hereof, none of the Reporting Persons has been convicted in a criminal proceeding.
- (e) During the five years prior to the date hereof, none of the Reporting Persons has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction 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.
- (f) Each of ARCH Venture Fund VI and AVP VI LP is a Delaware limited partnership. AVP VI LLC is a Delaware limited liability company. Each of the Managing Directors is a United States citizen.

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

Prior to February 2014, Bellerophon was a wholly-owned subsidiary of Ikaria, Inc. (“Ikaria”). In February 2014, Ikaria distributed all of the then outstanding units of Bellerophon to its shareholders through the payment of a special dividend on a pro rata basis based on each shareholder’s ownership of Ikaria capital stock (the “Spin-Out”). In the Spin-Out, ARCH Venture Fund VI received 752,994 units, which later converted into Common Stock in connection with Bellerophon’s conversion from a limited liability company to a corporation on February 12, 2015. On February 19, 2015, ARCH Venture Fund VI purchased 212,666 shares of Common Stock at a purchase price of \$12.00 per share.

The working capital of ARCH Venture Fund VI was the source of the funds for the purchase of shares on February 19, 2015. No part of the purchase price paid by this entity was represented by funds or other consideration borrowed or otherwise obtained for the purpose of acquiring, holding, trading or voting the shares of Common Stock described above. The total amount paid by ARCH Venture Fund VI for securities purchased in the above-listed transaction is as follows:

ARCH Venture Fund VI:	\$2,551,992
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Item 4. Purpose of Transaction.

ARCH Venture Fund VI acquired the Common Stock for investment purposes. Depending on market conditions, the continuing evaluation of the business and prospects of the Issuer and other factors, ARCH Venture Fund VI and other Reporting Persons may dispose of or acquire additional shares of Common Stock 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.
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Item 5. Interest in Securities of the Issuer.

- (a) ARCH Venture Fund VI is the record owner of 965,660 shares of Common Stock (the “Record Shares”).

AVP VI LP, as the sole general partner of ARCH Venture Fund VI, may be deemed to beneficially own the Record Shares. AVP VI LLC, as the sole general partner of AVP VI LP, may be deemed to beneficially own the Record Shares.

In addition, each of the Managing Directors may be deemed to share the power to direct the disposition and vote of the Record Shares. Each Reporting Person disclaims beneficial ownership of all securities except for the shares, if any, held of record by such Reporting Person.

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 the 12,905,326 shares of Common Stock reported by the Issuer to be outstanding after the Issuer’s public offering of securities in the Issuer’s prospectus Form 424B4 filed with the Securities and Exchange Commission on February 13, 2015.

- (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 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.

ARCH Venture Fund VI is a party to that certain Registration Rights Agreement (the “Registration Rights Agreement”), dated February 12, 2015, which is attached as an exhibit to the Issuer’s Amendment No. 1 to Form S-1 filed on February 3, 2015 and incorporated by reference herein. Pursuant to the Registration Rights Agreement, ARCH Venture Fund VI has certain registration rights with respect to its Common Stock.

Item 7. Material to be Filed as Exhibits.

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

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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.

Date: February 23, 2015

ARCH VENTURE FUND VI, L.P.

By: ARCH Venture Partners VI, L.P.  
its General Partner

By: ARCH Venture Partners VI, LLC  
its General Partner

By: \_\_\_\_\_  
\*  
Managing Director

ARCH VENTURE PARTNERS VI, L.P.

By: ARCH Venture Partners VI, LLC  
its General Partner

By: \_\_\_\_\_  
\*  
Managing Director

ARCH VENTURE PARTNERS VI, LLC

By: \_\_\_\_\_  
\*  
Managing Director

\_\_\_\_\_  
\*  
Clinton Bybee

\_\_\_\_\_  
\*  
Keith Crandell

\_\_\_\_\_  
\*  
Robert Nelsen

\* By: /s/ Mark McDonnell  
Mark McDonnell as Attorney-in-Fact

\* This Schedule 13D was executed by Mark McDonnell pursuant to a Power of Attorney filed as Exhibit 24 to the Form 3 relating to the beneficial ownership of shares of Kythera Biopharmaceuticals, Inc. by the Reporting Persons filed with the Securities Exchange Commission on October 10, 2012 and incorporated herein in its entirety by reference.

**Exhibit 1****AGREEMENT OF JOINT FILING**

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 Common Stock of Bellerophon Therapeutics, Inc.

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original.

Date: February 23, 2015

ARCH VENTURE FUND VI, L.P.

By: ARCH Venture Partners VI, L.P.  
its General Partner

By: ARCH Venture Partners VI, LLC  
its General Partner

By: \_\_\_\_\_  
\*  
Managing Director

ARCH VENTURE PARTNERS VI, L.P.

By: ARCH Venture Partners VI, LLC  
its General Partner

By: \_\_\_\_\_  
\*  
Managing Director

ARCH VENTURE PARTNERS VI, LLC

By: \_\_\_\_\_  
\*  
Managing Director

\_\_\_\_\_  
\*  
Clinton Bybee

\_\_\_\_\_  
\*  
Keith Crandell

\_\_\_\_\_  
\*  
Robert Nelsen

\* By: /s/ Mark McDonnell  
Mark McDonnell as Attorney-in-Fact

\* This Schedule 13D was executed by Mark McDonnell pursuant to a Power of Attorney filed as Exhibit 24 to the Form 3 relating to the beneficial ownership of shares of Kythera Biopharmaceuticals, Inc. by the Reporting Persons filed with the Securities Exchange Commission on October 10, 2012 and incorporated herein in its entirety by reference.