

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

SCHEDULE 13G
(Rule 13d-102)

Information Statement Pursuant to Rules 13d-1 and 13d-2
Under the Securities Exchange Act of 1934
(Amendment No.)*

SPERO THERAPUTICS, INC.

(Name of Issuer)

Common Stock, \$0.01

(Title of Class of Securities)

84833T103

(CUSIP Number)

December 31, 2017

(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 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).

1. Name of Reporting Person
S.S. or I.R.S. Identification No. of Above Person
Atlas Venture Fund IX, L.P.

2. Check the Appropriate Box if a Member of a Group*

- (a)
(b)

3. SEC Use Only

4. Citizenship or Place of Organization
Delaware

5. Sole Voting Power

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

6. Shared Voting Power
1,376,968

7. Sole Dispositive Power

8. Shared Dispositive Power
1,376,968

9. Aggregate Amount Beneficially Owned by Each Reporting Person
1,376,968

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

11. Percent of Class Represented by Amount in Row (9)
9.58%

12. Type of Reporting Person*
PN

2

1. Name of Reporting Person
S.S. or I.R.S. Identification No. of Above Person
Atlas Venture Associates IX, L.P.

2. Check the Appropriate Box if a Member of a Group*

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization
Delaware

5. Sole Voting Power

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

6. Shared Voting Power
1,376,968

7. Sole Dispositive Power

8. Shared Dispositive Power
1,376,968

9. Aggregate Amount Beneficially Owned by Each Reporting Person
1,376,968

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

11. Percent of Class Represented by Amount in Row (9)
9.58%

12. Type of Reporting Person*
PN

3

1. Name of Reporting Person
S.S. or I.R.S. Identification No. of Above Person
Atlas Venture Associates IX, LLC

2. Check the Appropriate Box if a Member of a Group*

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization
Delaware

5. Sole Voting Power

6. Shared Voting Power
1,376,968

7. Sole Dispositive Power

8. Shared Dispositive Power
1,376,968

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

9. Aggregate Amount Beneficially Owned by Each Reporting Person
1,376,968

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

11. Percent of Class Represented by Amount in Row (9)
9.58%

12. Type of Reporting Person*
OO

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Item 1(a). Name of Issuer
The name of the issuer to which this filing on Schedule 13G relates is Spero Therapeutics, Inc. (the "**Company**").

Item 1(b). Address of Issuer's Principal Executive Offices
The principal executive offices of the Company are located at 675 Massachusetts Avenue, 14th Floor, Cambridge, Massachusetts, 02139.

Item 2(a). Name of Person Filing
This Statement is being filed on behalf of Atlas Venture Fund IX, L.P. ("**Atlas IX**"), Atlas Venture Associates IX, L.P. ("**AVA IX LP**"), the sole general partner of Atlas IX, and Atlas Venture Associates IX, LLC ("**AVA IX LLC**"), the sole general partner of AVA IX LP.

Item 2(b). Address of Principal Business Office or, if none, Residence
The principal business address of each of Atlas IX, AVA IX LP, and AVA IX LLC is 25 First Street, Suite 303, Cambridge, MA 02141.

Item 2(c). Citizenship
Each of Atlas IX, AVA IX LP and AVA IX LLC, is organized under the laws of Delaware.

Item 2(d). Title of Class of Securities
The class of equity securities of the Company to which this filing on Schedule 13G relates is Common Stock, par value \$0.0001 ("**Common Stock**").

Item 2(e). CUSIP Number
The CUSIP number of the Company's Common Stock is 84833T103.

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.

(a) Broker or dealer registered under section 15 of the Act (15 U.S.C. 78o).

- (b) o Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 73c).
- (c) o Insurance company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c).
- (d) o Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8).
- (e) o An investment adviser in accordance with §13d-1(b)(1)(ii)(E).
- (f) o An employee benefit plan or endowment fund in accordance with §240.13d-1(b)(1)(ii)(F).
- (g) o A parent holding company or control person in accordance with §240.13d-1(b)(1)(ii)(G).
- (h) o A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813).
- (i) o A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3).
- (j) o Group, in accordance with §240.13d-1(b)(1)(ii)(J).
- o If this statement is filed pursuant to §240.13d-1(c), check this box.

Item 4. Ownership

Item 4(a). Amount beneficially owned
 As of the close of business on December 31, 2017, Atlas IX is the record holder of 1,376,968 shares of Common Stock (the “**Atlas IX Shares**”). AVA IX LP is the sole general partner of Atlas IX. AVA IX LLC is the sole general partner of AVA IX LP. No person other than the respective owner referred to herein of the Atlas IX Shares is known to have the right to receive or the power to direct the receipt of dividends from or the proceeds from the sale of such Atlas IX Shares. Each of Atlas IX, AVA IX LP, and AVA IX LLC disclaim beneficial ownership of the Atlas IX Shares except for such shares, if any, such person holds of record.

Item 4(b). Percent of class
 As of the close of business on December 31, 2017, Atlas IX was the beneficial owner of 9.58% of the Common Stock.

Item 4(c). Number of shares as to which the person has:

Reporting Person	Number of Shares of Common Stock			
	(i)	(ii)	(iii)	(iv)
Atlas IX	-0-	1,376,968	-0-	1,376,968
AVA IX LP	-0-	1,376,968	-0-	1,376,968
AVA IX LLC	-0-	1,376,968	-0-	1,376,968

- (i) Sole power to vote or direct the vote

- (ii) Shared power to vote or to direct the vote

- (iii) Sole power to dispose or to direct the disposition of

- (iv) Shared power to dispose or to direct the disposition of

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:

Not Applicable.

Item 8. Identification and Classification of Members of the Group

Not Applicable. The Filing Persons expressly disclaim membership in a "group" as used in Rule 13d-5(b)(1).

Item 9. Notice of Dissolution of Group

Not Applicable.

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Item 10. Certification

Not Applicable. This statement on Schedule 13G is not filed pursuant to Rule 13d-1(b) or 13(d)-1(c).

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 13, 2018

ATLAS VENTURE FUND IX, L.P.

By: Atlas Venture Associates IX, L.P.,
its general partner
By: Atlas Venture Associates IX, LLC,
its general partner

By: /s/ Frank Castellucci

Name: Frank Castellucci

Title: Secretary

ATLAS VENTURE ASSOCIATES IX, L.P.

By: Atlas Venture Associates IX, LLC,
its general partner

By: /s/ Frank Castellucci

Name: Frank Castellucci

Title: Secretary

ATLAS VENTURE ASSOCIATES IX, LLC

By: /s/ Frank Castellucci

Name: Frank Castellucci

Title: Secretary

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Exhibit A

Joint Filing Agreement

The undersigned acknowledge and agree that the foregoing statement on Schedule 13G is filed on behalf of each of the undersigned and that all subsequent amendments to this statement on Schedule 13G shall be filed on behalf of each of the undersigned without the necessity of filing additional joint filing statements. The undersigned acknowledge that each shall be responsible for the timely filing of such amendments, and for the completeness and accuracy of the information concerning him, her or it contained herein, but shall not be responsible for the completeness and accuracy of the information concerning the other entities or persons, except to the extent that he, she or it knows or has reason to believe that such information is inaccurate.

Dated: February 13, 2018

ATLAS VENTURE FUND IX, L.P.

By: Atlas Venture Associates IX, L.P.,
its general partner
By: Atlas Venture Associates IX, LLC,
its general partner

By: /s/ Frank Castellucci

Name: Frank Castellucci

Title: Secretary

ATLAS VENTURE ASSOCIATES IX, L.P.

By: Atlas Venture Associates IX, LLC,
its general partner

By: /s/ Frank Castellucci

Name: Frank Castellucci

Title: Secretary

ATLAS VENTURE ASSOCIATES IX, LLC

By: /s/ Frank Castellucci

Name: Frank Castellucci

Title: Secretary