

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. 3)*

ZAFGEN, INC.

(Name of Issuer)

Common stock, \$0.001

(Title of Class of Securities)

98885E103

(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).

CUSIP No. 98885E103

13G

1. Name of Reporting Person
S.S. or I.R.S. Identification No. of Above Person

Atlas Venture Fund VII, 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

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

5. Sole Voting Power

6. Shared Voting Power
4,632,730 shares

7. Sole Dispositive Power

8. Shared Dispositive Power
4,632,730 shares

9. Aggregate Amount Beneficially Owned by Each Reporting Person
4,632,730 shares

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

11. Percent of Class Represented by Amount in Row (9)
16.85%

12. Type of Reporting Person*
PN

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Item 1(a). Name of Issuer

The name of the issuer to which this filing on Schedule 13G/A relates is Zafgen, Inc. (the "Company").

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

The principal executive offices of the Company are located at 175 Portland Street, 4th Floor, Boston, Massachusetts 02114.

Item 2(a). Name of Person Filing

This Statement is being filed on behalf of Atlas Venture Fund VII, L.P. ("Atlas VII"). Atlas Venture Associates VII, L.P. ("AVA VII LP") is the sole general partner of Atlas VII. Atlas Venture Associates VII, Inc. ("AVA VII Inc.") is the sole general partner of AVA VII LP. Peter Barrett, Bruce Booth, Jeff Fagnan and Jean-Francois Formela, is each a director of AVA VII Inc. (the "Directors").

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

The principal business address of each of Atlas VII, AVA VII LP, AVA VII Inc. and the Directors is 25 First Street, Suite 303, Cambridge, MA 02141.

Item 2(c). Citizenship

Each of Atlas VII, AVA VII LP and AVA VII Inc. is organized under the laws of Delaware. Mr. Barrett is a citizen of the United States. Mr. Booth is a citizen of the United States. Mr. Fagnan is a citizen of the United States. Mr. Formela is a citizen of France.

Item 2(d). Title of Class of Securities

The class of equity securities of the Company to which this filing on Schedule 13G/A relates is Common Stock, par value \$0.001 ("Common Stock").

Item 2(e). CUSIP Number

The CUSIP number of the Company's Common Stock is 98885E103.

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.

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Item 4. Ownership

Item 4(a). Amount beneficially owned

As of the close of business on December 31, 2017, Atlas VII is the record holder of 4,632,730 shares of Common Stock (the "Atlas Shares"). AVA VII LP is the sole general partner of Atlas VII. AVA VII Inc. is the sole general partner of AVA VII LP. Messrs. Barrett, Booth, Fagnan and Formela are the directors of AVA VII Inc. No person other than the respective owner referred to herein of the Atlas 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 Shares. Each of Atlas VII, AVA VII LP, AVA VII Inc. and the Directors disclaim beneficial ownership of the Atlas 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 VII was the beneficial owner of 16.85% of the Common Stock.

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

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

0

(ii) Shared power to vote or direct the vote:
4,632,730

(iii) Sole power to dispose or direct the disposition of:
0

(iv) Shared power to dispose or direct the disposition of:
4,632,730

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

Not Applicable.

All other items reported on the Schedule 13G dated as of February 9, 2017 and filed on behalf of the Filing Persons with respect to the Common Stock of Zafgen, Inc. remain unchanged.

Dated: February 9, 2018

ATLAS VENTURE FUND VII, L.P.
By: Atlas Venture Associates VII, L.P.,
its general partner
By: Atlas Venture Associates VII, Inc.,
its general partner

By: /s/ Frank Castellucci
Name: Frank Castellucci
Title: Secretary
