

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

SCHEDULE 13G

Under the Securities Exchange Act of 1934

Aeglea BioTherapeutics, Inc.

(Name of Issuer)

Common Stock; \$0.0001 par value

(Title of Class of Securities)

00773J103

(CUSIP Number)

April 12, 2016

(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 of 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.

1. Name of Reporting Person

I.R.S. Identification No. of Above Person (Entities Only)

Eli Lilly and Company
35-0470950

These shares are owned directly by Lilly Ventures Fund I, LLC (the "Fund"). LV Management Group LLC (the "Management Group") has sole voting and dispositive authority with respect to the shares. Dr. Shanafelt disclaims beneficial ownership to the shares held of record by the Fund, except to the extent of his pecuniary interest therein.

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

(a)_(b)x

3. SEC Use Only

4. Citizenship or Place of Organization

Indiana

Number of shares beneficially owned by each reporting person with:

5. Sole Voting Power: 0

6. Shared Voting Power: 0

7. Sole Dispositive Power: 0

8. Shared Dispositive Power: 0

9. Aggregate Amount Beneficially Owned by Each Reporting Person

2,568,543

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

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

19.2%

12. Type of Reporting Person

CO

1. Name of Reporting Person

I.R.S. Identification No. of Above Person (Entities Only)

Lilly Ventures Fund I, LLC
26-4769290

These shares are owned directly by Lilly Ventures Fund I, LLC (the "Fund"). LV Management Group LLC (the "Management Group") has sole voting and dispositive authority with respect to the shares. Dr. Shanafelt disclaims beneficial ownership to the shares held of record by the Fund, except to the extent of his pecuniary interest therein.

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: 0

6. Shared Voting Power: 2,568,543

7. Sole Dispositive Power: 0

8. Shared Dispositive Power: 2,568,543

9. Aggregate Amount Beneficially Owned by Each Reporting Person

2,568,543

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

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

19.2%

12. Type of Reporting Person

CO

1. Name of Reporting Person
I.R.S. Identification No. of Above Person (Entities Only)

Armen B. Shanafelt

These shares are owned directly by Lilly Ventures Fund I, LLC (the "Fund"). LV Management Group LLC (the "Management Group") has sole voting and dispositive authority with respect to the shares. Dr. Shanafelt disclaims beneficial ownership to the shares held of record by the Fund, except to the extent of his pecuniary interest therein.

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

(a) (b)

3. SEC Use Only

4. Citizenship or Place of Organization

United States of America

Number of shares beneficially owned by each reporting person with:

5. Sole Voting Power: 0

6. Shared Voting Power: 2,568,543

7. Sole Dispositive Power: 0

8. Shared Dispositive Power: 2,568,543

9. Aggregate Amount Beneficially Owned by Each Reporting Person

2,568,543

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

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

19.2%

12. Type of Reporting Person

IN

Item 1(a) Name of Issuer

Aeglea BioTherapeutics, Inc.

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

901 S. Mopac Expressway, Ste. 250
Barton Oaks Plaza One
Austin, TX 78746

Item 2(a) Name of Person Filing

This Statement is filed on behalf of:

Eli Lilly and Company, an Indiana corporation
Lilly Ventures Fund I, LLC, a Delaware corporation; and
Armen B. Shanafelt. Dr. Shanafelt is a non-managing member of Lilly Ventures Fund I, LLC, and a member of the board of directors of Aeglea BioTherapeutics, Inc.

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

Eli Lilly and Company, Lilly Corporate Center, Indianapolis, IN 46285.
Lilly Ventures Fund I, LLC, 115 W. Washington Street, Suite 1680-South, Indianapolis, IN 46204.
Dr. Shanafelt, 115 W. Washington Street, Suite 1680-South, Indianapolis, IN 46204.

Item 2(c) Citizenship

Eli Lilly and Company is an Indiana corporation. Lilly Ventures Fund I, LLC is a Delaware limited liability company. Dr. Shanafelt is a United States citizen.

Item 2(d) Title of Class of Securities

Common Stock, par value \$0.0001per share

Item 2(e) CUSIP Number

00773J103

Item 3.Filing pursuant to Rules 13d-1(b) or 13d-2(b) or (c)

Not Applicable

Item 4. Ownership

This Schedule 13G shall not be construed as an admission that any Reporting Person is, either for purposes of Section 13(d) or 13(g) of the Securities Exchange Act or for other purposes, the beneficial owner of any Common Stock disclosed on this Schedule 13G.

(a) Amount Beneficially Owned:

As of the date hereof, Lilly Ventures Fund I, LLC ("the Fund") and Eli Lilly and Company ("Lilly") own beneficially and of record 2,568,543 shares of Common Stock of Aeglea BioTherapeutics, Inc. Dr. Shanafelt is a non-managing member of the Fund and therefore may be deemed to beneficially own the shares beneficially owned by the Fund.

Dr. Shanafelt disclaims beneficial ownership of the shares held of record by the Fund, except to the extent of his pecuniary interest therein.

(b) Percent of Class:

Lilly Ventures Fund I, LLC, Eli Lilly and Company, and Dr. Shanafelt may each be deemed to beneficially own 19.2% of the Common Stock of Aeglea BioTherapeutics, Inc.

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

- (i) sole power to vote or to direct the vote:
 - a. Lilly Ventures Fund I, LLC: 0;
 - b. Eli Lilly and Company: 0; and
 - c. Dr. Shanafelt: 0.
- (ii) shared power to vote or to direct the vote:
 - a. Lilly Ventures Fund I, LLC: 2,568,543;
 - b. Eli Lilly and Company: 0; and
 - c. Dr. Shanafelt: 2,568,543.
- (iii) sole power to dispose or to direct the disposition of:
 - a. Lilly Ventures Fund I, LLC: 0;
 - b. Eli Lilly and Company: 0; and
 - c. Dr. Shanafelt: 0.
- (iv) shared power to dispose or to direct the disposition of:
 - a. Lilly Ventures Fund I, LLC: 2,568,543;
 - b. Eli Lilly and Company: 0; and
 - c. Dr. Shanafelt: 2,568,543.

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

Item 9. Notice of Dissolution of 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.

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: April 22, 2016

LILLY VENTURES FUND I, LLC

By: /s/ Tiffany R. Benjamin

Name: Tiffany R. Benjamin

Title: Authorized Person

ELI LILLY AND COMPANY

By: /s/ Tiffany R. Benjamin

Name: Tiffany R. Benjamin

Title: Assistant Secretary

ARMEN B. SHANAFELT

By: /s/ Tiffany R. Benjamin

Name: Tiffany R. Benjamin

Title: Authorized Person

This filing is made voluntarily and should not be construed as an admission that the reporting persons are subject to reporting requirements under Section 13 of the Securities Exchange Act of 1934.

Joint Filing Agreement

The undersigned hereby agree that the foregoing statement on Schedule 13G is filed on behalf of each of the undersigned in accordance with the provisions of Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended, and that all subsequent amendments to this statement on Schedule 13G may be filed on behalf of each of the undersigned without the necessity of filing additional joint filing agreements.

Dated April 22, 2016

LILLY VENTURES FUND I, LLC

By: /s/ Tiffany R. Benjamin

Name: Tiffany R. Benjamin

Title: Authorized Person

ELI LILLY AND COMPANY

By: /s/ Tiffany R. Benjamin

Name: Tiffany R. Benjamin

Title: Assistant Secretary

ARMEN B. SHANAFELT

By: /s/ Tiffany R. Benjamin

Name: Tiffany R. Benjamin

Title: Authorized Person