

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

SCHEDULE 13G

Under the Securities Exchange Act of 1934

APPLIED THERAPEUTICS, INC.

(Name of Issuer)

COMMON STOCK, \$0.0001 PAR VALUE PER SHARE

(Title of Class of Securities)

03828A101

(CUSIP Number)

May 16, 2019

(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 the disclosures provided in a prior cover page.

The information required in 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 Persons
Alexandria Real Estate Equities, Inc.

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a) o

(b) x

3. SEC Use Only

4. Citizenship or Place of Organization
Maryland

5. Sole Voting Power
0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With:

6. Shared Voting Power
3,390,576 (1)

7. Sole Dispositive Power
0

8. Shared Dispositive Power
3,390,576 (1)

9. Aggregate Amount Beneficially Owned by Each Reporting Person
3,390,576 (1)

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) o

11. Percent of Class Represented by Amount in Row (9)
19.9% (2)

12. Type of Reporting Person (See Instructions)
CO

(1) Consists of: (i) 1,171,599 shares of the Issuer's common stock held directly by Alexandria Venture Investments, LLC ("AVI") for its own account; (ii) 1,243,977 shares of the Issuer's common stock held by AVI as nominee for Alexandria Equities No. 7, LLC ("AE7"); and 975,000 shares of the Issuer's common stock held directly by AE7. Each of AVI and AE7 are indirect, wholly-owned subsidiaries of Alexandria Real Estate Equities, Inc. ("ARE") and, accordingly, ARE may be deemed to share voting and dispositive power with AVI and AE7 with respect to the shares reported herein.

(2) This percentage is calculated based upon 17,052,202 outstanding shares of the Issuer's common stock, as reported in the Issuer's Prospectus filed pursuant to Rule 424(b)(4) (Registration No. 333-230838) filed with the Securities and Exchange Commission on May 14, 2019.

1. Name of Reporting Persons
Alexandria Venture Investments, LLC

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization
Delaware

5. Sole Voting Power
0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With:

6. Shared Voting Power
1,171,599 (1)

7. Sole Dispositive Power
0

8. Shared Dispositive Power
1,171,599 (1)

9. Aggregate Amount Beneficially Owned by Each Reporting Person
1,171,599 (1)

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

11. Percent of Class Represented by Amount in Row (9)
6.9% (2)

12. Type of Reporting Person (See Instructions)
OO

(1) These shares are held directly by AVI for its own account. Excludes 1,243,977 shares held by AVI as nominee for AE7, with respect to which AVI has no voting or dispositive power and AVI disclaims beneficial ownership.

(2) This percentage is calculated based upon 17,052,202 outstanding shares of the Issuer's common stock, as reported in the Issuer's Prospectus filed pursuant to Rule 424(b)(4) (Registration No. 333-230838) filed with the Securities and Exchange Commission on May 14, 2019.

1. Name of Reporting Persons
Alexandria Equities No. 7, LLC

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization
Delaware

5. Sole Voting Power
0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With:

6. Shared Voting Power
2,218,977 (1)

7. Sole Dispositive Power
0

8. Shared Dispositive Power
2,218,977 (1)

9. Aggregate Amount Beneficially Owned by Each Reporting Person
2,218,977 (1)

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

11. Percent of Class Represented by Amount in Row (9)
13.0% (2)

12. Type of Reporting Person (See Instructions)
OO

(1) Consists of (i) 975,000 shares held directly by AE7 and (ii) 1,243,977 shares held by AVI as nominee for AE7 and with respect to which AE7 has voting and dispositive power.

(2) This percentage is calculated based upon 17,052,202 outstanding shares of the Issuer's common stock, as reported in the Issuer's Prospectus filed pursuant to Rule 424(b)(4) (Registration No. 333-230838) filed with the Securities and Exchange Commission on May 14, 2019.

Item 1(a) Name of Issuer
Applied Therapeutics, Inc.

Item 1(b) Address of Issuer's Principal Executive Offices
340 Madison Avenue, 19th Floor
New York, New York 10173

Item 2(a) Name of Person Filing
This Statement on Schedule 13G has been filed on behalf of the following persons (each, a "Reporting Person" and collectively, the "Reporting Persons"):

- (1) Alexandria Real Estate Equities, Inc.
 - (2) Alexandria Venture Investments, LLC
 - (3) Alexandria Equities No. 7, LLC
-

Item 2(b) Address of Principal Business Office or, if none, Residence
The address of each of the Reporting Persons is:

385 East Colorado Boulevard, Suite 299
Pasadena, California 91101

Item 2(c) Citizenship

- (1) Alexandria Real Estate Equities, Inc. is incorporated in the State of Maryland
- (2) Alexandria Venture Investments, LLC is organized in the State of Delaware
- (3) Alexandria Equities No. 7, LLC is organized in the State of Delaware

Item 2(d) Title of Class of Securities
Common stock, \$0.0001 par value per share

Item 2(e) CUSIP Number
03828A101

Item 3
Not applicable.

Item 4 Ownership

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1

(a) Amount beneficially owned:
See Row 9 of pages 2, 3, and 4

(b) Percent of class:
See Row 11 of pages 2, 3, and 4

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

(i) Sole power to vote or to direct the vote:
See Row 5 of pages 2, 3, and 4

(ii) Shared power to vote or to direct the vote:
See Row 6 of pages 2, 3, and 4

(iii) Sole power to dispose or to direct the disposition of:
See Row 7 of pages 2, 3, and 4

(iv) Shared power to dispose or to direct the disposition of:
See Row 8 of pages 2, 3, and 4

Item 5 Ownership of Five Percent or Less of a Class

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following.

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

Each of Alexandria Venture Investments, LLC and Alexandria Equities No. 7, LLC is the wholly owned subsidiary of Alexandria Real Estate Equities, Inc., which has the exclusive power to vote and dispose of shares directly owned by these subsidiaries.

Item 8 Identification and Classification of Members of the Group

The Reporting Persons are filing this Schedule 13G jointly, but not as members of a group, and each expressly disclaims membership in a group.

Item 9 Notice of Dissolution of Group

Not applicable.

EXHIBIT A

JOINT FILING AGREEMENT

In accordance with Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended, the undersigned agree to the joint filing on behalf of each of them of a statement on Schedule 13G (including amendments thereto) with respect to the Common Stock of Applied Therapeutics Inc. and further agree that this agreement be included as an exhibit to such filing. Each party to the agreement expressly authorizes each other party to file on its behalf any and all amendments to such statement. Each party to this agreement agrees that this joint filing agreement may be signed in counterparts.

In evidence whereof, the undersigned have caused this Agreement to be executed on their behalf this 28th day of May, 2019.

ALEXANDRIA REAL ESTATE EQUITIES, INC.

By: /s/ Dean A. Shigenaga
Name: Dean A. Shigenaga
Title: Chief Financial Officer

ALEXANDRIA EQUITIES NO. 7, LLC

By: ARE-Special Services, LLC, a Delaware limited liability company, managing member

By: ALEXANDRIA REAL ESTATE EQUITIES, L.P., a Delaware limited partnership, managing member

By: ARE-QRS CORP., a Maryland corporation, general partner

By: Alexandria Real Estate Equities, Inc., a Maryland corporation, sole shareholder

By: /s/ Dean A. Shigenaga
Name: Dean A. Shigenaga
Title: Chief Financial Officer

ALEXANDRIA VENTURE INVESTMENTS, LLC

By: Alexandria Real Estate Equities, Inc., a Maryland corporation, managing member

By: /s/ Dean A. Shigenaga
Name: Dean A. Shigenaga
Title: Chief Financial Officer