### FORM 4

## **UNITED STATES SECURITIES AND EXCHANGE COMMISSION**

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Washington, D.C. 20549

washington, b.c. 200

| l | OMB APPROVAL |         |  |  |  |  |  |  |  |  |  |
|---|--------------|---------|--|--|--|--|--|--|--|--|--|
|   | OMB Number:  | 3235-02 |  |  |  |  |  |  |  |  |  |

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#### Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

| Name and Address of Reporting Person*     Shanafelt Armen |   |  |   |       |                              | 2. Issuer Name and Ticker or Trading Symbol AILERON THERAPEUTICS INC [ ALRN ] |  |   |   |                             |                       |                              |                                     | ck all applica  | ıble)  | eporting Person(s) to Issuer<br>e)<br>10% Owne            |   |  |
|---|---|--|---|-------|------------------------------|---|--|---|---|-----------------------------|-----------------------|------------------------------|-------------------------------------|---|--|---|---|--|
| (Last) (First) (Middle) C/O LILLY VENTURES                |   |  |   |       |                              | 3. Date of Earliest Transaction (Month/Day/Year) 07/05/2017                   |  |   |   |                             |                       |                              |                                     | Officer (<br>below)   | give title   | Other<br>below  | (specify  |  |
| 115 WEST WASHINTON ST. SUITE 1680-SOUTH                   |   |  |   |       |                              | 4. If Amendment, Date of Original Filed (Month/Day/Year)                      |  |   |   |                             |                       |                              |                                     | 6. Individual or Joint/Group Filing (Check Applicable Line)                         |  |   |   |  |
| (Street) INDIANAPOLIS IN 46204                            |   |  |   |       |                              |   |  |   |   |                             |                       |                              |                                     | X Form filed by One Reporting Person  Form filed by More than One Reporting  Person |  |   |   |  |
| (City)  | (5  | State)                                     | (Zip)   |       |                              |   |  |   |   |                             |                       |                              |                                     |   |  |   |   |  |
|   |   | Tá   | able I - No   | n-Der | rivati                       | ve S  | ecur   | rities Acc  | quired,   | Dis                         | posed o               | f, or Ber                    | eficially                           | Owned   |  |   |   |  |
| 1. Title of Security (Instr. 3)  2. Transa Date (Month/D  |   |  |   |       |                              |   |  | 2A. Deemed<br>Execution Date,<br>if any<br>(Month/Day/Year) |   | Transaction<br>Code (Instr. |                       | es Acquired<br>Of (D) (Instr | (A) or<br>. 3, 4 and 5)             | 5. Amount<br>Securities<br>Beneficially<br>Owned Fol                                | y Fo   | Ownership<br>rm: Direct<br>) or Indirect<br>(Instr. 4)    | 7. Nature of<br>Indirect<br>Beneficial<br>Ownership |  |
|   |   |  |   |       |                              |   |  |   |   | v                           | Amount                | (A) or<br>(D)                | Price                               | Reported<br>Transaction(s)<br>(Instr. 3 and 4)                                      |  |   | (Instr. 4)  |  |
| Common Stock 07/05/                                       |   |  |   |       |                              | 2017  |  | С   |   | 844,98                      | 7 A                   | (1)                          | 844,987                             |   | I  | See<br>Footnote <sup>(2)</sup>                            |   |  |
| Common Stock 07/05/                                       |   |  |   | 05/20 | 2017                         |   | P  |   | 250,00  | 0 A                         | A \$15                |                              | 1,094,987                           |   | See<br>Footnote <sup>(2)</sup>   |   |   |  |
|   |   |  | Table II -  |       |                              |   |  |   |   |                             | osed of,<br>convertil |                              |                                     | Owned   |  |   |   |  |
| 1. Title of<br>Derivative<br>Security<br>(Instr. 3)       | 2.<br>Conversion<br>or Exercise<br>Price of<br>Derivative<br>Security | 3. Transaction<br>Date<br>(Month/Day/Year) | 3A. Deemed<br>Execution Da<br>if any<br>(Month/Day/ | ate,  | 4.<br>Transa<br>Code (<br>8) |   | 5. Number of<br>Derivative<br>Securities<br>Acquired (A)<br>or Disposed of<br>(D) (Instr. 3, 4<br>and 5) |   | 6. Date Exercisa<br>Expiration Date<br>(Month/Day/Yea |                             | e of Securities       |                              | es<br>J<br>Security                 | 8. Price of<br>Derivative<br>Security<br>(Instr. 5)                                 | 9. Number of derivative Securities Beneficially Owned Following Reported | Ownersh<br>Form:<br>Direct (D<br>or Indire<br>(I) (Instr. | Beneficial<br>Ownership<br>ct (Instr. 4)            |  |
|   |   |  |   | ,     | Code                         | v   | (A)  | (D)   | Date<br>Exercisa                                      | ıble                        | Expiration<br>Date    | Title                        | Amount<br>or<br>Number<br>of Shares |   | Transactior<br>(Instr. 4)  | 1(5)  |   |  |
| Series D<br>Preferred<br>Stock                            | (1)   | 07/05/2017                                 |   |       | С                            |   |  | 3,390,885   | (1)   |                             | (1)                   | Common<br>Stock              | 341,238                             | \$0.00  | 0  | I   | See<br>Footnote <sup>(2)</sup>                      |  |
| Series E-2<br>Preferred<br>Stock                          | (1)   | 07/05/2017                                 |   |       | С                            |   |  | 1,907,373   | (1)   |                             | (1)                   | Common<br>Stock              | 191,946                             | \$0.00  | 0  | I   | See<br>Footnote <sup>(2)</sup>                      |  |
| Series E-3<br>Preferred<br>Stock                          | (1)   | 07/05/2017                                 |   |       | С                            |   |  | 1,654,411   | (1)   |                             | (1)                   | Common<br>Stock              | 166,489                             | \$0.00  | 0  | I   | See<br>Footnote <sup>(2)</sup>                      |  |
| Series F<br>Preferred<br>Stock                            | (1)   | 07/05/2017                                 |   |       | С                            |   |  | 1,443,972   | (1)   |                             | (1)                   | Common<br>Stock              | 145,312                             | \$0.00  | 0  | I   | See<br>Footnote <sup>(2)</sup>                      |  |

#### **Explanation of Responses:**

1. The Series D, Series E-2, Series E-3 and Series F Preferred Stock converted into Common Stock on a 9.937-for-one basis upon the closing of the Issuer's initial public offering without payment of consideration. The Series D, Series E-3, Series E-3 and Series F Preferred Stock were convertible at any time at the holder's election and automatically upon the closing of the Issuer's initial public offering. The shares had no expiration date.

#### Remarks:

Exhibit Index: 24.1 Power of Attorney

/s/ Kira A. Nelson, Kira A. Nelson as attorney-in-fact for

07/07/2017

Armen B. Shanafelt

Date

\*\* Signature of Reporting Person

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

- \* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).
- \*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

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 Number.

<sup>2.</sup> These shares are held directly by Lilly Ventures Fund I LLC, or LVFI. LV Management Group, LLC, or LVMG, is the management company for LVFI and as such may be deemed to indirectly beneficially own the shares held by LVFI. LVMG's voting and dispositive decisions with respect to the shares held by LVFI are made by LVMG's management committee, which includes the Reporting Person. The Reporting Person disclaims beneficial ownership of the reported securities except to the extent of his proportionate pecuniary interest therein.

# LIMITED POWER OF ATTORNEY FOR SECTION 16 REPORTING OBLIGATIONS

Know all by these presents, that the undersigned hereby makes, constitutes and appoints each of Joseph A. Yanchik, III, Donald V. Dougherty and Kira A. Nelson, signing singly and each acting individually, as the undersigned's true and lawful attorney-in-fact with full power and authority as hereinafter described to:

- (1) execute for and on behalf of the undersigned, in the undersigned's capacity as an officer of Aileron Therapeutics, Inc. (the "Company"), Forms 3, 4, and 5 (including any amendments thereto) in accordance with Section 16(a) of the Securities Exchange Act of 1934 and the rules thereunder (the "Exchange Act");
- (2) do and perform any and all acts for and on behalf of the undersigned which may be necessary or desirable to prepare, complete and execute any such Form 3, 4, or 5, prepare, complete and execute any amendment or amendments thereto, and timely deliver and file such form with the United States Securities and Exchange Commission (the "SEC") and any stock exchange or similar authority, including without limitation the filing of a Form ID, Update Passphrase, or any other application materials to enable the undersigned to gain or maintain access to the Electronic Data Gathering, Analysis and Retrieval system of the SEC;
- (3) seek or obtain, as the undersigned's representative and on the undersigned's behalf, information regarding transactions in the Company's securities from any third party, including brokers, employee benefit plan administrators and trustees, and the undersigned hereby authorizes any such person to release any such information to such attorney-in-fact and approves and ratifies any such release of information; and
- (4) take any other action of any type whatsoever in connection with the foregoing which, in the opinion of such attorney-in-fact, may be of benefit to, in the best interest of, or legally required by, the undersigned, it being understood that the documents executed by such attorney-in-fact on behalf of the undersigned pursuant to this Power of Attorney shall be in such form and shall contain such terms and conditions as such attorney-in-fact may approve in such attorney-in-fact's discretion.

The undersigned hereby grants to each such attorney-in-fact full power and authority to do and perform any and every act and thing whatsoever requisite, necessary, or proper to be done in the exercise of any of the rights and powers herein granted, as fully to all intents and purposes as the undersigned might or could do if personally present, with full power of substitution or revocation, hereby ratifying and confirming all that such attorney-in-fact, or such attorney-in-fact's substitute or substitutes, shall lawfully do or cause to be done by virtue of this power of attorney and the rights and powers herein granted. The undersigned acknowledges that the foregoing attorneys-in-fact, in serving in such capacity at the request of the undersigned, are not assuming nor relieving, nor is the Company assuming nor relieving, any of the undersigned's responsibilities to comply with Section 16 of the Exchange Act. The undersigned acknowledges that neither the Company nor the foregoing attorneys-in-fact assume (i) any liability for the undersigned's responsibility to comply with the requirement of the Exchange Act, (ii) any liability of the undersigned for any failure to comply with such requirements, or (iii) any obligation or liability of the undersigned for profit disgorgement under Section 16(b) of the Exchange Act.

This Power of Attorney shall remain in full force and effect until the undersigned is no longer required to file Forms 3, 4, and 5 with respect to the undersigned's holdings of and transactions in securities issued by the Company, unless earlier revoked by the undersigned in a signed writing delivered to the foregoing attorneys-in-fact.

IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of June 16, 2017.

/s/ Armen B. Shanafelt

Name: Armen B. Shanafelt