FORM 4

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

## STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

| l | OMB APPRO              | VAL       |
|---|------------------------|-----------|
|   | OMB Number:            | 3235-0287 |
| l | Estimated average burd | en        |
| l | hours per response:    | 0.5       |

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

| 1. Name and Address of Reporting Person* <u>Bush Jennifer</u> |   |  |  |           |  |           | 2. Issuer Name <b>and</b> Ticker or Trading Symbol ORGANOVO HOLDINGS, INC. [ ONVO ] |                                  |   |                 |   |            |             |                            |                    | all app<br>Direc  | licable)<br>tor   | g Person(s) to Is   |  | )wner      |
|---|---|--|--|-----------|--|-----------|---|----------------------------------|---|-----------------|---|------------|-------------|----------------------------|--------------------|---|---|---|--|------------|
| (Last) (First) (Middle) 6275 NANCY RIDGE DRIVE, SUITE 110     |   |  |  |           |  |           | 3. Date of Earliest Transaction (Month/Day/Year) 11/16/2018                         |                                  |   |                 |   |            |             |                            |                    | belov   | ficer (give title Other (spectow)  General Counsel & Secretary  |   |  |            |
| (Street) SAN DIEGO CA 92121 (City) (State) (Zip)              |   |  |  |           | 4. If Amendment, Date of Original Filed (Month/Day/Year) |           |   |                                  |   |                 |   |            |             |                            | Indivi<br>ne)<br>X | ridual or Joint/Group Filing (Check Applicable  Form filed by One Reporting Person  Form filed by More than One Reporting  Person |   |   |  |            |
|   |   | Tabl                                       | e I - No                                     | n-Deriv   | ative  | Sec       | uritie  | s Acc                            | quired  | , Dis           | sposed o                                  | f, or      | Ben         | eficia                     | ally C             | Owne  | ed  |   |  |            |
| 1. Title of Security (Instr. 3)  2. Transact Date (Month/Day  |   |  |  |           |  | Execution |   |                                  |   |                 | ies Acquired (A) o<br>Of (D) (Instr. 3, 4 |            |             | and 5) Secu<br>Bene<br>Own |                    | cially<br>I Following   | 6. Ownership<br>Form: Direct<br>(D) or Indirect<br>(I) (Instr. 4)   |   | 7. Nature<br>of Indirect<br>Beneficial<br>Ownership                |            |
|   |   |  |  |           |  |           |   |                                  | Code  | v               | Amount                                    | ( <i>t</i> | () or<br>() | Price                      |                    | Transa  | eported<br>ansaction(s)<br>istr. 3 and 4)   |   |  | (Instr. 4) |
| Common Stock 11/16/2  |   |  |  |           |  | 018       |   |                                  | F   |                 | 11,915 <sup>(1</sup>                      | 1)         | D \$1.0     |                            | 573                | <sup>'3</sup> 281,588 <sup>(2)</sup>  |   | D   |  |            |
|   |   | Та   |  |           |  |           |   |                                  |   |                 | osed of,<br>onvertib                      |            |             |                            | / Ow               | ned   |   |   |  |            |
| 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. Deem<br>Execution<br>if any<br>(Month/Di | n Date, 1 | 4.<br>Transa<br>Code (<br>8)                             |           | 5. Nu of Deriv Secu Acqu (A) of Dispo of (D) (Instrand 5                            | rities<br>ired<br>osed<br>. 3, 4 | 6. Date I<br>Expirati<br>(Month/I<br>Date<br>Exercisa | on Da<br>Day/Ye |   | or         |             | nstr. 3<br>nount<br>mber   | Deriv<br>Secu      | Price of<br>privative<br>curity<br>estr. 5)   | 9. Number of<br>derivative<br>Securities<br>Beneficially<br>Owned<br>Following<br>Reported<br>Transaction<br>(Instr. 4) | Ownership<br>Form:<br>Direct (D)<br>or Indirect<br>(I) (Instr. 4) | 11. Nature<br>of Indirect<br>Beneficial<br>Ownership<br>(Instr. 4) |            |

## Explanation of Responses:

- 1. Represents the mandatory sale of shares to satisfy the Reporting Person's tax withholding obligations, in connection with the partial vesting and settlement of restricted stock units granted in July 2016, June 2017 and May 2018, pursuant to the Reporting Person's agreement with the Issuer.
- 2. This number does not include 1,333,333 shares of common stock underlying outstanding options held by Ms. Bush; post-transaction Ms. Bush beneficially owns or has a right to acquire 1,614,921 shares of common stock.

## Remarks:

/s/ Jennifer Bush

11/20/2018

\*\* Signature of Reporting Person

Date

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.