

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

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

| OMB APPROVAL                                 |           |
|--|-----------|
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|   |   |   |
|---|---|---|
| <b>1. Name and Address of Reporting Person*</b><br><u>Bush Jennifer</u><br><br>(Last) (First) (Middle)<br>6275 NANCY RIDGE DRIVE, SUITE 110<br><br>(Street)<br>SAN DIEGO CA 92121<br><br>(City) (State) (Zip) | <b>2. Issuer Name and Ticker or Trading Symbol</b><br><u>ORGANOVO HOLDINGS, INC. [ ONVO ]</u> | <b>5. Relationship of Reporting Person(s) to Issuer</b><br>(Check all applicable)<br>Director 10% Owner<br>X Officer (give title below) Other (specify below)<br><u>General Counsel &amp; Secretary</u> |
|   | <b>3. Date of Earliest Transaction (Month/Day/Year)</b><br>05/24/2018                         |   |
| <b>4. If Amendment, Date of Original Filed (Month/Day/Year)</b>   |   |   |

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) |   | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) |            |        | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|------------|--------|---|--|---|
|                                 |                                      |  | Code                           | V | Amount  | (A) or (D) | Price  |   |  |   |
| Common Stock <sup>(1)</sup>     | 05/24/2018                           |  | A                              |   | 70,248 <sup>(2)</sup>   | A          | \$0.00 | 305,903 <sup>(3)</sup>  | D  |   |

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) |   | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) |     | 6. Date Exercisable and Expiration Date (Month/Day/Year) |                 | 7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |       |
|--|--|--------------------------------------|--|--------------------------------|---|--|-----|--|-----------------|---|--|--|---|--|-------|
|  |  |                                      |  | Code                           | V | (A)  | (D) | Date Exercisable   | Expiration Date |   |  |  |   |  | Title |
| Stock Option (Right to Buy)                | \$1.84   | 05/24/2018                           |  | A                              |   | 283,333  |     | (4)  | 05/24/2028      | Common Stock  | 283,333                                    | \$0.00   | 283,333   | D  |       |

**Explanation of Responses:**

- Annual long-term equity award approved by the Compensation Committee of the Issuer's Board of Directors.
- The shares represent a grant of Restricted Stock Units ("RSUs"). The RSUs represent a right to receive shares of the Issuer's common stock, at no additional conversion or exercise price. The RSUs vest and settle over 16 equal quarterly installments measured from May 15, 2018.
- This number does not include 658,333 shares of common stock underlying outstanding options held by Ms. Bush; post-transaction Ms. Bush beneficially owns or has a right to acquire 964,236 shares of common stock.
- The option shares vest and become exercisable over 16 equal quarterly installments measured from May 15, 2018.

**Remarks:**

/s/ Jennifer Bush

05/29/2018

\*\* 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.