

| OMB APPROVAL                                 |           |
|--|-----------|
| OMB Number:                                  | 3235-0287 |
| Estimated average burden hours per response: | 0.5       |

**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

|   |  |   |
|---|--|---|
| 1. Name and Address of Reporting Person*<br><u>MICHAELS BARRY D</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) | 2. Issuer Name and Ticker or Trading Symbol<br><u>ORGANOVO HOLDINGS, INC. [ ONVO ]</u> | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable)<br>Director 10% Owner<br>X Officer (give title below) Other (specify below)<br><u>Chief Financial Officer</u> |
|   | 3. Date of Earliest Transaction (Month/Day/Year)<br>08/25/2014                         |   |
| 4. If Amendment, Date of Original Filed (Month/Day/Year)  |  |   |

**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                    | 08/25/2014                           |  | F                              |   | 102,760 <sup>(1)</sup>  | D          | \$7.94 | 469,672 <sup>(2)</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) <sup>(3)</sup> | \$7.94   | 08/25/2014                           |  | A                              |   | 102,760  |     | 08/25/2014   | 08/25/2024      | Common Stock  | 102,760                                    | \$0  | 102,760   | D  |       |

**Explanation of Responses:**

- The shares were withheld at the election of the Reporting Person to satisfy tax withholding obligations in connection with the partial vesting of restricted stock units granted in August 2012 in accordance with the terms of the Reporting Person's Equity Incentive Award Agreement dated August 2012.
- This number does not include 677,475 shares of common stock underlying outstanding options held by Mr. Michaels; post-transaction Mr. Michaels continues to beneficially own or have a right to acquire 1,147,147 shares of common stock.
- The option was automatically issued pursuant to the terms of the Reporting Person's Equity Incentive Award Agreement dated August 2012.

/s/ Barry D. Michaels

08/26/2014

\*\* 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.**