UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): September 11, 2014

ORGANOVO HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

Commission File Number: 001-35996

Delaware (State or other jurisdiction of incorporation) 27-1488943 (I.R.S. Employer Identification No.)

6275 Nancy Ridge Dr., San Diego, California 92121 (Address of principal executive offices, including zip code)

(858) 224-1000 (Registrant's telephone number, including area code)

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

□ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

□ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

Dere-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

Dere-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 7.01 Regulation FD Disclosure

Investor Presentation

As previously announced, on September 11, 2014, Keith Murphy, Chairman, Chief Executive Officer and President of Organovo Holdings, Inc. ("Organovo"), will be participating in a live webcast presentation to investors via http://RetailInvestorConferences.com. The presentation will take place at 12:15 PM EDT, and investors may access the presentation at http://retailinvestorconferences.com > click on red "register / watch event now" button. A copy of the presentation slides are available on Organovo's website under the "Investors" tab. In addition, investors may access an on-demand archive of the presentation at http://retailinvestorconferences.com for 90 days.

Executive Officer Rule 10b5-1 Trading Plans

As of September 11, 2014, the following individuals, each a named executive officer of Organovo, has adopted a stock trading plan in accordance with the guidelines established by the Securities and Exchange Commission under Rule 10b5-1 ("Rule 10b5-1") of the Securities Exchange Act of 1934 (the "Exchange Act"): Sharon Presnell, *Chief Technology Officer and Executive Vice President of Research & Development*, and Eric David, *Chief Strategy Officer*. Rule 10b5-1 trading plans allow these individuals to gradually diversify their holdings while minimizing the market effects of trades and eliminating any market concern that trades were made while these individuals were in possession of material, nonpublic information. Consistent with Rule 10b5-1, our insider trading policy permits officers, directors and employees to implement Rule 10b5-1 trading plans provided that, among other things, these individuals are not in possession of any material, nonpublic information at the time they adopt their plan. Each of these individuals have and will continue to file Form 4s reporting sales under their respective Rule 10b5-1 trading plans as required under Section 16 of the Exchange Act.

Under each of these Rule 10b5-1 trading plans, the broker serving as the designated agent for the plan will undertake to sell a specified number of shares during the term of the plan if the stock trades above certain prearranged minimum prices established in the plan at the time it was adopted. Each individual stockholder, after adopting their plan, has no control over any sales under their plan, and there is no assurance that any or all of the shares will be sold.

Dr. Presnell and Dr. David adopted their respective Rule 10b5-1 trading plans to diversify their holdings. Our Audit Committee approved each of these Rule 10b5-1 trading plans prior to their adoption.

Dr. Presnell acquired 224,064 shares of Organovo common stock by exercising an outstanding option grant in August 2012, with the intent of achieving capital gains treatment for these shares. Under her previously approved Rule 10b5-1 trading plan, she sold an aggregate of 150,000 shares in 2013. Under her currently established trading plan, a portion of the remaining shares she acquired in August 2012 may be sold depending upon the provisions of the plan. Dr. Presnell continues to hold or have the right to acquire up to 1,176,256 shares of Organovo common stock.

Dr. David's Rule 10b5-1 plan is similar in scope to a previous plan he executed in 2013. His currently established trading plan will allow for the sale of a number of shares dependent on Organovo's stock trading above certain prearranged minimum prices set in the plan between now and May 31, 2015, but under no circumstances will the aggregate trades under Dr. David's plan result in Dr. David holding less than 90% of his current equity stake in Organovo.

Although a number of our executive officers completed Rule 10b5-1 trading plans in late 2013 or early 2014, their alignment with Organovo's stockholders has increased over time. The following table represents the overall equity opportunity, defined as the number of shares our executive officers currently hold or have the right to acquire assuming their continued service through the vesting period of their outstanding equity awards, for each of our Section 16 officers as of September 1, 2013 and September 1, 2014:

| Executive Officer | September 1, 2013 Total Shares | September 1, 2014 Total Shares |
|-------------------------|-----------------------------------|-----------------------------------|
| Keith Murphy | 6,826,092 | 6,918,092 |
| Barry Michaels | 932,500 | 1,147,147 |
| Sharon Collins Presnell | 1,096,256 | 1,176,256 |
| Eric David | 1,514,306 | 1,571,306 |
| Michael Renard | 700,000 | 805,000 |

Because our Board of Directors believes strongly in aligning the interests of our executive officers with the interests of Organovo's stockholders, the Board has established stock ownership guidelines that require each executive officer to acquire and maintain a meaningful ownership interest in Organovo. The stock ownership guidelines require:

- Our Chief Executive Officer to accumulate and hold shares valued at five times his base salary within five years;
- Our other executive officers to accumulate and hold shares valued at three times their base salaries within five years; and
- Our non-employee directors to accumulate and hold shares valued at four times their annual cash retainer within five years.

As of September 11, 2014, all of our executive officers and non-employee directors were in compliance with their respective stock ownership guidelines.

The information furnished in this Current Report on Form 8-K shall not be deemed "filed" for purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference into any other filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except as expressly set forth by specific reference in such a filing.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: September 11, 2014

ORGANOVO HOLDINGS, INC.

/s/ Keith Murphy

Keith Murphy Chief Executive Officer and President