
**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): December 18, 2012

ORGANOVO HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

Commission File Number: 000-54621

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) 550-9994
(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)
 - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
 - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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Item 8.01. Other Events

On December 18, 2012, Organovo Holdings, Inc. (the “Company”) issued a press release announcing its agreement with Autodesk, Inc. to create the first 3D design software for bioprinting.

The full text of the Company’s press release regarding the announcement is filed as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

Item 9.01. Financial Statements and Exhibits**(d) Exhibits**

The following exhibit is filed as part of this report:

<u>Exhibit No.</u>	<u>Description</u>
99.1	Press Release, dated December 18, 2012.

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.

ORGANOVO HOLDINGS, INC.

Date: December 19, 2012

/s/ Barry Michaels

Barry Michaels

Chief Financial Officer

Exhibits

<u>Exhibit No.</u>	<u>Description</u>
99.1	Press Release, dated December 18, 2012.

FOR IMMEDIATE RELEASE**Organovo Partners With Autodesk Research to Develop 3D Bioprinting Software**

SAN DIEGO, CA, December 18, 2012 – Organovo Holdings, Inc. (OTCQX ONVO) (“Organovo”), a creator and manufacturer of functional, three-dimensional human tissues for medical research and therapeutic applications, is working together with researchers at Autodesk, Inc., the leader in cloud-based design and engineering software, to create the first 3D design software for bioprinting.

The software, which will be used to control Organovo’s NovoGen MMX bioprinter, will represent a major step forward in usability and functionality for designing three-dimensional human tissues, and has the potential to open up bioprinting to a broader group of users.

“Autodesk is an excellent partner for Organovo in developing new software for 3D bioprinters,” said Keith Murphy, Chairman and Chief Executive Officer at Organovo. “This relationship will lead to advances in bioprinting, including both greater flexibility and throughput internally, and the potential long-term ability for customers to design their own 3D tissues for production by Organovo.”

“Bioprinting has the potential to change the world,” said Jeff Kowalski, Senior Vice President and Chief Technology Officer at Autodesk. “It’s a blend of engineering, biology and 3D printing, which makes it a natural for Autodesk. I think working with Organovo to explore and evolve this emerging field will yield some fascinating and radical advances in medical research.”

Organovo’s 3D bioprinting technology is used to create living human tissues that are three-dimensional, architecturally correct, and made entirely of living human cells. The resulting structures can function like native human tissues, and represent an opportunity for advancement in medical research, drug discovery and development, and in the future, surgical therapies and transplantation.

The Autodesk Research group is dedicated to innovation and discovery ranging from methods to help users learn powerful digital prototyping tools to visualization and simulation techniques that enable designers to achieve new levels of performance. Advancing the state of the art in human-computer interaction, computer graphics and digital design technology, Autodesk Research collaborates openly with researchers at leading universities around the world. The bio/nano/programmable matter group within Autodesk Research is extending this expertise by developing software for the design and simulation of molecular systems and living systems.

About Organovo Holdings, Inc.

Organovo designs and creates functional, three-dimensional human tissues for medical research and therapeutic applications. The company is working in collaboration with pharmaceutical and academic partners to develop human biological disease models in three dimensions that enable therapeutic drug discovery and development. Organovo’s technology can also be applied to create surgical tissues for direct therapy. Their three-dimensional bioprinting technology was selected as one of the “Best Inventions of 2010” by TIME Magazine. Organovo leads the way in solving complex medical research problems and building the future of medicine. Visit www.organovo.com.

Safe Harbor Statement

Any statements contained in this press release that do not describe historical facts may constitute forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. Any forward-looking statements contained herein are based on current expectations, but are subject to a number of risks and uncertainties. The factors that could cause actual future results to differ materially from current expectations include, but are not limited to, risks and uncertainties relating to the Company's ability to develop, market and sell products based on its technology; the expected benefits and efficacy of the Company's products and technology; the availability of substantial additional funding for the Company to continue its operations and to conduct research and development, clinical studies and future product commercialization; the anticipated benefits of the contract with Autodesk; and the Company's business, research, product development, regulatory approval, marketing and distribution plans and strategies. These and other factors are identified and described in more detail in our filings with the SEC, including our current report on Form 8-K/A filed on May 11, 2012. We do not undertake to update these forward-looking statements made by us.

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