# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION
**Washington, D.C. 20549**

# SCHEDULE 14A

**Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934**
**(Amendment No. )**

Filed by the Registrant ☒ Filed by a Party other than the Registrant ☐

Check the appropriate box:

☒ Preliminary Proxy Statement
☐ **Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
☐ Definitive Proxy Statement
☐ Definitive Additional Materials
☐ Soliciting Material under §240.14a-12

# Organovo Holdings, Inc.
**(Name of Registrant as Specified In Its Charter)**

**Not Applicable**
**(Name of Person(s) Filing Proxy Statement, if other than the Registrant)**

Payment of Filing Fee (Check the appropriate box):

☒ No fee required.
☐ Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which transaction applies:

(2) Aggregate number of securities to which transaction applies:

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

☐ Fee paid previously with preliminary materials.
☐ Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

(1) Amount Previously Paid:

(2) Form, Schedule or Registration Statement No.

(3) Filing Party:

(4) Date Filed:

**Organovo Holdings, Inc.**
**440 Stevens Ave, Suite 200**
**Solana Beach, CA 92075**

July , 2020

Dear Stockholder:

You are cordially invited to attend this year's Annual Meeting of Stockholders of Organovo Holdings, Inc. on, September , 2020 at 9:00 a.m. (Pacific Daylight Time). **The Annual Meeting will be completely virtual. You may attend the virtual meeting, submit questions, and vote your shares electronically during the meeting via live webcast by visiting www.virtualshareholdermeeting.com/ONVO2020AM**.

We are pleased to furnish proxy materials primarily over the internet based on the rules established by the Securities and Exchange Commission (the "SEC"). We believe this will allow us to quickly provide proxy materials to you, while lowering the costs of distribution and reducing the environmental impact of our Annual Meeting.

On July , 2020, we mailed a Notice of Internet Availability of Proxy Materials (the "Notice") to our stockholders (other than those who previously requested electronic or paper delivery) containing instructions on how to access our proxy materials, including our Proxy Statement and Annual Report to Stockholders for the fiscal year ended March 31, 2020, over the internet. The Notice also provides instructions on how to vote online or by telephone and includes instructions on how you can receive a paper copy of the proxy materials by mail. If you receive your proxy materials by mail, the Annual Report, the Notice of 2020 Annual Meeting of Stockholders, the Proxy Statement, and proxy card will be enclosed.

The matters to be acted upon are described in the Notice of 2020 Annual Meeting of Stockholders and Proxy Statement. Following the formal business of the meeting, we will respond to questions from stockholders.

Whether or not you plan to virtually attend the meeting, your vote is very important and we encourage you to vote promptly. You may vote by proxy over the internet or by telephone, or, if you received paper copies of the proxy materials by mail, you can also vote by mail by following the instructions on your proxy card. If you virtually attend the meeting you will have the right to revoke your proxy and vote electronically during the meeting via the live webcast. If you hold your shares through an account with a brokerage firm, bank or other nominee, please follow the instructions you receive from your brokerage firm, bank or other nominee to vote your shares.

On behalf of your Board of Directors, thank you for your continued support and interest.

Sincerely yours,

Taylor Crouch
*Chief Executive Officer and President*

**ORGANOVO HOLDINGS, INC. NOTICE OF 2020 ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON SEPTEMBER , 2020**

To Our Stockholders:

The 2020 Annual Meeting of Stockholders (the "Annual Meeting" or the "2020 Annual Meeting") of Organovo Holdings, Inc. ("we," "us," "our," "Organovo" or the "Company") will be held on , September , 2020 at 9:00 a.m. (Pacific Daylight Time). **The Annual Meeting will be completely virtual. You may attend the meeting, submit questions, and vote your shares electronically during the meeting via live webcast by visiting www.virtualshareholdermeeting.com/ONVO2020AM**. At the Annual Meeting, our stockholders will be asked:

1. To elect Keith E. Murphy and Adam Stern as Class III directors to hold office until the 2023 Annual Meeting of Stockholders and until their successor(s) are elected and qualified;
2. To approve, on an advisory basis, the Board's appointment of three additional directors to our Board immediately following the final adjournment of the 2020 Annual Meeting;
3. To ratify the appointment of Mayer Hoffman McCann P.C. as our independent registered public accounting firm for the fiscal year ending March 31, 2021;
4. To approve, on an advisory basis, the compensation of our named executive officers; and
5. To transact such other business as may properly be brought before the Annual Meeting or any adjournments or postponements thereof.

Our Board of Directors recommends a vote **FOR** the director nominees, and **FOR** proposals 2, 3 and 4 listed above. Stockholders of record at the close of business on July 17, 2020 are entitled to notice of, and to vote on, all matters at the meeting and any reconvened meeting following any adjournments or postponements thereof. For ten days prior to the Annual Meeting, a complete list of stockholders entitled to vote at the Annual Meeting will be available for examination by any stockholder, for any purpose relating to the Annual Meeting, during ordinary business hours at our corporate offices located at 440 Stevens Ave, Suite 200, Solana Beach, CA 92075.

All stockholders are invited to attend the virtual Annual Meeting. Whether or not you expect to attend the Annual Meeting, you are urged to vote or submit your proxy as soon as possible so that your shares can be voted at the Annual Meeting in accordance with your instructions. Telephone and internet voting are available. For specific instructions on voting, please refer to the instructions in the Notice of Internet Availability of Proxy Materials or the proxy card. If you hold your shares through an account with a brokerage firm, bank or other nominee, please follow the instructions you receive from them to vote your shares.

**Important Notice Regarding Availability of Proxy Materials for the Annual Meeting:** Our Notice of 2020 Annual Meeting of Stockholders, Proxy Statement and Annual Report are available at www.proxyvote.com.

By Order of the Board of Directors

Jennifer K. Bush
*Senior Vice President, General Counsel, Corporate Secretary, and Compliance Officer*

July , 2020

**2020 Proxy Statement Summary**

To assist you in reviewing the Proxy Statement for the Organovo Holdings, Inc. ("we," "us," "our," "Organovo" or the "Company") 2020 Annual Meeting of Stockholders (the "Annual Meeting" or "2020 Annual Meeting"), we call your attention to the following summary information about the Annual Meeting, the proposals to be considered at the Annual Meeting and our corporate governance and compensation frameworks. For more complete information, please review our Proxy Statement and Annual Report for the fiscal year ended March 31, 2020 (the "Annual Report"). **Regardless of the number of shares you own, your VOTE is very important.** Even if you presently plan to virtually attend the 2020 Annual Meeting, please vote or submit your proxy as soon as possible so that your shares can be voted at the 2020 Annual Meeting in accordance with your instructions. Telephone and internet voting are available. For specific instructions on voting, please refer to the instructions in the Notice of Internet Availability of Proxy Materials or the proxy card. If you do virtually attend the 2020 Annual Meeting and wish to vote electronically, you may withdraw your proxy at that time.

**Annual Meeting of Stockholders**

| | |
|---|---|
| Date and Time: | September , 2020 at 9:00 a.m. (Pacific Daylight Time) |
| Place: | www.virtualshareholdermeeting.com/ONVO2020AM. |
| Record Date: | July 17, 2020 |
| Voting: | If you were a "stockholder of record" or beneficial owner of shares held in "street name" as of the Record Date, you may vote your shares. You may vote in person at the Annual Meeting or by the internet, telephone or mail. See the "General Information – Voting Instructions" in the Proxy Statement for more detail regarding how you may vote your shares. |
| Virtual Meeting: | The Annual Meeting will be conducted as a virtual meeting of stockholders by means of a live webcast. We believe that hosting a virtual meeting will enable greater stockholder attendance and participation from any location, improved communication and cost savings to our stockholders and support the health of our stockholders and employees given the public health impact of the coronavirus outbreak (COVID-19). You can virtually attend the Annual Meeting by visiting www.virtualshareholdermeeting.com/ONVO2020AM, where you will be able to vote your shares, and submit your questions during the meeting via the Internet. There will not be a physical meeting location and you will not be able to attend in person.<br><br>The Annual Meeting starts at 9:00 a.m. (Pacific Daylight Time). We encourage you to access the meeting website prior to the start time to allow time for check in. If you encounter any difficulties accessing the virtual meeting during the check-in or meeting time, please call the technical support number that will be posted on the virtual shareholder meeting login page.<br><br>You do not need to register to virtually attend the Annual Meeting webcast. Follow the instructions on your Notice of Internet Availability or proxy card (if you requested and received a printed copy of the proxy materials) to access the Annual Meeting. |

**Proposals and Voting Recommendations**

| | Board Vote Recommendation | Page References (for more detail) |
|---|---|---|
| **Proposals:** | | |
| (1) Election of two Class III directors to hold office until the 2023 Annual Meeting of Stockholders and until their successor(s) are elected and qualified. | **FOR NOMINEES** | 7 - 8 |
| (2) To approve, on an advisory and non-binding basis, the Board's appointment of three additional directors to our Board immediately following the 2020 Annual Meeting. | **FOR** | 9 - 11 |
| (3) Ratification of appointment of Mayer Hoffman McCann P.C. as our independent registered public accounting firm for the fiscal year ending March 31, 2021. | **FOR** | 26 - 27 |
| (4) To approve, on an advisory and non-binding basis, the compensation of our named executive officers. | **FOR** | 28 |

**Current Corporate Governance Summary Facts**

We seek to maintain high standards of business conduct and corporate governance, which we believe are fundamental to the overall success of our business, serving our stockholders well and maintaining our integrity in the marketplace. The following table summarizes some of the key elements of our current corporate governance framework:

| | |
|---|---|
| Size of Board | 6 |
| Number of Independent Directors | 4 |
| Chairman and CEO | Separate |
| Independent Chairman | Yes |
| Board Self-Evaluation | Annual |
| Review Board and Board Committee Independence and Qualifications | Annual |
| Hold Executive Sessions | Yes |
| Annual Director Elections | No |
| All Directors Received At Least 80% Approval at 2019 Annual Meeting | Yes |
| Diverse Board (as to background, experience and skills) | Yes |
| Board has Adopted Corporate Governance Guidelines | Yes |
| Board has Not Amended Charters or Taken Actions to Reduce Stockholder Rights | True |
| Director Meeting Attendance Above 75% | Yes |
| Stock Ownership Guidelines | Yes |
| No Family Relationships Among Officers and Directors | True |
| All Committee Chairs and Members Qualify as Independent Directors | Yes |
| CEO Serves on Fewer Than Three Outside Boards | True |

**Summary of Compensation Best Practices**

Our Board of Directors (the “Board of Directors” or the “Board”) established a Compensation Committee comprised of three independent directors in accordance with the rules and regulations established by the Securities and Exchange Commission and the Nasdaq Capital Market. Our Board has delegated to the Compensation Committee the authority to establish the Company’s executive compensation program and to approve all compensation received by the Company’s executive officers and the other members of its management team. The Compensation Committee retained Arnosti Consulting (“Arnosti”) as its independent compensation consultant, to assist it in evaluating the Company’s executive compensation program for the fiscal year ending March 31, 2020 (“FY 2020”) and selecting an appropriate peer group of comparable companies for purposes of setting executive compensation.

The Compensation Committee regularly reviews best practices in governance and executive compensation. The following is a high-level summary of certain executive compensation practices that the Compensation Committee believes drive Company performance and serve our stockholders’ long-term interests:

| | |
|---|---|
| Compensation Committee Comprised of At Least Three Independent Directors | Yes |
| Independent Compensation Consultant Retained | Yes |
| Compensation Committee Members all qualify as "outside directors" and "non-employee directors" | True |
| Compensation Based on Comparison to Peer Group Data | Yes |
| All Directors and Officers Subject to Stock Ownership Guidelines | Yes |
| Compensation Committee Performs Compensation Risk Assessment | Annual |
| Prohibitions Against all Directors, Officers and Employees Hedging or Pledging Stock | Yes |
| Incentive Plans Based on Performance Metrics | Yes |
| Company Does Not Offer Tax Gross Ups for Severance or Change of Control | Yes |
| Reasonable and Double Trigger Accelerated Vesting Provisions Adopted | Yes |
| No Multi-Year Guaranteed Bonuses | Yes |
| Stock Option Plan Prohibits Option Repricing and Share Recycling | Yes |
| Company has Not Repriced Options in Last Three Years | Yes |
| No Executive Employment Agreements with Guaranteed Terms | Yes |
| Offer Limited Perquisites to Executives | Yes |
| Consider Feedback from Stockholder Outreach | Yes |
| Terms of Severance Plan Described to Stockholders | Yes |

**TABLE OF CONTENTS**

**ORGANOVO HOLDINGS, INC.**
440 Stevens Ave, Suite 200
Solana Beach, CA 92075

**PROXY STATEMENT FOR THE 2020 ANNUAL MEETING OF STOCKHOLDERS TO BE HELD SEPTEMBER , 2020**

**This Proxy Statement, along with a proxy card, is being made available to our stockholders on or about July , 2020**

## GENERAL INFORMATION

We have made these proxy materials available to you in connection with the solicitation by the Board of Directors (the "Board" or "Board of Directors") of Organovo Holdings, Inc. of proxies to be voted at the 2020 Annual Meeting of Stockholders (the "Annual Meeting" or the "2020 Annual Meeting") to be held virtually on , September , 2020 at 9:00 a.m. (Pacific Daylight Time) via live webcast by visiting www.virtualshareholdermeeting.com/ONVO2020AM. References in this Proxy Statement to the "Company," "Organovo," "we," "our," and "us" are to Organovo Holdings, Inc. and its subsidiaries.

In accordance with the rules of the Securities and Exchange Commission (the "SEC"), we are permitted to furnish proxy materials, including this Proxy Statement and our Annual Report for the fiscal year ended March 31, 2020 (the "Annual Report") to stockholders by providing access to these documents through the internet instead of mailing printed copies. Most stockholders will not receive printed copies of the proxy materials unless requested. Instead, the Notice of Internet Availability of Proxy Materials provides instructions on how to access and review the proxy materials on the internet. The Notice of Internet Availability of Proxy Materials also provides instructions on how to cast your vote via the internet or by telephone. If you would like to receive a printed or email copy of our proxy materials, please follow the instructions for requesting the materials in the Notice of Internet Availability of Proxy Materials.

### Record Date

Holders of shares of our common stock, our only class of issued and outstanding voting securities, at the close of business on July 17, 2020 (the "Record Date") are entitled to vote on the proposals presented at the Annual Meeting. As of July 17, 2020, we had 130,618,203 issued and outstanding shares of common stock.

### Quorum

The presence, in person or by proxy, of the holders of a majority of the outstanding shares of common stock entitled to vote at the virtual Annual Meeting is necessary to constitute a quorum for the transaction of business at the Annual Meeting. Votes for and against, abstentions and "broker non-votes" will each be counted as present for purposes of determining the presence of a quorum.

The Annual Meeting may be adjourned or postponed from time to time and at any reconvened meeting, action with respect to the matters specified in this Proxy Statement may be taken without further notice to stockholders except as required by applicable law and our charter documents.

### Virtual Annual Meeting

The Annual Meeting will be conducted as a virtual meeting of stockholders by means of a live webcast. We believe that hosting a virtual meeting will enable greater stockholder attendance and participation from any location, improved communication and cost savings to our stockholders and support the health of our stockholders and employees given the public health impact of COVID-19. You can virtually attend the Annual Meeting by visiting www.virtualshareholdermeeting.com/ONVO2020AM, where you will be able to vote your shares, and submit your questions during the meeting via the Internet. There will not be a physical meeting location and you will not be able to attend in person.
We invite you to virtually attend the Annual Meeting and request that you vote on the proposals described in this proxy statement. However, you do not need to attend the virtual meeting to vote your shares. Instead, you may vote by Internet, by telephone, or, if you requested and received paper copies of the proxy materials by mail, you may also vote by completing and mailing your proxy card.

The Annual Meeting starts at 9:00 a.m. (Pacific Daylight Time) on , September , 2020. We encourage you to access the meeting website prior to the start time to allow time for check in. If you encounter any difficulties accessing the virtual meeting during the check-in or meeting time, please call the technical support number that will be posted on the virtual shareholder meeting login page.

You do not need to register to virtually attend the Annual Meeting webcast. Follow the instructions on your Notice of Internet Availability or proxy card (if you requested and received a printed copy of the proxy materials) to access the Annual Meeting.

If you wish to submit a question the day of the Annual Meeting, you may log in to the virtual meeting platform at www.virtualshareholdermeeting.com/ONVO2020AM, type your question into the "Ask a Question" field, and click "Submit." Questions pertinent to meeting matters will be answered during the Annual Meeting, subject to time constraints. Questions regarding personal matters, including those related to employment, are not pertinent to annual meeting matters and, therefore, will not be answered.

**Stockholders of Record**

You are a “stockholder of record” if your shares are registered directly in your name with our transfer agent, Continental Stock Transfer and Trust Company. As a stockholder of record, you have the right to grant your voting proxy directly to the Company or to vote in person at the Annual Meeting. All shares represented by a proxy will be voted at the Annual Meeting, and where a stockholder specifies choice with respect to any matter to be acted upon, the shares will be voted in accordance with the specification so made. If a stockholder does not indicate a choice on the proxy card, the shares will be voted in favor of the election of the nominees for director contained in this Proxy Statement and in favor of Proposals 2 through 4.

**Shares Held in Street Name**

You are deemed to beneficially own your shares in “street name” if your shares are held in an account at a brokerage firm, bank, broker-dealer, trust or other similar organization. If this is the case, you will receive a separate voting instruction form with this Proxy Statement from such organization. As the beneficial owner, you have the right to direct your broker, bank, trustee, or nominee how to vote your shares, and you are also invited to attend the Annual Meeting. If you hold your shares in street name and do not provide voting instructions to your broker, bank, trustee or nominee, your shares will not be voted on any proposals on which such party does not have discretionary authority to vote (a “broker non-vote”), as further described below under the heading “Broker Non-Votes.”

Please note that if your shares are held of record by a broker, bank, trustee or nominee and you wish to vote at the virtual Annual Meeting, you will not be permitted to vote at the virtual meeting unless you first obtain a proxy issued in your name from the record holder.

**Broker Non-Votes**

Broker non-votes are shares held by brokers, banks or other nominees who are present in person or represented by proxy, but which are not voted on a particular matter because the brokers, banks or nominees do not have discretionary authority with respect to that proposal and they have not received voting instructions from the beneficial owner. Under the rules that govern brokers, brokers have the discretion to vote on routine matters, but not on non-routine matters. The only routine matter to be considered at the Annual Meeting is the ratification of the appointment of the Company’s independent registered public accountants. The remaining proposals are considered to be non-routine matters. ***As a result, if you do not provide your brokers or nominees with voting instructions on these non-routine matters, your shares will not be voted on these proposals.***

**Voting Matters**

Stockholders are entitled to cast one vote per share of common stock on each matter presented for consideration by the stockholders. A list of stockholders entitled to vote at the Annual Meeting will be available for examination by any stockholder for a proper purpose during normal business hours at the executive offices of the Company for a period of at least ten days preceding the day of the Annual Meeting.

There are four proposals scheduled to be voted on at the Annual Meeting:

1. To elect Keith E. Murphy and Adam Stern as Class III directors to hold office until the 2023 Annual Meeting of Stockholders and until their respective successor(s) are elected and qualified;
2. To approve, on an advisory basis, the appointment of Douglas Jay Cohen, David Gobel and Alison Tjosvold Milhous (collectively, the “Advisory Nominees”) as additional directors to our Board immediately following the final adjournment of the 2020 Annual Meeting (the “Advisory Nominees Proposal”);
3. To ratify the appointment of Mayer Hoffman McCann P.C. as our independent registered public accounting firm for the fiscal year ending March 31, 2021; and
4. To approve, on a non-binding advisory basis, the compensation of our named executive officers.

Our Board of Directors recommends a vote **FOR** the director nominees and **FOR** proposals 2, 3 and 4 listed above.

We are currently unaware of any matters to be raised at the Annual Meeting other than those referred to in this Proxy Statement. If other matters are properly presented at the Annual Meeting for consideration and you have submitted your proxy, the persons named in your proxy will have the discretion to vote on those matters for you.

**Votes Required**

***Proposal 1 – Election of Directors***

Under our Certificate of Incorporation and Bylaws, the Class III directors will be elected by a plurality of the votes cast in person or by proxy at the 2020 Annual Meeting assuming a quorum is present. If you hold your shares through a broker and you do not instruct the broker on how to vote on this proposal, your broker will not have authority to vote your shares. Abstentions and broker non-votes will each be counted as present for purposes of determining the presence of a quorum, but will not have any effect on the outcome of the proposal.

Because this is an uncontested election of directors, Messrs. Murphy and Stern will each be elected to the Board under the plurality voting standard if they receive any vote "FOR" their election. Notwithstanding the plurality voting standard, Messrs. Murphy and Stern have each submitted written irrevocable, conditional resignations from the Board that will be automatically effective if they receive more "WITHHOLD" votes than votes cast "FOR" their election at the Annual Meeting.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR AND SOLICITS PROXIES IN FAVOR OF THE ELECTION OF KEITH E. MURPHY AND ADAM STERN AS CLASS III DIRECTORS.**

***Proposal 2 – Approval of the Advisory Nominees Proposal.***

If a quorum is present, the proposal to approve, on an advisory basis, our Board's appointment of Douglas Jay Cohen, David Gobel and Alison Tjosvold Milhous (collectively, the "Advisory Nominees") as directors of the Board immediately following the final adjournment of the 2020 Annual Meeting requires the affirmative vote of a majority of the votes cast at the 2020 Annual Meeting (the "Advisory Nominees Proposal"). Abstentions and broker non-votes will each be counted as present for purposes of determining the presence of a quorum. Abstentions and broker non-votes will not be considered as votes cast for or against the proposal and will therefore have no effect on the outcome of the vote.

If the Advisory Nominees Proposal receives more "FOR" than "AGAINST" votes at the Annual Meeting, our Board has approved the appointment of the Advisory Nominees, to be automatically effective immediately following the final adjournment of the 2020 Annual Meeting. In addition, each of Company's existing directors (other than Messrs. Murphy and Stern) have submitted written irrevocable, conditional resignations from the Board that will be automatically effective upon the appointment of the Advisory Nominees to the Board, which will result in Messrs. Murphy and Stern and the Advisory Nominees constituting the full membership of the Board. We have been advised by the Advisory Nominees and Messrs. Murphy and Stern that if the Advisory Nominees are appointed to the Board, the Company intends to pursue a drug discovery business model leveraging its 3D bioprinting technology and its expertise in creating functional human tissue models as discussed more fully in the section titled "Business Overview and Plan Following Approval of the Advisory Nominees Proposal" below.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE APPROVAL, ON AN ADVISORY BASIS, OF THE APPOINTMENT OF THE ADVISORY NOMINEES.**

***Proposal 3 – Ratification of Independent Registered Public Accounting Firm***

If a quorum is present, the affirmative vote of a majority of the votes cast at the 2020 Annual Meeting is required for ratification of our independent registered public accounting firm. Abstentions will each be counted as present for purposes of determining the presence of a quorum but will not be considered as votes cast for or against the proposal and will therefore have no effect on the outcome of the vote.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE RATIFICATION OF MAYER HOFFMAN MCCANN P.C. AS THE COMPANY'S INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING MARCH 31, 2021.**

***Proposal 4 – Advisory Vote to Approve Compensation of Named Executive Officers***

If a quorum is present, the proposal to approve, on an advisory basis, the compensation of the Company's named executive officers requires the affirmative vote of a majority of the votes cast at the 2020 Annual Meeting. Abstentions and broker non-votes will each be counted as present for purposes of determining the presence of a quorum. Abstentions and broker non-votes will not be considered as votes cast for or against the proposal and will therefore have no effect on the outcome of the vote.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE APPROVAL, ON AN ADVISORY BASIS, OF THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS.**

**Voting Instructions**

If you are a stockholder of record, you can vote in the following ways:

- **By Internet**: by following the internet voting instructions included on Notice of Internet Availability of Proxy Materials and the proxy card at any time up until 11:59 p.m., Eastern Time, on September , 2020.
- **By Telephone**: by following the telephone voting instructions included on Notice of Internet Availability of Proxy Materials and the proxy card at any time up until 11:59 p.m., Eastern Time, on September , 2020.
- **By Mail**: you may vote by mail by marking, dating and signing your proxy card in accordance with the instructions on it and returning it by mail in the pre-addressed reply envelope provided with the proxy materials. The proxy card must be received prior to the Annual Meeting.

You may also vote your shares during the virtual Annual Meeting. Even if you plan to attend the virtual Annual Meeting, we encourage you to vote in advance by internet, telephone or mail so that your vote will be counted in the event you later decide not to attend the virtual Annual Meeting.

If you hold shares through a bank or broker, please refer to your proxy card, Notice or other information forwarded by your bank or broker to see which voting options are available to you.

**Proxies**

All shares represented by a proxy will be voted, and where a stockholder specifies a choice with respect to any matter to be acted upon, the shares will be voted in accordance with the specification so made. If a stockholder does not indicate a choice on the proxy card, the shares will be voted: (i) in favor of the election of the director nominees contained in this Proxy Statement, (ii) in favor of the Advisory Nominees Proposal, (iii) in favor of ratifying Mayer Hoffman McCann, P.C. as the Company's independent registered public accounting firm for the fiscal year ended March 31, 2021, and (iv) in favor of the non-binding advisory vote on the compensation of our named executive officers; and in the discretion of the proxy holders on any other matter that comes before the meeting.

If your shares are held by a broker, bank or other stockholder of record, in nominee name or otherwise, exercising fiduciary powers (typically referred to as being held in "street name"), you may receive a separate voting instruction form with this Proxy Statement. Your broker may vote your shares on Proposal 3 to ratify the appointment of Mayer Hoffman McCann P.C. as our independent registered public accounting firm, but will not be permitted to vote your shares with respect to Proposal 1, the election of Class III directors, Proposal 2, the Advisory Nominees Proposal, or Proposal 4, the non-binding advisory vote on the compensation of our named executive officers, unless you provide instructions as to how to vote your shares. Please note that if your shares are held of record by a broker, bank or nominee and you wish to vote at the meeting, you will not be permitted to vote at the virtual meeting unless you first receive materials necessary to access the Annual Meeting from the record holder.

**Proxy Revocation Procedure**

If you are a stockholder of record, you may revoke your proxy: (i) by written notice of revocation mailed to and received by the Secretary of the Company prior to the date of the Annual Meeting, (ii) voting again via the internet or by telephone at a later time before the closing of those voting facilities at 11:59 p.m. (Eastern Time) on September , 2020, (iii) by executing and delivering to the Secretary a proxy dated as of a later date than a previously executed and delivered proxy (provided, however, that such action must be taken prior to 11:59 p.m. (Eastern Time) on September , 2020), or (iv) by virtually attending the Annual Meeting and voting electronically by going to www.virtualshareholdermeeting.com/ONVO2020AM and using your unique control number that was included in the Proxy Materials that you received in the mail. Attendance at the virtual Annual Meeting will not in and of itself revoke a proxy.

If your shares are held by a bank, broker or other agent, you may change your vote by submitting new voting instructions to your bank, broker or other agent, or, by referring to your proxy card, Notice or other information forwarded by your bank or broker.

**Voting Results**

We will announce preliminary voting results at the Annual Meeting. We will report final results in a Current Report on Form 8-K filed with the Securities and Exchange Commission.

## COOPERATION AGREEMENT

***Background***

We are a biotechnology company that has historically focused on pioneering the development of 3D bioprinted human tissues that emulate human biology and disease. We had focused our efforts on developing *in vivo* liver tissues to treat end-stage liver disease and a select group of life-threatening, orphan diseases, for which there are limited treatment options other than organ transplantation. We had also pursued research of other potential pipeline *in vivo* tissue constructs in-house and through collaborations with academic and government researchers.

In May 2019, we announced plans to conduct additional preclinical studies necessary to optimize the manufacturing processes for our *in vivo* liver tissues and complete additional preclinical studies that would generate consistent scientific data regarding the prolonged functionality and therapeutic benefits of our in vivo liver tissues.

In August 2019, after a rigorous assessment of our *in vivo* liver therapeutic tissue program following completion of these additional studies, we concluded that the variability of biological performance and related duration of potential benefits no longer supported an attractive opportunity due to redevelopment challenges and lengthening timelines to compile sufficient data to support an Investigational New Drug filing. As a result, we suspended development of our lead program and all other related in-house pipeline development activities. The Board also engaged a financial advisory firm to explore our available strategic alternatives, including evaluating a range of ways to generate value from our technology platform and intellectual property, our commercial and development capabilities, our listing on the Nasdaq Stock Market, and our remaining financial assets. These strategic alternatives included possible mergers and business combinations, sales of part or all of our assets, and licensing and partnering arrangements.

At the same time, we implemented various restructuring steps to manage our resources and extend our cash runway, including reducing commercial activities related to our liver tissues, except for sales of primary human cells out of inventory, negotiating an exit from our long-term facility lease, selling various assets, and reducing our workforce. We did retain certain key management, employees and consultants, our core intellectual property, licenses, collaborations with research institutions and universities, and proprietary equipment.

***Strategic Alternatives Process***

After conducting a diligent and extensive process of evaluating our strategic alternatives and identifying and reviewing potential candidates for a strategic acquisition or other transaction, which included the receipt of more than 27 non-binding indications of interest from interested parties and careful evaluation and consideration of those proposals, we negotiated and entered into a Merger Agreement with Tarveda Therapeutics, Inc. (“Tarveda”). Our Board determined that it would be in the best interests of Organovo and its stockholders, and maximize stockholder value, to complete a merger transaction with Tarveda. Our stockholders, however, did not approve the proposed merger with Tarveda at a Special Meeting of Stockholders held on April 7, 2020 to vote on the proposed merger (the “Special Meeting”), and as a result, we terminated our agreement with Tarveda.

***Post Special Meeting Activities***

Following the Special Meeting, our Board continued to reach out to our two largest institutional stockholders, each of whom voted against the Merger at the Special Meeting, seeking to engage with them on the Company’s strategic alternatives and the path to maximize stockholder value. One of our stockholders indicated its desire for the Board to consider opportunities in the 3D bioprinting field and suggested that the Board should speak with Mr. Murphy for potential business ideas.

On May 31, 2020, Mr. Murphy, who previously served as the President and Chief Executive Officer of Organovo from February 2012 through April 2017, and as Chairman from February 2012 through August 2017, submitted a solicitation notice (the “Stockholder Nomination”) in accordance with our Bylaws indicating his intention to nominate himself, Douglas Jay Cohen and Mr. Stern as nominees for election to the Board at the 2020 Annual Meeting. In connection with the Stockholder Nomination and the information it had received from our largest stockholders, our Board and Mr. Murphy engaged in discussions regarding the composition of the Board and the Company’s business and strategic opportunities.

***Cooperation Agreement Terms***

On July 14, 2020, we entered into a Cooperation Agreement with Mr. Murphy. Pursuant to the Cooperation Agreement, the Board appointed Messrs. Murphy and Stern to the six member Board as Class III directors, with terms expiring at the Company’s 2020 Annual Meeting and two of the Company’s existing directors, Richard Maroun and David Shapiro, resigned from the Board and from each Board committee on which they serve, effective immediately.

The Board also agreed to nominate, recommend, support and solicit proxies for the re-election of Messrs. Murphy and Stern at the 2020 Annual Meeting. The Board also agreed to nominate, recommend, support and solicit proxies for an advisory stockholder vote (the “Advisory Nominees Proposal”) at the 2020 Annual Meeting to appoint three individuals, Douglas Jay Cohen, David Gobel and Alison Tjosvold Milhous (collectively, the “Advisory Nominees”), to the Board. Mr. Murphy identified each of the Advisory Nominees. Our Board has evaluated and interviewed each of the Advisory Nominees, and determined that each individual satisfies the criteria set forth in the Cooperation Agreement and the Company’s corporate governance guidelines for selection as an Advisory Nominee and for service on the Board.

If the final vote tabulation for the Advisory Nominees Proposal receives more votes cast "FOR" than "AGAINST" its approval, the Board has approved the appointment of the Advisory Nominees, to be automatically effective immediately following the final adjournment of the 2020 Annual Meeting. In addition, immediately following the appointment of the Advisory Nominees, each of our existing directors (other than Messrs. Murphy and Stern) will resign from the Board, which will result in Messrs. Murphy and Stern and the Advisory Nominees constituting the full membership of the Board.

If the Advisory Nominees Proposal receives more votes cast "AGAINST" than "FOR" its approval at the 2020 Annual Meeting, the Advisory Nominees will not be appointed to the Board and the Company's existing directors will continue to serve on the Board. In addition, Messrs. Murphy and Stern have each agreed to resign from the Board immediately following the final adjournment of the 2020 Annual Meeting if they individually receive more "WITHHOLD" votes than "FOR" votes cast for their election at the 2020 Annual Meeting.

Pursuant to the Cooperation Agreement, Mr. Murphy agreed to withdraw his Stockholder Nomination and to withdraw his Section 220 demand under Delaware General Corporation Law requesting a list of the Company's stockholders and other corporate records. Mr. Murphy also agreed to certain standstill provisions with respect to his actions with regard to the Company and its Common Stock for the duration of the Standstill Period, which is defined in the Cooperation Agreement as the period commencing on the date of the Agreement and ending thirty (30) calendar days prior to the expiration of the advance notice period for the submission by stockholders of director nominations for consideration at the 2021 Annual Meeting (as set forth in the advance notice provisions of the Company's Amended and Restated Bylaws).

Mr. Murphy also entered into Release Agreements (the "Release Agreements"), in which he agreed (on his behalf and on behalf of his affiliates) to a general release of claims in favor of each of the Company's directors and officers through the date of Cooperation Agreement and to a covenant not to sue.

The Cooperation Agreement also provides for the Company to enter into a Separation and Mutual Release Agreement (the "Director Agreements") with each of the Company's existing directors who resign in connection with the Cooperation Agreement or who resign following the final adjournment of the 2020 Annual Meeting as a result of the Advisory Nominees being appointed to the Board based on our stockholders' vote on the Advisory Nominees Proposal. Pursuant to the Director Agreements, the Company will release each resigning director, and each resigning director will release the Company, from any and all claims that such party may have against the other for acts or omissions that occurred on or before the date of the respective Director Agreement. The resigning directors also agreed to certain standstill provisions and cooperation services. In the Director Agreements, the Company agreed to purchase a six-year director and officer liability insurance tail policy and clarified that any existing director resignations as contemplated by the Director Agreements would constitute a "change in control" pursuant to the terms of the respective equity award agreements and the Company's 2012 Equity Incentive Plan, as amended, which results in the acceleration of any unvested equity awards held by the resigning directors.

The Cooperation Agreement also provides that the Company will enter into a Separation Agreement and Mutual Release (the "Officer Agreements") with each officer who resigns from the Company following the final adjournment of the 2020 Annual Meeting. Pursuant to the Officer Agreements, the Company will release each resigning officer, and each resigning officer will release the Company, from any and all claims that such party may have against the other for acts or omissions that occurred on or before the date of the respective Officer Agreement. It also clarifies that the appointment of the Advisory Nominees to the Board will constitute a "change in control" under the Company's Severance and Change in Control Plan, as amended (the "Severance Plan"), which was in effect before the Company received the Stockholder Nomination and before the Company entered into the Cooperation Agreement, which will entitle each resigning officer to the severance benefits set forth in the Severance Plan. Pursuant to the terms of the Severance Plan, each of the executive officers is entitled to receive a cash severance payment equal to two times such executive officer's base salary, paid in a lump sum, plus a pro-rated target bonus for 2021 fiscal year, health benefit continuation for up to 18 months, and outplacement assistance for 18 months. Each executive officer will also receive full accelerated vesting of all outstanding equity awards and a one-year time period to exercise any stock options. Such resigning officers each also agreed to certain standstill provisions in the Officer Agreement.

## PROPOSAL 1: ELECTION OF DIRECTORS

### *General*

Our Certificate of Incorporation and Bylaws provide for a classified Board of Directors consisting of three classes of directors with staggered three-year terms. The Board of Directors currently consists of 6 directors, having terms expiring at the respective annual meetings of stockholders listed below:

| 2020 Annual Meeting | 2021 Annual Meeting | 2022 Annual Meeting |
|---|---|---|
| Keith E. Murphy | Kirk Malloy, Ph.D. | Taylor Crouch |
| Adam Stern | Carolyn Beaver | Mark Kessel |

### *Cooperation Agreement*

As described above, we entered into a Cooperation Agreement with Mr. Murphy. Pursuant to the Cooperation Agreement, the Board appointed Mr. Murphy and Mr. Stern to the six member Board as Class III directors in July 2020, with terms expiring at the 2020 Annual Meeting and two of our previous directors, Richard Maroun and David Shapiro, each resigned from our Board and from each Board committee on which they served.

Pursuant to the terms of the Cooperation Agreement, our Board also agreed to nominate, recommend, support and solicit proxies for the re-election of Messrs. Murphy and Stern at the 2020 Annual Meeting. However, pursuant to the terms of the Cooperation Agreement, Mr. Murphy and Mr. Stern have each provided irrevocable letters of resignation, providing that if Mr. Murphy or Mr. Stern receive more "WITHHOLD" votes than votes cast "FOR" his respective election at the 2020 Annual Meeting, then he shall resign as a member of our Board and from each Board committee on which he serves, effective immediately following the final adjournment of the 2020 Annual Meeting.

See "Proposal 2: Advisory Vote to Approve the Appointment of Three Additional Directors to the Board Immediately Following the Annual Meeting" below for a discussion regarding the potential appointment of the Advisory Nominees and the resignation of our existing directors (other than Messrs. Murphy and Stern) immediately following the final adjournment of the 2020 Annual Meeting.

### *Proposal to Elect Two Directors to Hold Office for Three Years until the 2023 Annual Meeting*

The Board, based upon feedback from its engaged stockholders, is recommending, and pursuant to the terms of the Cooperation Agreement, has nominated for election at the Annual Meeting the following slate of two nominees to hold office for three years until the 2023 Annual Meeting of Stockholders and until their successor(s) are duly elected and qualified.

| Name | Age | Director Since | Principal Occupation | Experience/ Qualifications | Current Committee Membership | Independent ? |
|---|---|---|---|---|---|---|
| Keith E. Murphy | 47 | 2020 | CEO, Viscient Biosciences | -Industry<br>-Strategy | N/A | No |
| Adam Stern | 56 | 2020 | CEO, SternAegis Ventures | -Corporate Finance<br>-Industry | -Audit Committee<br>-Compensation Committee | Yes |

The nominees are currently serving as directors and have indicated their willingness to serve if elected, but if they should be unable or unwilling to stand for election, the shares represented by proxies may be voted for a substitute as the Board of Directors may designate, unless a contrary instruction is indicated in the proxy.

### *Additional Information*

For additional information about each nominee and each of the other directors serving on our Board, please see pages 29-32 in this Proxy Statement. See "Cooperation Agreement" in this Proxy Statement for additional information on the Cooperation Agreement.

### *Vote Required*

Under our Certificate of Incorporation and Bylaws, the Class III directors will be elected by a plurality of the votes cast in person or by proxy at the 2020 Annual Meeting assuming a quorum is present. If you hold your shares through a broker and you do not instruct the broker on how to vote on this proposal, your broker will not have authority to vote your shares. Abstentions and broker non-votes will each be counted as present for purposes of determining the presence of a quorum, but will not have any effect on the outcome of the proposal.

Because this is an uncontested election of directors, Messrs. Murphy and Stern will each be elected to the Board under the plurality voting standard if they receive votes "FOR" their re-election. Notwithstanding the plurality voting standard, Messrs. Murphy and Stern have each submitted written irrevocable, conditional resignations from the Board that will be automatically effective if they receive more "WITHHOLD" votes than votes cast "FOR" their election at the Annual Meeting.

***Board Recommendation***

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR AND SOLICITS PROXIES IN FAVOR OF THE ELECTION OF KEITH E. MURPHY AND ADAM STERN.**

Unless otherwise instructed, it is the intention of the persons named as proxy holders in the proxy card to vote shares represented by properly executed proxy cards for the election of Keith E. Murphy and Adam Stern.

## PROPOSAL 2: ADVISORY VOTE TO APPROVE THE APPOINTMENT OF THREE ADDITIONAL DIRECTORS

At the Annual Meeting, our stockholders are being requested to consider and approve, on an advisory basis, the Board's appointment of three additional directors Douglas Jay Cohen, David Gobel and Alison Tjosvold Milhous (each an "Advisory Nominee," and collectively, the "Advisory Nominees"), to our Board immediately following the final adjournment of the Annual Meeting (the "Advisory Nominees Proposal").

***Cooperation Agreement and Background***

Pursuant to the Cooperation Agreement, if the Advisory Nominees Proposal receives more votes cast "FOR" than "AGAINST" its approval, our Board has agreed to appoint each of the Advisory Nominees to the Board to be automatically effective immediately following the final adjournment of the Annual Meeting. Further, immediately following the appointment of the Advisory Nominees, each of our existing directors (other than Messrs. Murphy and Stern) have agreed to resign from the Board. As a result, if the Advisory Nominees Proposal is approved (and provided that neither Messrs. Murphy nor Stern receive more "WITHHOLD" votes than votes cast "FOR" their respective reelection), then our Board shall consist of Keith E. Murphy, Adam Stern, Douglas Jay Cohen, David Gobel and Alison Tjosvold Milhous immediately following the final adjournment of the Annual Meeting (the "New Director Slate").

The members of the New Director Slate have advised the Company that they believe it is in the best interests of the Company and its stockholders to utilize the Company's existing technology and resources to pursue a small molecule drug discovery and development business model.

Please see "Business Overview and Plan Following Approval of Advisory Nominees Proposal" in this Proxy Statement for additional information regarding the New Director Slate's proposed go-forward business plan and related risks and uncertainties.

***Board Membership***

If the Advisory Nominees Proposal receives the required stockholder approval, then immediately following the Annual Meeting our Board of Directors will consist of the following New Director Slate with terms expiring at the respective annual meetings of stockholders listed below:

| 2021 Annual Meeting | 2022 Annual Meeting | 2023 Annual Meeting |
|---|---|---|
| Alison Tjosvold Milhous | Douglas Jay Cohen | Keith E. Murphy |
| | David Gobel | Adam Stern |

If the final vote tabulation for this Advisory Nominees Proposal receives more votes cast "AGAINST" than "FOR" its approval, the Advisory Nominees will not be appointed to our Board and our Board of Directors will consist of the following six directors with terms expiring at the respective annual meetings of stockholders listed below (provided that neither Messrs. Murphy and Stern receive more "WITHHOLD" votes than votes case "FOR" the approval of his respective re-election):

| 2021 Annual Meeting | 2022 Annual Meeting | 2023 Annual Meeting |
|---|---|---|
| Kirk Malloy, Ph.D. | Taylor Crouch | Keith E. Murphy |
| Carolyn Beaver | Mark Kessel | Adam Stern |

In determining whether a nominee identified by Mr. Murphy was qualified to be appointed to our Board, our Board considered, in addition to all other factors it generally considers when selecting nominees, whether the appointment of any such Advisory Nominee, both individually and collectively with Messrs. Murphy and Stern, will result in our Board maintaining the requirements, attributes and qualities that our current Board possesses and which we believe are fundamental to the overall success of our business and whether such nominees satisfy the membership criteria set forth in our Corporate Governance Guidelines. These, include, but are not limited to (i) having a majority of "independent" directors under the rules promulgated by Nasdaq, (ii) having a sufficient number of female directors to comply with California law and (iii) having at least one director serving after the 2020 Annual Meeting having the requisite financial experience to serve as Chair of our Audit Committee of the Board and to qualify as a "financial expert" as required by SEC rules and Nasdaq. See "Corporate Governance – Consideration of Director Nominees" in this Proxy Statement for more information about the process and criteria that our Board considered in evaluating nominees for membership on our Board.

Based on our Board's evaluation of the attributes, experience and business acumen of the Advisory Nominees, our Board has determined that each of the Advisory Nominees satisfies the requirements described above to serve as members of our Board if this Advisory Nominees Proposal is approved by our stockholders. Our Board has determined that each Advisory Nominee qualifies as an "independent" director under the Nasdaq rules. Our Board has also determined that Ms. Milhous has the requisite financial experience to serve as Chair of our Audit Committee of the Board and also qualifies as a "financial expert" as required by the SEC rules and Nasdaq.

***Background on Advisory Nominees***

Subject to stockholder approval of this Advisory Nominees Proposal, our Board will appoint the following Advisory Nominees to our Board automatically effective immediately following the final adjournment of the 2020 Annual Meeting:

| Name | Age | Principal Occupation | Experience/ Qualifications | Independent ? |
|---|---|---|---|---|
| Douglas Jay Cohen | 49 | CEO of IR Medtek LLC | Leadership; Industry; and Strategy | Yes |
| David Gobel | 67 | CEO of Methuselah Fund | Leadership; Industry; Board Service; Strategy | Yes |
| Alison Tjosvold Milhous | 41 | Accounting Consultant | Accounting; Finance; and Industry | Yes |

**Douglas Jay Cohen** has served as president and Chief Executive Officer of IR Medtek LLC since January 2019, a medical device company developing a non-invasive probe for cancer detection by primary care physicians using a technology licensed from the Ohio State University. Prior to IR Medtek, Mr. Cohen served as President and Chief Executive Officer of Beacon Street Innovations, an advanced technology printing company from September 2016 to present. From January 1994 to September 2016, Mr. Cohen served as Vice President of Operations and Engineering at Screen Machine Industries, an industrial and construction heavy equipment manufacturer. As an active investor in startup companies, Mr. Cohen has invested in over 20 biotech startups in the past 10 years, including investing in Organovo in 2013 and maintaining a position in the company ever since. Mr. Cohen received a B.S. from the Massachusetts Institute of Technology.

Mr. Cohen's experience in the life sciences industry, his experience in managing emerging growth companies and his experience in developing business strategies qualifies him to be appointed as a member of our Board of Directors.

**David Gobel** has served as Chief Executive Officer of Methuselah Fund LLC since December 2016 and as Chief Executive Officer of Methuselah Foundation since September 2001, promoting increasing the healthy human lifespan by various means including; performance prizes, targeted grant making, education, and the creation/funding of biotech startups. Mr. Gobel became Chief Venture Strategist at Transportation Security Administration from January 2009 until March 2013, where he was responsible for strategic planning, innovation management and creation of a novel Venture Capital capability for TSA and then Department of Homeland Security by partnering with In-Q-Tel. Mr. Gobel was a member of the board of Volumetric Biotechnologies, from April 2018 to January 2020, a company that focuses on the development of biohologrаphic human tissue printing. Since July 2018, Mr. Gobel served as member of the board for Turn Bio, and since May 2020 as chairman of the board of Turn Bio. Mr. Gobel has served as a board member of Leucadia Therapeutics since October 2015, and as an independent founding board member of Oisin Therapeutics since December 2014.

Mr. Gobel's previous services as chief executive officer for other biotechnology companies, his experience and expertise with human tissue printing companies and his extensive board experience qualify him to be appointed as a member of our Board of Directors.

**Alison Tjosvold Milhous** has 20 years of audit and technical accounting experience and is a certified public accountant. She is currently an independent consultant assisting public and private companies with accounting and reporting needs primarily within the life sciences and technology industries. Ms. Milhous was previously an audit partner at Grant Thornton LLP from August 2015 through September 2019 and held various positions with increasing responsibility at Grant Thornton from June 2002 as an audit associate through July 2015 as an audit senior manager. She began her career in June 2000 at Arthur Andersen LLP. Ms. Milhous served on the membership committee of Athena San Diego, a professional women's leadership organization with a STEM focus, from August 2012 through September 2019 and was on the Pinnacle steering committee from September 2013 through April 2015. Ms. Milhous received a Bachelor of Science degree in Business Administration with a dual concentration in Accounting and Finance from California State Polytechnic University, San Luis Obispo.

Ms. Milhous' extensive financial and accounting experience and her experience providing audit and consulting services to life sciences companies qualify her to be appointed as a member of our Board of Directors.

***Vote Required***

If a quorum is present, this Proposal 2, to approve, on an advisory basis, the Board's appointment of the Advisory Nominees immediately following the 2020 Annual Meeting requires the affirmative vote of a majority of the votes cast at the 2020 Annual Meeting. If you hold your shares through a broker and you do not instruct the broker on how to vote on this Proposal 2, your broker will

not have authority to vote your shares. Abstentions and broker non-votes will each be counted as present for purposes of determining the presence of a quorum but will not have any effect on the outcome of the proposal.

***Board Recommendation***

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE APPROVAL, ON AN ADVISORY BASIS, OF THE APPOINTMENT OF THE ADVISORY NOMINEES.**

Unless otherwise instructed, it is the intention of the persons named as proxy holders in the proxy card to vote shares represented by properly executed proxy cards for the approval of this Proposal 2.

## BUSINESS OVERVIEW AND PLAN FOLLOWING APPROVAL OF THE ADVISORY NOMINEES PROPOSAL

*Portions of this section include "forward-looking statements" within the meaning of the safe harbor provisions of the United States Private Securities Litigation Reform Act of 1995, based on our current beliefs, expectations and projections regarding the proposed business of the Company if the Advisory Nominees Proposal is approved at the Annual Meeting. The words "believe," "expect," "anticipate," "project," "could," "would," and similar expressions, among others, generally identify "forward-looking statements," which speak only as of the date of this Proxy Statement. The matters discussed in these forward-looking statements are subject to risks, uncertainties and other factors that could cause the Company's actual results to differ materially from those projected, anticipated or implied in the forward-looking statements. As a result, you should not place undue reliance on any forward-looking statements. The most significant of these risks, uncertainties and other factors are described in the section titled "Risk Factors" in this section and those risk and uncertainties set forth in the Company's Form 10-K for the fiscal year ended March 31, 2020, filed with the SEC on May 28, 2020. Except to the limited extent required by applicable law, we undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.*

We are an early-stage biotechnology company that has focused on pioneering the development of bioprinted 3D human tissues that emulate key aspects of human biology and disease. If the Advisory Nominees Proposal is approved at the Annual Meeting, the New Director Slate intends to recommence the Company's operations and focus its efforts on developing highly customized human tissues as living, dynamic models of human biology and disease for use in drug discovery and development.

**Historical Operations and Strategic Alternatives Process**

We have previously focused our efforts on developing our *in vivo* liver tissues to treat end-stage liver disease and a select group of life-threatening, orphan diseases, for which there are limited treatment options other than organ transplantation. We also explored the development of other potential pipeline *in vivo* tissue constructs in-house and through collaborations with academic and government researchers. In the past, we also explored the development of *in vitro* tissues, including proof of concept models of diseased tissues, for use in drug discovery and development.

In August 2018, following a pre-pre-IND application meeting with the Food and Drug Administration (the "FDA") regarding our lead liver therapeutic candidate, we announced that we were concentrating our financial resources around supporting our healthy liver therapeutic tissue development, and that we would continue to opportunistically generate revenue to support our therapeutics program by leveraging our cell and in vitro tissue platform including providing funded access to our developmental in vitro liver tissue platform to clients for their own R&D programs.

In August 2019, after a rigorous assessment of our *in vitro* liver therapeutic tissue program, we concluded that the variability of biological performance and related duration of potential benefits no longer supported an attractive opportunity due to redevelopment challenges and lengthening timelines to compile sufficient data to support an IND filing. As a result, we suspended development of our lead program and all other related in-house pipeline development activities.

Our Board also engaged a financial advisory firm to explore our available strategic alternatives, including evaluating a range of ways to generate value from our technology platform and intellectual property, our commercial and development capabilities, our listing on the Nasdaq Capital Market, and our remaining financial assets. These strategic alternatives included possible mergers and business combinations, sales of part or all of our assets, and licensing and partnering arrangements. We implemented various restructuring steps to manage our resources and extend our cash runway, including reducing commercial activities related to our liver tissues, except for sales of primary human cells out of inventory, negotiating an exit from our long-term facility lease, selling various assets, and reducing our workforce. Additionally, in November 2019, we sold certain inventory and equipment and related proprietary information held by our wholly-owned subsidiary, Samsara Sciences, Inc. ("Samsara"), and as a result of such sale, Samsara ceased its operations.

After conducting a diligent and extensive process of evaluating strategic alternatives and identifying and reviewing potential candidates for a strategic acquisition or other transaction, which included the receipt of more than 27 non-binding indications of interest from interested parties and careful evaluation and consideration of those proposals, and following extensive negotiation with Tarveda, on December 13, 2019, we entered into a merger agreement with Tarveda (the "Merger Agreement"). Pursuant to the Merger Agreement, and subject to the satisfaction or waiver of the conditions set forth in the Merger Agreement, our wholly-owned merger subsidiary would merge (the "Merger") into Tarveda, with Tarveda surviving the Merger. The Merger Agreement included various conditions to the consummation of the Merger, including approval by our stockholders at the Special Meeting.

On April 7, 2020 at the Special Meeting, the Merger was not approved by our stockholders. As a result, we terminated the Merger Agreement with Tarveda.

**The Cooperation Agreement and Advisory Nominees Proposal**

Following the Special Meeting and the termination of the Merger Agreement, our Board continued to solicit stockholder feedback regarding the Company's strategic alternatives and how to maximize stockholder value. In response to feedback from its largest stockholder regarding its desire for the Board to consider opportunities in the 3D bioprinting field and suggestion that the Board should speak with Mr. Murphy, the Company's founder, stockholder and former Chief Executive Officer and Chairman, for potential business ideas, our Board initiated discussions with Mr. Murphy. Based on these discussions, we entered into a Cooperation Agreement with Mr. Murphy on July 14, 2020 (the "Cooperation Agreement"). Under the terms of the Cooperation Agreement, the Board appointed Mr. Murphy and Adam K. Stern to the Board as Class III directors, and two of the Company's existing directors, Richard Maroun and David Shapiro, resigned from the Board and the committees thereof. The Board also agreed to nominate, recommend, support and solicit proxies for the re-election of Messrs. Murphy and Stern at the Annual Meeting. The Board also agreed to nominate, recommend, support and solicit proxies for the Advisory Nominees Proposal.

**Drug Discovery Opportunities**

The New Director Slate has advised the Company that if the Advisory Nominees Proposal is approved at the Annual Meeting, the New Director Slate intends to recommence operations and focus the Company's efforts on developing highly customized human tissues as living, dynamic models of human biology and disease for use in drug discovery and development. The New Director Slate has advised the Company that it believes our proprietary technology can be used to build functional 3D human tissues that mimic key aspects of native human tissue composition, architecture, and function. The New Director Slate also believes we can utilize our proprietary technology to develop highly customized and dynamic models of human disease, including cell type-specific compartments, prevalent intercellular tight junctions, and microvascular structures. They believe these features can facilitate the development of complex, multicellular disease models for use in the development of targeted therapeutics for various diseases including, among others, intestine, kidney, skin, and breast diseases. Market opportunities may include externally-partnered or internally-directed drug discovery and the clinical development of new molecular entities or repurposed drugs in-licensed from other pharmaceutical companies. The goal of the New Director Slate is to establish a pipeline of drug candidates in high-value disease areas, aiming to commence human clinical testing for at least one drug candidate within a three to four-year timeframe.

The New Director Slate advised the Company that it believes the Company has a significant opportunity to change the classic model of drug discovery using 3D bioprinted human tissues and other 3D models (sometimes known as "organoids" or "organs on a chip"). They have advised that the Company's new paradigm will involve augmenting available animal disease models, or replacing animal disease models altogether, in the discovery process with more relevant disease models utilizing 3D bioprinted human tissues developed by the Company. They believe the Company's 3D bioprinted human tissues may enable the Company to study the treatment of human disease by replicating key aspects of human biology in areas where this is currently a challenge with existing models. Rather than offering contract research services (as the Company has done in the past), they believe the Company should focus on identifying and developing its own drug candidates, including from unique compounds or repurposed drugs in-licensed from other pharmaceutical companies. After identifying a drug candidate, they may have the Company out-license the drug candidate or they may elect to have the Company develop the drug candidate internally. In addition to drug discovery, they believe the Company should continue to evaluate opportunities to monetize its intellectual property and technologies along the way as a means to generate funds to support its primary business. They also believe that the Company should continue to identify and work with partners and collaborators, including leading academic research sites, to develop new enabling applications which can support its discovery and development mission.

The New Director Slate believes the ability to leverage the Company's existing technology and expertise in developing 3D human tissues provides a unique opportunity to enhance the drug discovery process and build value for the Company's stockholders. The Company has already developed a wide set of 3D human tissues, including intestine, kidney, skin and breast tissues. The New Director Slate believes these existing 3D human tissues can be further developed to create disease models suitable for drug discovery within a reasonable development timeline of six to 12 months per tissue model to be selected by the New Director Slate. The New Director Slate believes that the potential power of these diseases models is that they may enable the Company to identify drug candidates where the pharmaceutical industry has the most trouble due to the current lack of predictive human disease models for many significant disease areas.

While the New Director Slate will need to evaluate which opportunities the Company should pursue after the Annual Meeting and after bringing on new scientific leadership, intestinal diseases provide an illustrative example of the Company's potential opportunities. The Company has previously developed 3D intestine tissue that recapitulates the morphology and function of native tissue. The New Director Slate believes the Company may be able to further develop its 3D intestine tissues to demonstrate important aspects of Crohn's disease, IBD and other difficult to treat intestinal diseases. They believe the Company could then use these newly developed disease models to evaluate which genes are most relevant to the respective diseases and could be potentially blocked by a drug to treat the

disease. According to Grandview Research, the global market for inflammatory bowel disease alone is estimated to reach $22.4 billion by 2026.

The New Director Slate intends to explore pharmaceutical partnering, collaboration and licensing opportunities to leverage the Company's drug discovery platform and to generate funding to support additional IND-track programs. Finally, as part of the Company's drug discovery process, the New Director Slate intends to leverage the Company's 3D human tissues and disease models to explore opportunities to repurpose known compounds in disease areas of interest to the Company and the New Director Slates believes that the disease models the Company can create with its 3D bioprinting technology may be able to revel biology that was not revealed in other drug development approaches. Because these known compounds have been studied in pre-clinical studies (and found to be active and non-toxic in some cases) by other companies, the New Director Slate believes the Company may have the opportunity to accelerate the Company's path to clinical studies.

**Our Platform Technology**

Our 3D human tissue platform is enabled by our proprietary NovoGen Bioprinters® and related technologies for preparing bio-inks and bioprinting multicellular tissues with complex architecture. Our foundational proprietary technology, grounded in over a decade of peer-reviewed scientific publications, derives from research led by Dr. Gabor Forgacs, one of our founders and a former George H. Vineyard Professor of Biological Physics at the University of Missouri-Columbia ("MU"). We have a broad portfolio of intellectual property rights covering the principles, enabling instrumentation, applications, and methods of cell-based printing, including exclusive licenses to certain patented and patent pending technologies from MU and Clemson University. We own more than 100 patents and pending applications worldwide covering specific tissue designs, uses, and methods of manufacture.

**The NovoGen Bioprinter® Platform**

Our NovoGen Bioprinters are automated devices that enable the fabrication of 3D living tissues comprised of mammalian cells. A custom graphic user interface GUI facilitates the 3D design and execution of scripts that direct precision movement of multiple dispensing heads to deposit defined cellular building blocks called bio-ink. Bio-ink can be formulated as a 100% cellular composition or as a mixture of cells and other matter (hydrogels, particles). Our NovoGen Bioprinters can also dispense pure hydrogel formulations, provided the physical properties of the hydrogel are compatible with the dispensing parameters. Most typically, hydrogels are deployed to create void spaces within specific locations in a 3D tissue or to aid in the deposition of specific cell types. We are able to employ a wide variety of proprietary cell- and hydrogel-based bio-inks in the fabrication of tissues. Our NovoGen Bioprinters also serve as important components of our tissue prototyping and manufacturing platform, as they are able to rapidly and precisely fabricate intricate small-scale tissue models for in vitro use as well as larger-scale tissues suitable for in vivo use.

Generation of bio-ink comprising human cells is the first step in our standard bioprinting. A wide variety of cells and cell-laden hydrogels can be formulated into bio-ink and bioprinted tissues, including cell lines, primary cells, and stem/progenitor cells. The majority of tissue designs employ two or more distinct varieties of bio-ink, usually comprised of cells that represent distinct compartments within a target tissue. For example, a 3D kidney tissue might consist of two to three distinct bio-inks that are each made from a single cell type, a combination of cell types, and/or a combination of primary cells and one or more bio-inert hydrogels that serve as physical supports for the bioprinted tissue during its maturation period, or to transiently occupy negative spaces in a tissue design.

Our 3D bioprinted tissues can facilitate the development of complex, multicellular disease models for use in the development of targeted therapeutics for cardiovascular disease, lung disease, kidney disease, and oncology. As noted above, the New Director Slate believes that market opportunities within this aspect of our business may include externally-partnered or internally-directed drug discovery and the clinical development and commercialization of new molecular entities using highly customized 3D tissue models.

**Research Collaborations**

We continue to collaborate with several academic institutions by providing them with access to our NovoGen Bioprinters for research purposes, including: Yale School of Medicine, University of California, San Francisco, Knight Cancer Institute at Oregon Health & Science University, and the University of Virginia. We believe that the use of our bioprinting platform by major research institutions may help to advance the capabilities of the platform and generate new applications for bioprinted tissues. In some instances, an academic institution or other third party has provided funding to support the academic collaborator's access to our technology platform. This funding is typically reflected as collaboration revenues in our financial statements. Our research collaborations typically involve both us and the academic partner contributing resources directly to projects, but also involves sponsored research agreements where we fund specific research programs. We are not currently generating any revenues from these collaborations.

**Intellectual Property**

We rely on a combination of patents, trademarks, trade secrets, confidential know-how, copyrights and a variety of contractual mechanisms such as confidentiality, material transfer, licenses, research collaboration, limited technology access, and invention assignment agreements, to protect our intellectual property. Our intellectual property portfolio for our core technology was initially built through licenses from MU and the Medical University of South Carolina. We subsequently expanded our intellectual property portfolio by filing patent and trademark applications worldwide and negotiating additional licenses and purchases.

We solely own or hold exclusive licenses to 22 issued U.S. patents and more than 45 issued international patents in foreign jurisdictions including Australia, Canada, China, France, Great Britain, Germany, Hong Kong, Israel, Japan, South Korea, the Netherlands, Russia, Singapore and Switzerland. We solely or jointly own or hold exclusive licenses to 19 pending U.S. patent applications and more than 80 pending international applications in foreign jurisdictions including Australia, Canada, China, the European Patent Office, Hong Kong, India, Japan, South Korea and New Zealand. These patent families relate to our bioprinting technology and our engineered tissue products and services, including our various uses in areas of tissue creation, in vitro testing, utilization in drug discovery, and in vivo therapeutics.

**In-Licensed Intellectual Property**

In 2009 and 2010, we obtained world-wide exclusive licenses to intellectual property owned by MU and the Medical University of South Carolina, which now includes 6 issued U.S. patents, 2 pending U.S. applications, 11 issued international patents and 1 pending international application. Dr. Gabor Forgacs, one of our founders and a former George H. Vineyard Professor of Biophysics at MU, was one of the co-inventors of all of these works (collectively, the "Forgacs Intellectual Property"). The Forgacs Intellectual Property provides us with intellectual property rights relating to cellular aggregates, the use of cellular aggregates to create engineered tissues, and the use of cellular aggregates to create engineered tissue with no scaffold present. The intellectual property rights derived from the Forgacs Intellectual Property also enables us to utilize our NovoGen Bioprinter to create engineered tissues.

In 2011, we obtained an exclusive license to a U.S. patent (U.S. Pat. No. 7,051,654) owned by the Clemson University Research Foundation that provides us with intellectual property rights relating to methods of using ink-jet printer technology to dispense cells and relating to the creation of matrices of bioprinted cells on gel materials.

In 2015, we obtained world-wide exclusive licenses to intellectual property owned by The University of Queensland (collectively, "UniQuest Intellectual Property") relating to technologies for producing kidney cells and kidney organoids from induced pluripotent stem cells ("iPSCs"). At the time, Professor Melissa Little and her team at The University of Queensland developed a method of growing kidney tissue from iPSCs for potential use in drug screening, disease modeling and cell therapy. Professor Little's research was eventually published in 2015 in the prestigious scientific journal Nature. Currently, the UniQuest Intellectual Property includes 2 pending U.S. patent applications, 2 issued international patents and 15 pending international patent applications.

The patent rights we obtained through these exclusive licenses are not only foundational within the field of 3D bioprinting but provide us with favorable priority dates. We are required to make ongoing royalty payments under these exclusive licenses based on net sales of products and services that rely on the intellectual property we in-licensed. For additional information regarding our royalty obligations see "Note 4. Licensing Agreements and Research Contracts" in the Notes to Consolidated Financial Statements included in this Annual Report.

**Company Owned Intellectual Property**

In addition to the intellectual property we have in-licensed, we have historically innovated and grown our intellectual property portfolio.

With respect to our bioprinting platform, we have 7 issued U.S. patents and 13 issued foreign patents directed to our NovoGen Bioprinter and methods of bioprinting: U.S. Patent Nos. 8,931,880; 9,149,952; 9,227,339; 9,315,043; 9,499,779; 9,855,369; and 10,174,276; Australia Patent Nos. 2011318437, 2015202836, 2016253591, and 2013249569; China Patent Nos. ZL201180050831.4 and ZL201480054148.1; European Patent No. 2838985; Hong Kong Patent No. HK1187024; Israel Patent No. 225392; Japan Patent Nos. 6333231 and 6566426; Russia Patent No. 2,560,393; Singapore Patent No. 11201600770R. We have additional U.S. continuation applications pending in these families as well foreign counterpart applications in multiple countries.

Our ExVive™ Human Liver Tissue is protected by U.S. Patent Nos. 9,222,932, 9,442,105 and 10,400,219; Singapore Patent No. 11201507202Y; Israel Patent No. 241055; Australia Patent Nos. 2014236780 and 2017200691; Canada Patent No. 2,903,844; Russia Patent No. 2625016; and China Patent No. 201480028365.3. Our ExVive Human Kidney Tissue is protected by U.S. Patent Nos. 9,481,868 and 10,094,821; and European Patent No. 3204488. We have additional U.S. patent applications pending in these families, as

well as foreign counterpart applications in multiple countries. We currently have pending numerous patent applications in the U.S. and globally that are directed to additional tissue types, their methods of fabrication, and specific applications.

Additionally, in 2013, we purchased the exclusive rights to “Perfusion Bioreactors for Culturing Cells” (U.S. Patent No. 7,767,446, Japan Patent No. 4,914,835, and Australia Patent No. 2,005,287,162) from Becton Dickinson and Company. This patent represents the acquisition of bioreactor technology for the support of our 3D tissues for use in drug discovery and development.

**Competition**

We will continue to be subject to significant competition from pharmaceutical and biotechnology companies; academic and research institutions; and government or other publicly-funded agencies that are pursuing the development of drug candidates for the disease indications we elect to pursue. Drug discovery technologies have undergone and are expected to continue to undergo rapid and significant change. We may not be able to make the necessary enhancements to our technologies to compete successfully with newly emerging technologies. Further, any drug candidates that we successfully develop will compete with currently approved therapies and new therapies that may become available in the future. The New Director Slate believes that the key competitive factors affecting the success of any of our drug candidates will include efficacy, combinability, safety profile, convenience, cost, level of promotional activity devoted to them and intellectual property protection.

**Employees**

If the Advisory Nominees Proposal is approved, the New Director Slate intends to restart the Company’s research operations by hiring a team of R&D professionals with the experience required to develop bioprinted and other 3D tissues for use in drug discovery, to leverage 3D models of disease to discover new drug candidates, and to develop new drug candidates for the initiation of clinical studies. They have advised us that the focus of the Company’s R&D hiring will be building teams of professionals with expertise in tissue culture and bioprinting, who can build the required disease models for our research. They have also advised us that a second area of focus will be research scientists and associates with sufficient expertise to use 3D disease models to discover and validate novel targets, discover and develop novel chemical compounds or evaluate repurposed drugs, and with disease-specific knowledge to enable us to select and advance the best opportunities. The New Director Slate also intends to leverage significant contract research from outside groups and expert consultants to achieve the Company’s research goals in a cost-effective manner.

The New Director Slate has advised us that they expect our research and development staff to grow to seven to ten employees. They also expect to maintain or grow a general and administrative staff of three to five employees to support the Company’s operations and reporting requirements as a public company.

**Facilities**

If the Advisory Nominees Proposal is approved, the New Director Slate has advised us that the Company expects to lease sufficient office and laboratory space to support its requirements. They expect that the Company will need space in the short term in the 3,000-7,000 sq. ft. range, with mixed office and laboratory space. They expect to lease a new facility in San Diego at prevailing market terms. They also expect that these facilities would include traditional wet laboratory space as well as tissue culture facilities for the use of living cells and bioprinters. They believe that the San Diego market has ample facilities available for its use.

**Research and Development**

If the Advisory Nominees Proposal is approved, the New Director Slate has advised us that they intend to restart the Company’s research and development efforts. They intend to move forward to develop new drug candidates for unmet needs. First, they intend to build clinically relevant 3D tissue models by creating a diseased tissue from a tissue that the Company has previously bioprinted, or a new tissue of interest where the technology can bring benefit. They then expect to build several models to be as close to native disease biology as current technology allows, and then determine which of the models adds value compared to other drug discovery technologies in a given disease area. They then plan to select one or more areas to use to initiate programs of drug discovery. In the next stage, they plan to build additional 3D models to use across the discovery platform, as necessary for a given disease or therapeutic area. Then, by integrating cutting edge analytical methods to get the most out of 3D tissues, the New Director Slate believes the Company can identify novel biology and targets, or other new opportunities to impact disease. Finally, the New Director Slate plans to implement innovative drug discovery, screening, and optimization utilizing the above platform to select one or more drug candidates. Using the Company’s platforms and traditional drug development methods, they then plan to have the Company move forward drug candidates to ready them for IND submissions and clinical studies.

**Government Regulation**

Government authorities in the United States at the federal, state and local level and in other countries regulate, among other things, the research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, post-approval monitoring and reporting, marketing and export and import of drug products. Generally, before a new drug can be marketed, considerable data demonstrating its quality, safety and efficacy must be obtained, organized into a format specific for each regulatory authority, submitted for review and approved by the regulatory authority.

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act ("FDCA") and its implementing regulations. FDA approval is required before any new unapproved drug or dosage form, including a new use of a previously approved drug, can be marketed in the United States. Drugs also are subject to other federal, state and local statutes and regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or post-marketing may subject an applicant to administrative or judicial sanctions. These sanctions could include, among other actions, the FDA's refusal to approve pending applications, withdrawal of an approval, a clinical hold, untitled or warning letters, voluntary or mandatory product recalls or market withdrawals, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement and civil or criminal fines or penalties. Any agency or judicial enforcement action could have a material adverse effect on our business, market acceptance of our products, and our reputation.

Any drug candidates we develop must be approved by the FDA through the NDA process before they may be legally marketed in the United States. The process generally involves the following:

- completion of extensive preclinical studies in accordance with applicable regulations, including studies conducted in accordance with good laboratory practice ("GLP") requirements;
- submission to the FDA of an IND, which must become effective before human clinical trials may begin and must be updated annually or when significant changes are made;
- approval by an independent institutional review board ("IRB") or independent ethics committee at each clinical trial site before each trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with applicable IND regulations, good clinical practice ("GCP") requirements and other clinical trial-related regulations to establish substantial evidence of the safety and efficacy of the investigational product for each proposed indication;
- submission to the FDA of an NDA;
- a determination by the FDA within 60 days of its receipt of an NDA to accept the filing for review;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities where the drug will be produced to assess compliance with current good manufacturing practice ("cGMP") requirements, and of selected clinical investigational sites to assess compliance with GCD;
- potential FDA audit of the preclinical study and/or clinical trial sites that generated the data in support of the NDA filing;
- payment of user fees for FDA review of the NDA;
- FDA review and approval of the NDA, including consideration of the views of any FDA advisory committee, prior to any commercial marketing or sale of the drug in the United States; and
- compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy ("REMS"), and the potential requirement to conduct post-approval studies.

The data required to support an NDA are generated in two distinct developmental stages: preclinical and clinical. The preclinical and clinical testing and approval process can take many years and the actual time required to obtain approval, if any, may vary substantially based upon the type, complexity and novelty of the product or condition being treated.

***Preclinical Studies and IND Submission***

Before testing any drug candidate in humans, the drug candidate must undergo rigorous preclinical testing. The preclinical developmental stage generally involves laboratory evaluations of drug chemistry, formulation and stability, as well as in vitro and animal studies to assess the potential for adverse events and in some cases to establish a rationale for therapeutic use. The conduct of preclinical studies is subject to federal regulations and requirements, including GLP regulations for safety/toxicology studies. An IND is a request for authorization from the FDA to administer an investigational product to humans, and must become effective before human clinical trials may begin.

An IND sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and plans for clinical studies, among other things, to the FDA as part of an IND. Some long-term preclinical testing, such as animal tests of reproductive adverse events and carcinogenicity, may continue after the IND is submitted. An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to one or more proposed clinical trials and places the trial on clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to commence. A separate submission to an existing IND must also be made for each successive clinical trial conducted during product development along with any subsequent changes to the investigational plan.

***Clinical Trials***

The clinical stage of development involves the administration of the investigational product to healthy volunteers or patients under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control, in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria and the parameters to be used to monitor subject safety and assess efficacy. Each protocol, and any subsequent amendments to the protocol, must be submitted to the FDA as part of the IND. Furthermore, each clinical trial must be reviewed and approved by an IRB for each institution at which the clinical trial will be conducted to ensure that the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the informed consent form that must be provided to each clinical trial subject or his or her legal representative, and must monitor the clinical trial until completed. There also are requirements governing the reporting of ongoing clinical trials and completed clinical trial results to public registries, including the website maintained by the U.S. National Institutes of Health, ClinicalTrials.gov.

A sponsor who wishes to conduct a clinical trial outside of the United States may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. If a foreign clinical trial is not conducted under an IND, the sponsor may submit data from the clinical trial to the FDA in support of an NDA. The FDA will accept a well-designed and well-conducted foreign clinical trial not conducted under an IND if the trial was conducted in accordance with GCP requirements and the FDA is able to validate the data through an onsite inspection, if deemed necessary, and the practice of medicine in the foreign country is consistent with the United States.

Clinical trials in the United States generally are conducted in three sequential phases, known as Phase 1, Phase 2 and Phase 3. Although the phases are usually conducted sequentially, they may overlap or be combined.

- Phase 1 clinical trials generally involve a small number of healthy volunteers or disease-affected patients who are initially exposed to a single dose and then multiple doses of the drug candidate. The primary purpose of these clinical trials is to assess the metabolism, pharmacologic action, tolerability and safety of the drug in humans, the side effects associated with increasing doses, and if possible, to gain early evidence on effectiveness.

- Phase 2 clinical trials generally involve studies in disease-affected patients to determine the dose and dosing schedule required to produce the desired benefits. At the same time, safety and further pharmacokinetic and pharmacodynamic information is collected, possible adverse effects and safety risks are identified and a preliminary evaluation of efficacy is conducted.

- Phase 3 clinical trials generally involve a large number of patients at multiple sites and are designed to provide the data necessary to demonstrate the safety and effectiveness of the product for its intended use and to establish the overall benefit/risk relationship of the product to provide an adequate basis for product approval. These trials may include comparisons with placebo and/or other comparator treatments. The duration of treatment is often extended to mimic the actual use of a product during marketing.

Post-approval trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. These trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication. In certain instances, the FDA may mandate the performance of Phase 4 clinical trials as a condition of approval of an NDA.

Progress reports detailing the results of the clinical trials, among other information, must be submitted at least annually to the FDA and written IND safety reports must be submitted to the FDA and the investigators for serious and unexpected suspected adverse events, findings from other studies suggesting a significant risk to humans exposed to the drug, findings from animal or in vitro testing that suggest a significant risk for human subjects and any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol.

Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, if at all. The FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients. Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board or committee. This group provides authorization for whether a trial may move forward at designated check-points based on access to certain data from the trial. Concurrent with clinical trials, companies usually complete additional animal safety studies and also must develop additional information about the chemistry and physical characteristics of the drug as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of our drug candidates. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that our drug candidates do not undergo unacceptable deterioration over their labeled shelf life.

**NDA Review**

Following completion of clinical trials, data are analyzed to assess whether the investigational product is safe and effective for the proposed indicated use or uses. The results of preclinical studies and clinical trials are then submitted to the FDA as part of an NDA, along with proposed labeling, chemistry and manufacturing information in a request for approval to market the drug for one or more specified indications. The application must include both negative and ambiguous results of preclinical studies and clinical trials, as well as positive findings. Data may come from company-sponsored clinical trials intended to test the safety and efficacy of a product's use or from a number of alternative sources, including studies initiated by investigators. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety and efficacy of the investigational product to the satisfaction of FDA. FDA approval of an NDA must be obtained before a drug may be marketed in the United States.

Under the Prescription Drug User Fee Act (PDUFA), as amended, each NDA must be accompanied by an application user fee. FDA adjusts the PDUFA user fees on an annual basis. PDUFA also imposes an annual program fee for each marketed human drug. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a qualifying small business. Additionally, no user fees are assessed on NDAs for products designated as orphan drugs, unless the product also includes a non-orphan indication.

The FDA reviews all submitted NDAs before it accepts them for filing to determine if they are sufficiently complete to permit a substantive review, and the FDA may request additional information rather than accepting the NDA for filing. The FDA must make a decision on accepting an NDA for filing within 60 days of receipt. Once the submission is accepted for filing, the FDA begins an in-depth review of the NDA. Under PDUFA, the FDA has agreed to certain performance goals in the review of NDAs through a two-tiered classification system, standard review and priority review. According to PDUFA performance goals, the FDA endeavors to review applications subject to standard review within ten to twelve months, whereas the FDA's goal is to review priority review applications within six to eight months, depending on whether the drug is a new molecular entity. The FDA does not always meet its PDUFA goal dates for standard and priority NDAs, and the review process is often extended by FDA requests for additional information or clarification.

Before approving an NDA, the FDA will conduct a pre-approval inspection of the manufacturing facilities for the new product to determine whether they comply with cGMP requirements. The FDA will not approve the product unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. The FDA also may audit data from clinical trials to ensure compliance with GCP requirements. Additionally, the FDA may refer applications for novel drug products or drug products which present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved and under what conditions, if any. The FDA is not bound by

recommendations of an advisory committee, but it considers such recommendations when making decisions on approval. The FDA also closely analyzes the clinical trial data, which could result in extensive discussions between the FDA and the applicant during the review process. After the FDA evaluates an NDA, it will issue an approval letter or a Complete Response Letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. A Complete Response Letter indicates that the review cycle of the application is complete and the application will not be approved in its present form. A Complete Response Letter usually describes all of the specific deficiencies in the NDA identified by the FDA. The Complete Response Letter may require additional clinical data, including the potential requirement to conduct additional pivotal Phase 3 clinical trial(s) and/or other significant and time-consuming requirements related to clinical trials, or to conduct additional preclinical studies or manufacturing changes. If a Complete Response Letter is issued, the applicant may either resubmit the NDA, addressing all of the deficiencies identified in the letter, or withdraw the application. Even if such data and information are submitted, the FDA may decide that the NDA does not satisfy the criteria for approval. Data obtained from clinical trials are not always conclusive and the FDA may interpret data differently than we interpret the same data.

**Risk Factors**

*The proposed business plan and operations assuming the Advisory Nominees Proposal is approved at the Annual Meeting involves a substantial degree of risk and should be regarded as speculative. As a result, the purchase of our common stock should be considered only by persons who can reasonably afford to lose their entire investment. Before you elect to purchase our common stock, you should carefully consider the risk and uncertainties described below and those risk and uncertainties set forth in our Form 10-K for the fiscal year ended March 31, 2020, filed with the SEC on May 28, 2020. Additional risks and uncertainties of which we are unaware or which we currently believe are immaterial could also materially adversely affect our business, financial condition or results of operations. If any of the risks or uncertainties discussed below or in our Annual Report occur, our business, prospects, liquidity, financial condition and results of operations could be materially and adversely affected, in which case the trading price of our common stock could decline, and you could lose all or part of your investment.*

**Risks Related to COVID-19**

***We face risks related to health epidemics, including the recent COVID-19 pandemic, which could have a material adverse effect on our business and results of operations.***

In December 2019 a respiratory illness caused by a novel strain of coronavirus, SARS-CoV-2, causing the Coronavirus Disease 2019, also known as COVID-19 or coronavirus emerged. Global health concerns relating to the COVID-19 pandemic have been weighing on the macroeconomic environment, and the pandemic has significantly increased economic volatility and uncertainty. The pandemic has resulted in government authorities implementing numerous measures to try to contain the virus, such as travel bans and restrictions, quarantines, shelter-in-place or stay-at-home orders, and business shutdowns. The extent to which the coronavirus impacts our operations will depend on future developments, which are highly uncertain and cannot be predicted with confidence, including the duration of the outbreak and travel bans and restrictions, quarantines, shelter-in-place or stay-at-home orders, and business shutdowns. The continued COVID-19 pandemic could adversely impact our operations, including among others, the timing and ability to pursue strategic alternatives, given the impact it may have on the manufacturing and supply chain, sales and marketing and clinical trial operations of potential strategic partners, and the ability, if we elect to do so, to advance our research and development activities and pursue development of any of our pipeline products, each of which could have an adverse impact on our business and our financial results.

In addition, the stock market has been unusually volatile during the COVID-19 pandemic and such volatility may continue. Our stock price has also experienced volatility during this time, including occasional significant increases and decreases, and such increases and decreases may repeat or continue for the foreseeable future.

There are no comparable recent events which may provide guidance as to the effect of the COVID-19 pandemic, and, as a result, the ultimate impact of the pandemic, or any similar health epidemic that may occur in the future, is highly uncertain and subject to change. We do not yet know the full extent of COVID-19's impact on our business, our operations, or the global economy as a whole. However, the effects may have a material adverse impact on our future results of operations.

**Risks Related to the Proposed Go Forward Business**

***If the Advisory Nominees Proposal is approved at the 2020 Annual Meeting, the New Director Slate has advised us that it intends for the Company to recommence operations and focus our efforts on utilizing our 3D bioprinting technology to develop human tissues and disease models for drug discovery and development. In this case, the Company will be recommencing its operations as an early-stage company with an unproven business strategy, and may never achieve profitability.***

If the Advisory Nominees Proposal is approved at the Annual Meeting, the New Director Slate has advised us that it intends for the Company to recommence operations and focus its efforts on utilizing its 3D bioprinting technology to develop human tissues and disease models for drug discovery and development. In this case, the Company will be recommencing its operations as an early-stage company with an unproven business strategy, and may never achieve profitability. Our success will depend upon the viability of our platform technology and any disease models we develop, as well as on our ability to determine which drug candidates we should pursue. Our success will also depend on our ability to select an appropriate development strategy for any drug candidates we identify, including internal development or partnering or licensing arrangements with pharmaceutical companies. We may never achieve profitability, or even if we achieve profitability, we may not be able to maintain or increase our profitability.

***The New Director Slate has advised us that they expect that the Company will incur substantial additional operating losses over the next several years as our research and development activities increase.***

The New Director Slate has advised us that they expect that the Company will incur substantial additional operating losses over the next several years as our research and development activities increase. The amount of future losses and when, if ever, we will achieve profitability are uncertain. Our ability to generate revenue and achieve profitability will depend on, among other things:

- successfully developing human tissues and disease models for drug discovery and development that that enable us to identify drug candidates;
- successfully outsource certain portions of our development efforts;
- entering into partnering or licensing arrangements with pharmaceutical companies to further develop and conduct clinical trials for any drug candidates we identify;
- obtaining any necessary regulatory approval for any drug candidates we identify; and
- raising sufficient funds to finance our activities and long-term business plan.

We might not succeed at any of these undertakings. If we are unsuccessful at one or more of these undertakings, our business, prospects, and results of operations will be materially adversely affected.

***Using our platform technology to develop human tissues and disease models for drug discovery and development is new and unproven.***

Utilizing our 3D bioprinting platform technology to develop human tissues and disease models for drug discovery and development will involve new and unproven technologies, disease models and approaches, each of which is subject to the risk associated with new and evolving technologies. To date, we have not identified or developed any drug candidates utilizing the business model recommended by the New Director Slate. Our future success will depend on our ability to utilize our 3D bioprinting platform to develop human tissues and disease models that will enable us to identify and develop viable drug candidates. We may experience unforeseen technical complications, unrecognized defects and limitations in our technology or our ability to develop disease models or identify viable drug candidates. These complications could materially delay or substantially increase the anticipated costs and time to identify and develop viable drug candidates, which would have a material adverse effect on our business and financial condition and our ability to continue operations.

***We will face intense competition in our drug discovery efforts.***

The biotechnology industry is subject to intense competition and rapid and significant technological change. There are many potential competitors for the disease indications we may pursue, including major drug companies, specialized biotechnology firms, academic institutions, government agencies and private and public research institutions. Many of these competitors have significantly greater financial and technical resources, experience and expertise in the following areas than we have, including:

- research and technology development;
- development of or access to disease models;
- identification and development of drug candidates;
- regulatory processes and approvals; and

- identifying and entering into agreements with potential collaborators.

Principal competitive factors in our industry include: the quality, scientific and technical support, management and the execution of drug development and regulatory approval strategies; skill and experience of employees, including the ability to recruit and retain skilled, experienced employees; intellectual property portfolio; range of capabilities, including drug identification, development and regulatory approval; and the availability of substantial capital resources to fund these activities.

In order to effectively compete, we may need to make substantial investments in our research and technology development, drug candidate identification and development, testing and regulatory approval and licensing and business development activities. There is no assurance that we will be successful in discovering effective drug candidates using our 3D bioprinted tissues or disease models. Our technologies and drug development plans also may be rendered obsolete or noncompetitive as a result of technologies, products and services introduced by competitors. Any of these risks may prevent us from building a successful drug discovery business or entering into a strategic partnership or collaboration related to, any drug candidates we identify on favorable terms, or at all.

***If we pursue drug development through 3D bioprinted tissues and disease models, we will require access to a constant, steady, reliable supply of human cells to support our development activities.***

If we pursue drug development through 3D bioprinted tissues and disease models, we will require access to a constant, steady, reliable supply of human cells to support our development activities. We typically purchased certain qualified human cells from selected third-party suppliers based on quality assurance, cost effectiveness, and regulatory requirements. We formed our wholly-owned subsidiary, Samsara, to eventually serve as a key source of the primary human cells we utilized in our business and we recently dissolved Samsara in connection with pursuing the proposed Merger with Tarveda, which was not successful. If we recommence our development operation, we will need to identify one or more sources of qualified human cells and there can be no guarantee that we would be able to access the quantity and quality of raw materials needed at a cost-effective price. In this event, any failure to obtain a reliable supply of sufficient human cells or a supply at cost effective prices would harm our business and our results of operations and could cause us to be unable to obtain a sufficient supply of human cells to support our drug development efforts.

***The business plan proposed by the New Director Slate will be adversely impacted if we are unable to successfully attract, hire and integrate key additional employees or contractors.***

Our future success depends in part on our ability to successfully attract and then retain key additional executive officers and other key employees and contractors to support our proposed drug discovery plans. Recruiting and retaining qualified scientific and clinical personnel is critical to our success. Competition to hire qualified personnel in our industry is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. If we are unable to attract and retain high quality personnel, our ability to pursue our drug discovery business will be limited, and our business, prospects, financial condition and results of operations may be adversely affected.

***The business plan proposed by the New Director Slate will be adversely impacted if we are unable to secure adequate laboratory facilities and equipment.***

In connection with our strategic alternatives process and restructuring beginning in August 2019, we exited our lease agreement for our prior company headquarters (which included laboratory space) and sold most of our lab equipment (with the exception of our bioprinters). In order to proceed with our proposed business plan, we will need to secure adequate lab space and equipment. If we are unable to secure such space and equipment at all, or on commercially reasonable terms, our business opportunity would be adversely impacted.

***We may require substantial additional funding to pursue the business plan proposed by the New Director Slate. Raising additional capital would cause dilution to our existing stockholders and may restrict our operations or require us to relinquish rights to our technologies or to a drug candidate.***

We currently do not have any committed external source of funds and do not expect to generate any meaningful revenue in the foreseeable future. The New Director Slate has advised us that they believe that our existing cash, cash equivalents and marketable securities and interest thereon will be sufficient to fund our projected operating requirements under the proposed business plan for at least 12 months. They have based these estimates on assumptions that may prove to be wrong, and the Company may use its available capital resources sooner than it currently expects if the operating plans change. If the New Director Slate elects to change the proposed business plan and decide that the Company should pursue further research and development activities, the Company will require substantial additional funding to operate its proposed business, including expanding its facilities and hiring additional qualified personnel, and would expect to finance these cash needs through a combination of equity offerings, debt financings, government or other third-party funding and licensing or collaboration arrangements.

To the extent that we raise additional capital through the sale of equity or convertible debt, the ownership interests of our stockholders will be diluted. In addition, the terms of any equity or convertible debt we agree to issue may include liquidation or other preferences that adversely affect the rights of our stockholders.

Further, additional funds may not be available when we need them on terms that are acceptable to us, or at all. If adequate funds are not available to us on a timely basis, we may be required to curtail or cease our operations. Raising additional funding through debt or equity financing is likely to be difficult or unavailable altogether given the early stage of our technology and any drug candidates we identify. Furthermore, the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our common stock to decline further and existing stockholders may not agree with our financing plans or the terms of such financings.

***Clinical drug development involves a lengthy and expensive process with uncertain timelines and uncertain outcomes, and results of earlier studies and trials may not be predictive of future results.***

Before obtaining marketing approval from regulatory authorities for the sale of any drug candidates we identify, any such drug candidates must undergo extensive clinical trials to demonstrate the safety and efficacy of the drug candidates in humans. Human clinical testing is expensive and can take many years to complete, and we cannot be certain that any clinical trials will be conducted as planned or completed on schedule, if at all. The New Director Slate has advised us that they may elect to have the Company complete this testing, or some portion thereof, internally or enter into a partnering or development agreement with a third party to complete these trials. Our inability, or the inability of any third party with whom we enter into a partnering or development agreement, to successfully complete preclinical and clinical development could result in additional costs to us and negatively impact our ability to generate revenues or receive development or milestone payments. Our future success is dependent on our ability, or the ability of any third party with whom we enter into a partnering or development agreement, to successfully develop, obtain regulatory approval for, and then successfully commercialize any drug candidates we identify.

Any drug candidates we identify will require additional clinical development, management of clinical, preclinical and manufacturing activities, regulatory approval in applicable jurisdictions, achieving and maintaining commercial-scale supply, building of a commercial organization, substantial investment and significant marketing efforts. We are not permitted to market or promote any of our drug candidates before we receive regulatory approval from the FDA or comparable foreign regulatory authorities, and we may never receive such regulatory approval for any of our drug candidates.

We, or any third party with whom we enter into a partnering or development agreement, may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to earn development or milestone payments or for any drug candidates to obtain regulatory approval, including:

- we, or any third party with whom we enter into a partnering or development agreement, may experience delays in or failure to reach agreement on acceptable terms with prospective CROs and clinical sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;

- we, or any third party with whom we enter into a partnering or development agreement, may fail to obtain sufficient enrollment in clinical trials or participants may fail to complete clinical trials;

- clinical trials of our drug candidates may produce negative or inconclusive results, and we, or any third party with whom we enter into a partnering or development agreement, may decide, or regulators may require, additional clinical trials;

- we, or any third party with whom we enter into a partnering or development agreement, may decide, or regulators or institutional review boards may require the suspension or termination of clinical research for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks;

- regulators or institutional review boards may require additional or unanticipated clinical trials to obtain approval or any drug candidates may be subject to additional post-marketing testing requirements to maintain regulatory approval;

- regulators may revise the requirements for approving any drug candidates, or such requirements may not be as anticipated;

- the cost of clinical trials for any drug candidates may be greater than anticipated;

- the supply or quality of any drug candidates or other materials necessary to conduct clinical trials of our drug candidates may be insufficient or inadequate or may be delayed;

- regulatory authorities may suspend or withdraw their approval of a product or impose restrictions on its distribution; and

- we may experience delays due to the recent COVID-19 pandemic, including with respect to the receipt of drug candidates or other materials, submission of NDAs, filing of INDs and starting any clinical trials for other indications or programs.

If we, or any third party with whom we enter into a partnering or development agreement, experience delays in the completion of, or termination of, any clinical trial of any drug candidates that we develop, or are unable to achieve clinical endpoints due to unforeseen events, such as the COVID-19 pandemic, the commercial prospects of our drug candidates will be harmed, and our ability to develop milestones, development fees or product revenues from any of these drug candidates will be delayed.

***The New Director Slate has advised us that they expect that the Company will rely upon third-party contractors and service providers for the execution of critical aspects of any future development programs. Failure of these collaborators to provide services of a suitable quality and within acceptable timeframes may cause the delay or failure of any future development programs.***

The New Director Slate has advised us that they expect that the Company will outsource certain functions, tests and services to contract research organizations ("CROs"), medical institutions and collaborators as well as outsourcing manufacturing to collaborators and/or contract manufacturers, and we rely on third parties for quality assurance, clinical monitoring, clinical data management and regulatory expertise. They may elect in the future to engage a CRO to run all aspects of a clinical trial on our behalf. There is no assurance that such individuals or organizations will be able to provide the functions, tests, biologic supply or services as agreed upon or in a quality fashion and we could suffer significant delays in the development of our drug candidates or development programs.

In some cases, there may be only one or few providers of such services, including clinical data management or manufacturing services. In addition, the cost of such services could be significantly increased over time. We may rely on third parties and collaborators to enroll qualified patients and conduct, supervise and monitor our clinical trials. Our reliance on these third parties and collaborators for clinical development activities reduces our control over these activities. Our reliance on these parties, however, does not relieve us of our regulatory responsibilities, including ensuring that our clinical trials are conducted in accordance with GCP regulations and the investigational plan and protocols contained in the regulatory agency applications. In addition, these third parties may not complete activities on schedule or may not manufacture under cGMP conditions. Preclinical or clinical studies may not be performed or completed in accordance with GLP regulatory requirements or our trial design. If these third parties or collaborators do not successfully carry out their contractual duties or meet expected deadlines, obtaining regulatory approval for manufacturing and commercialization of our drug candidates may be delayed or prevented. We may rely substantially on third-party data managers for our clinical trial data. There is no assurance that these third parties will not make errors in the design, management or retention of our data or data systems. There is no assurance these third parties will pass FDA or regulatory audits, which could delay or prohibit regulatory approval.

In addition, we will exercise limited control over our third-party partners and vendors, which makes us vulnerable to any errors, interruptions or delays in their operations. If these third parties experience any service disruptions, financial distress or other business disruption, or difficulties meeting our requirements or standards, it could make it difficult for us to operate some aspects of our business.

***The near and long-term viability of the drug discovery and development efforts proposed by the New Director Slate will depend on the Company's ability to successfully establish strategic relationships.***

The near and long-term viability of the drug discovery and development efforts proposed by the New Director Slate will depend in part on the Company's ability to successfully establish new strategic partnering, collaboration and licensing arrangements with biotechnology companies, pharmaceutical companies, universities, hospitals, insurance companies and or government agencies. Establishing strategic relationships is difficult and time-consuming. Potential partners and collaborators may not enter into relationships with us based upon their assessment of our technology or drug candidates or our financial, regulatory or intellectual property position. If we fail to establish a sufficient number of strategic relationships on acceptable terms, we may not be able to develop and obtain regulatory approval for our drug candidates or generate sufficient revenue to fund further research and development efforts. Even if we establish new strategic relationships, these relationships may never result in the successful development or regulatory approval for any drug candidates we identify for a number of reasons both within and outside of our control.

**Risks Related to the Reverse Stock Split**

***The Reverse Stock Split that we intend to effect may not increase our stock price over the long-term.***

In March 2020, at the Special Meeting, our stockholders approved an amendment to the Company's certificate of incorporation effecting a reverse stock split of our common stock, at a ratio of one (1) new share for every 20 to 40 shares of outstanding common stock, with the

final ratio to be approved by our Board (the "Reverse Stock Split"). The principal purpose of the Reverse Stock Split is to increase the per share market price of our common stock. It cannot be assured, however, that the Reverse Stock Split will accomplish the objective of increasing the per share market price of our common stock for any meaningful period of time. While it is expected that the reduction in the number of outstanding shares of our common stock will proportionally increase the market price of our common stock, it cannot be assured that the Reverse Stock Split will increase the market price of our common stock by a multiple of the Reverse Stock Split Ratio, as determined by our Board of Directors, or result in any permanent or sustained increase in the market price of our common stock, which is dependent upon many factors, including our business and financial performance, general market conditions and prospects for future success. Therefore, while the price of our common stock might meet the continued listing requirements for the Nasdaq Capital Market initially, it cannot be assured that it will continue to do so.

***The Reverse Stock Split may decrease the liquidity of our common stock.***

Although our Board of Directors believes that the anticipated increase in the market price of our common stock could encourage interest in our common stock and possibly promote greater liquidity for our stockholders, such liquidity could also be adversely affected by the reduced number of shares outstanding after the Reverse Stock Split. The reduction in the number of outstanding shares may lead to reduced trading and a smaller number of market makers for our common stock.

***The Reverse Stock Split may lead to a decrease in our overall market capitalization.***

Should the market price of our common stock decline after the Reverse Stock Split, the percentage decline may be greater, due to the smaller number of shares outstanding, than it would have been prior to the Reverse Stock Split. A reverse stock split may be viewed negatively by the market and, consequently, can lead to a decrease in our market capitalization. If the per share market price does not increase in proportion to the Reverse Stock Split ratio, then the value of our Company, as measured by its stock capitalization, will be reduced. In some cases, the per share stock price of companies that have effected reverse stock splits subsequently declined back to pre-reverse split levels, and accordingly, it cannot be assured that the total market value of our common stock will remain the same after the Reverse Stock Split is effected, or that the Reverse Stock Split will not have an adverse effect on the stock price of our common stock due to the reduced number of shares outstanding after the Reverse Stock Split.

## PROPOSAL 3: RATIFICATION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

At the Annual Meeting, our stockholders will be asked to ratify the appointment of Mayer Hoffman McCann, P.C. ("Mayer Hoffman") as our independent registered public accounting firm for the fiscal year ending March 31, 2021. Representatives of Mayer Hoffman are expected to be present at the virtual Annual Meeting and will have the opportunity to make statements if they desire to do so and to respond to appropriate questions. Mayer Hoffman has served as our independent registered public accounting firm since February 8, 2012, the date we completed our reverse merger transaction and became a public reporting company.

In the event our stockholders fail to ratify the appointment of Mayer Hoffman, the Audit Committee will reconsider its selection. In addition, even if our stockholders ratify the selection, the Audit Committee in its discretion may direct the appointment of a different independent registered public accounting firm at any time during the year if it believes that a change would be in the best interests of the Company and its stockholders.

### *Audit and Non-Audit Fees*

Our Audit Committee is responsible for, and has approved, the engagement of Mayer Hoffman as our independent registered public accounting firm for the fiscal year ending March 31, 2021. Mayer Hoffman has advised us that it leases substantially all of its personnel, who work under the control of Mayer Hoffman's shareholders, from wholly-owned subsidiaries of CBIZ, Inc., including CBIZ MHM, LLC, in an alternative practice structure. Accordingly, substantially all of the hours expended on Mayer Hoffman's engagement to audit the Company's financial statements for Fiscal 2020 and Fiscal 2019, were attributed to work performed by persons other than Mayer Hoffman's full-time, permanent employees.

The Audit Committee has and intends to continue to meet with Mayer Hoffman on a quarterly or more frequent basis. At such times, the Audit Committee has and will continue to review the services performed by Mayer Hoffman, as well as the fees charged for such services.

The following table sets forth the fees for services provided and billed by Mayer Hoffman and its affiliate CBIZ MHM, LLC, relating to Fiscal 2020 and Fiscal 2019.

| | Fiscal Year 2020 | Fiscal Year 2019 |
|---|---|---|
| Audit fees | $ 346,955 | $ 345,000 |
| Audit-related fees | — | — |
| Tax Fees | $ 40,000 | $ 28,000 |
| All other fees | — | — |
| Total | $ 386,955 | $ 373,000 |

*Audit Fees*: For the fiscal years ended March 31, 2020 and 2019, the aggregate audit fees billed by our independent auditors were for professional services rendered for audits and quarterly reviews of our consolidated financial statements, and assistance with reviews of registration statements and documents filed with the SEC.

*Audit-Related Fees*: For the fiscal years ended March 31, 2020 and 2019, there were no audit-related fees billed by our independent auditors, other than the fees described above.

*Tax Fees*: For the fiscal years ended March 31, 2020 and 2019, the tax-related fees billed by an affiliate of our independent auditors pertained to services related to tax return preparation and tax planning services.

*All Other Fees*: For the fiscal years ended March 31, 2020 and 2019, there were no fees billed by our independent auditors for other services, other than the fees described above.

### *Policy on Audit Committee Pre-Approval of Audit and Permitted Non-Audit Services of Independent Auditors*

The Audit Committee has determined that all services provided by Mayer Hoffman to date are compatible with maintaining the independence of such audit firm. The charter of the Audit Committee requires advance approval of all auditing services and permitted non-audit services (including the fees and terms thereof) to be performed for the Company by our independent registered public accounting firm, subject to any exception permitted by law or regulation. The Audit Committee has delegated to the Chair of the Audit Committee authority to approve permitted services, provided that the Chair reports any decisions to the Audit Committee at its next scheduled meeting.

***Vote Required***

If a quorum is present, the affirmative vote of a majority of the votes cast at the 2020 Annual Meeting is required for ratification of our independent registered public accounting firm. Abstentions will be counted as present for purposes of determining the presence of a quorum but will not be considered as votes cast for or against the proposal and will therefore have no effect on the outcome of the vote.

Although ratification is not required by our Bylaws or otherwise, the Board is submitting this proposal as a matter of good corporate governance. If stockholders do not ratify the appointment of Mayer Hoffman, the Audit Committee and the Board would consider what, if any, action to take. Even if the appointment is ratified, the Audit Committee, in its discretion, may direct the appointment of a different independent audit firm at any time during the fiscal year if it is determined that such a change would be in the best interests of Organovo and its stockholders.

***Board Recommendation***

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE RATIFICATION OF MAYER HOFFMAN MCCANN P.C. AS THE COMPANY'S INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING MARCH 31, 2021.**

## PROPOSAL 4: ADVISORY VOTE TO APPROVE COMPENSATION OF NAMED EXECUTIVE OFFICERS

The Board of Directors is providing stockholders with the opportunity to cast an advisory vote on the compensation of our named executive officers. This proposal, commonly known as a "Say-on-Pay" proposal, gives you, as a stockholder, the opportunity to endorse or not endorse our executive compensation program and the compensation paid to our named executive officers as reported in this Proxy Statement.

The Say-on-Pay vote is advisory, and therefore not binding on the Compensation Committee or the Board. Although the vote is non-binding, the Compensation Committee and the Board will review the voting results, seek to determine the cause or causes of any significant negative voting, and take them into consideration when making future decisions regarding executive compensation.

The Compensation Committee and the Board have designed our executive compensation program to attract and retain talented executives, to motivate them to achieve our key financial, operational, and strategic goals, and to reward them for superior performance. They also designed our compensation program to align our executive officers' interests with those of our stockholders by rewarding their achievement of the specific corporate and individual goals approved by our Compensation Committee. The performance goals set by the Compensation Committee are focused on achieving our commercialization objectives, increasing long-term stockholder value, and advancing our product development and technology platform. Stockholders are encouraged to read the Compensation Discussion and Analysis and Executive Compensation sections of this Proxy Statement for a more detailed discussion of how our compensation program reflects the Company's core objectives and aligns our executive officers' interests with those of our stockholders.

***Vote Required***

The Board believes the Company's executive compensation program uses appropriate structures and sound pay practices that are effective in achieving our core compensation objectives. Accordingly, the Board recommends that you vote in favor of the following resolution:

"RESOLVED, that the stockholders of Organovo Holdings, Inc. approve, on an advisory basis, the compensation of the Company's named executive officers as disclosed in the Company's 2020 Proxy Statement pursuant to the Securities and Exchange Commission's compensation disclosure rules, including the Compensation Discussion and Analysis and Executive Compensation sections."

If a quorum is present, the proposal to approve, on an advisory basis, the compensation of the Company's named executive officers requires the affirmative vote of a majority of the votes cast at the 2020 Annual Meeting. Abstentions and broker non-votes will each be counted as present for purposes of determining the presence of a quorum. Abstentions and broker non-votes will not be considered as votes cast for or against the proposal and will therefore have no effect on the outcome of the vote.

***Board Recommendation***

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE APPROVAL, ON AN ADVISORY BASIS, OF THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS.**

## BOARD OF DIRECTORS INFORMATION

Presently, our Board of Directors is comprised of six directors. Our Board is divided into three classes, with one class standing for election each year for a three-year term. There are currently two Class I directors, two Class II directors, and two Class III directors. Our Class III directors, whose term will expire at our 2020 Annual Meeting, are Keith E. Murphy and Adam Stern.

The Board, pursuant to the terms of the Cooperation Agreement, has nominated Keith E. Murphy and Adam Stern for election at the 2020 Annual Meeting as Class III directors, each for a three-year term expiring at the 2023 Annual Meeting of Stockholders. Directors are elected by a plurality of the votes cast at the Annual Meeting. Because this is an uncontested election of directors, Messrs. Murphy and Stern will each be elected to the Board under the plurality voting standard if they receive any vote "FOR" their election.

Notwithstanding the plurality voting standard, Messrs. Murphy and Stern have each submitted written irrevocable, conditional resignations from the Board that will be automatically effective if they receive more "WITHHOLD" votes than votes cast "FOR" their election at the Annual Meeting

In addition, pursuant to the terms of the Cooperation Agreement, if the Advisory Nominees Proposal is approved, then immediately following the 2020 Annual Meeting, our Board will appoint the Advisory Nominees to our Board and each of our existing directors (other than Messrs. Murphy and Stern) will resign from our Board. As a result, our Class I director, whose term will expire at our 2021 Annual Meeting, will be Alison Tjosvold Milhous. Our Class II directors, whose terms will expire at our 2022 Annual Meeting, will be Douglas Jay Cohen and David Gobel.

In the event that the Advisory Nominees Proposal is not approved, then, pursuant to the terms of the Cooperation Agreement, immediately following the Annual Meeting our Class I directors, whose terms will expire at our 2021 Annual Meeting, will be our Chairman, Kirk Malloy, Ph.D. and Carolyn Beaver. Our Class II directors, whose terms will expire at our 2022 Annual Meeting, will be Mark Kessel and our Chief Executive Officer and President, Taylor Crouch.

See "Cooperation Agreement" in this Proxy Statement for additional information on the Cooperation Agreement.

In addition to the information set forth below regarding our directors and our director candidates and the skills that led our Board to conclude that these individuals should serve as directors, we also believe that all of our directors and director nominees have a reputation for integrity, honesty and adherence to the highest ethical standards. We believe they each have demonstrated business acumen and an ability to exercise sound judgment, as well as a commitment of service to our Company and to their Board duties.

### Information About Our Directors

The following sets forth information regarding the business experience of our director nominees and our current directors:

| Name | Age | Position |
|---|---|---|
| Taylor Crouch | 60 | Director, Chief Executive Officer and President |
| Mark Kessel | 79 | Director |
| Kirk Malloy, Ph.D. | 53 | Independent Chairman |
| Keith Murphy | 48 | Director |
| Adam Stern | 56 | Director |
| Carolyn Beaver | 62 | Director |

***Nominees as Class III Directors Continuing in Office until the 2023 Annual Meeting of Stockholders***

**Keith Murphy, Director**, re-joined our Board in July 2020. Mr. Murphy is the Chief Executive Officer and Chairman of Viscient Biosciences, Inc., a private company that he founded in 2017 that is focused on drug discovery and development utilizing 3D tissue technology and multi-omics (genomics, transcriptomics, metabolomics). Mr. Murphy previously served as the President and Chief Executive Officer of Organovo from February 2012 through April 2017, and as Chairman from February 2012 through August 2017. Mr. Murphy also previously served as President, Chief Executive Officer, and Chairman of Organovo, Inc., Organovo's primary operating company prior to its going-public transaction, from August 2007 to February 2012. Prior to founding Organovo, Mr. Murphy served in various roles at Amgen, Inc. from August 1997 to July 2007 including as Global Operations Leader for the osteoporosis/bone cancer drug Prolia/Xgeva (denosumab). Prior to joining Amgen, Mr. Murphy served at Alkermes, Inc., a biotechnology company, from July 1993 to July 1997, where he played a role on the development team for their first approved product, Nutropin (hGH) Depot. He holds a BS in Chemical Engineering from MIT and is an alumnus of the UCLA Anderson School of Management.

Mr. Murphy's previous experience in the biotechnology field, especially in developing novel products, his experience and expertise with our 3D bioprinting technology and product development opportunities and strategy, and his educational experience qualify him to be a member of our Board of Directors.

**Adam Stern, Director**, re-joined our Board in July 2020. Mr. Stern is currently the Chief Executive Officer of SternAegis Ventures and has been the Head of Private Equity Banking at Aegis Capital Corp since 2012. Prior to SternAegis, from 1997 to 2012, he was Senior Managing Director at Spencer Trask Ventures, Inc., where he managed the structured finance group focusing primarily on technology and life science companies. From 1989 to 1997, Mr. Stern was at Josephthal & Co., Inc., Members of the New York Stock Exchange, where he served as Head of Private Equity and Managing Director. He has been a FINRA licensed securities broker since 1987 and a Registered General Securities Principal since 1991. Mr. Stern previously served as a director of Organovo from February 2012 to June 2013. Mr. Stern has been a founding investor in numerous private and public companies and currently serves as a director of DarioHealth Corp. (Nasdaq: DRIO), Matinas BioPharma Holdings, Inc. (NYSE: MTNB), Aerami Therapeutics, Inc. and HydroFarm Holdings, Inc. Mr. Stern graduated with a Bachelor of Arts degree from The University of South Florida in 1987.

Mr. Stern's extensive experience in corporate finance, his expertise in the life sciences industries and his previous experience as a member of our Board qualify him to be a member of our Board of Directors.

***Class I Directors Continuing in Office Until the 2021 Annual Meeting of Stockholders in the Event that Proposal 2 is Not Approved***

**Kirk Malloy, Ph.D., Chairman**, joined our board in December 2014, and has served as our Lead Independent Director or Chairman since August 2016. Dr. Malloy has held management and executive leadership positions in rapidly growing life science and diagnostic companies for more than 20 years. Dr. Malloy is currently the Chief Executive Officer and Founder of BioAdvisors, LLC where he provides consulting services for life science companies and their investors. He is also the Executive Chairman of Verogen, Inc., a sequencing company solely dedicated to forensic science. Dr. Malloy serves as an independent director for public and private companies, including NanoString Technologies, Inc., Phoseon Technologies, JumpCode Genomics and IGenomX. Dr. Malloy previously served as the Senior Vice President and General Manager of the Life Sciences and Applied Markets Business of Illumina, Inc., a position he held from January 2014 to April 2016. At that time, the Life Sciences and Applied Markets Business was Illumina's largest business unit, with annual revenues greater than $1 billion. Dr. Malloy joined Illumina in 2002, and served in a number of executive leadership positions, including Vice President, Global Customer Solutions from 2007 to 2013, Vice President, Global Quality from 2005 to 2007 and Senior Director, Global Customer Solutions from 2002 to 2005. Prior to joining Illumina, Dr. Malloy held leadership positions at Biosite, Inc. and commercial management positions at Qiagen, Inc. Before joining the industry, Dr. Malloy spent several years as an academic scientist teaching and conducting research. Dr. Malloy received his B.S. degrees in Biology and Marine Science from the University of Miami, College of Arts & Sciences and his M.S. and Ph.D. degrees in Marine Biology/Biochemistry from the University of Delaware, College of Earth, Ocean and Environment and held post-doctoral positions at Boston University and Northeastern University. He completed a certification for Corporate Directors at UCLA's Anderson School in 2012. Dr. Malloy has 12 peer-reviewed publications and book chapters, dozens of invited and contributed scientific presentations and has been a reviewer for various scientific journals.

Dr. Malloy's managerial and leadership experience, including his many years of experience in managing and supervising the commercialization of biotechnology products, permit him to contribute valuable strategic management insight, and qualify him to be a member of our Board of Directors.

**Carolyn Beaver, Director,** joined our Board in February 2019 and has over 30 years of audit and financial management experience. She previously held several positions at Sequenom Inc., a life sciences testing company, including Chief Financial Officer and Senior Vice President from March 2015 to October 2016, Chief Financial Officer from June 2014 to March 2015 and Vice President and Chief Accounting Officer from June 2012 to March 2015. Ms. Beaver was previously Corporate Vice President and Controller of Beckman Coulter, Inc., a biomedical laboratory instrument and test company, from August 2005 until June 2012, and was named Chief Accounting Officer in October 2005, a position she held until July 2011, following the acquisition of Beckman Coulter, Inc. by Danaher Corporation. She also served as interim Chief Financial Officer of Beckman Coulter from July 2006 through October 2006. Ms. Beaver was a director of Commerce National Bank, chair of its audit committee and a member of its asset/liability committee from 2005 until the bank was acquired in 2013. Ms. Beaver served as an audit partner with KPMG LLP from 1987 to 2002. She was named a director and member of the audit committee of MaxLinear, Inc., a high-performance broadband and networking semiconductor company, in December 2018. Ms. Beaver received a Bachelor of Science degree in Business Administration from California State Polytechnic University, Pomona and is a certified public accountant (inactive). In appointing Ms. Beaver as a director, the Board determined that she is qualified to be a member of the Company's Board based on her financial reporting and accounting expertise and experience. Specifically, the Board considered Ms. Beaver's prior service as Chief Financial Officer and Chief Accounting Officer for life sciences companies, her past and current board and board committee experience and her prior employment as an audit partner with KPMG LLP.

***Class II Directors Continuing in Office Until the 2022 Annual Meeting of Stockholders in the Event that Proposal 2 is Not Approved***

**Taylor Crouch, Director, Chief Executive Officer, and President**, joined the Company as Chief Executive Officer and President and was appointed to the Board in April 2017. Mr. Crouch has over 25 years of experience building and leading technology, expertise and product-based companies in the life sciences and biotech industries. For more than seven years, he managed and served as an operational investor in a group of leading clinical research site companies. Specifically, Mr. Crouch served as Chief Executive Officer at eStudySite from January 2009 to June 2016; as Executive Chairman of Meridien Research from December 2013 to September 2016; and as a

Director of the National Research Institute from September 2011 through July 2016. Prior to this, Mr. Crouch served as senior vice president of operations/president international at Ligand Pharmaceuticals, Inc., a publicly traded company, from 2005 to 2007, with responsibilities for new business development, technical operations, international sales and clinical research. Prior to Ligand, he was president and chief operating officer of Discovery Partners International, a publicly traded drug discovery services and technology provider. Earlier in his career, he was Chief Executive Officer of Variagenics, Inc., a publicly traded pharmacogenomics company, Senior Vice President of Marketing and Sales at Parexel International (a global CRO), and he also held international management positions in new product development and commercialization at Pfizer and Schering Plough.

Mr. Crouch's previous service as a chief executive officer or as a senior executive officer for other leading life science and biotech companies, especially his expertise and leadership in growing their commercial operations and his deep experience in research and drug development strategy, as well as his role as our Chief Executive Officer and President, qualify him to be a member of our Board of Directors.

**Mark Kessel, Director**, joined our Board in August 2016. He currently is an advisor to healthcare companies, as well as a director of not-for-profit institutions. Mr. Kessel was a partner of Symphony Capital, LLC, a private equity firm he co-founded in 2002 that invests in biopharmaceutical company clinical development programs. At the law firm of Shearman & Sterling from 1971 to 2001, Mr. Kessel held various roles, including as managing partner leading the international law firm's day-to-day operations. He helped build the firm, serving as a leader in the healthcare, biopharmaceutical, agricultural biotech, high-tech, and financial services practices. He also established the firm's San Francisco office, serving as its managing partner and turning it into the leader in M&A, capital markets, and corporate governance. He also served Of Counsel to the firm until June 2019. Mr. Kessel has previously served on several public biopharmaceutical company boards.

Mr. Kessel's extensive experience in corporate governance, licensing, and strategic finance, as well as his deep experience advising pharmaceutical and biotech companies, qualify him to be a member of our Board of Directors.

The following figures reflect the current independence status and tenure of our Board:



***No Family Relationships***

There are no family relationships between any of our officers and directors.

## CORPORATE GOVERNANCE

***Overview***

We are committed to maintaining high standards of business conduct and corporate governance, which we believe are fundamental to the overall success of our business, serving our stockholders well and maintaining our integrity in the marketplace. Our Corporate Governance Guidelines and Code of Business Conduct, together with our Certificate of Incorporation, Bylaws and the charters of our Board Committees, form the basis for our corporate governance framework. As discussed below, our Board of Directors has established three standing committees to assist it in fulfilling its responsibilities to the Company and its stockholders: the Audit Committee, the Compensation Committee, and the Nominating and Corporate Governance Committee. During Fiscal 2020, our Board also established a Special Committee in connection with our Strategic Alternatives Process, which was disbanded following the Special Meeting in April 2020. The references to our website address below do not constitute incorporation by reference of the information contained at or available on our website.

***Corporate Governance Guidelines***

Our Corporate Governance Guidelines are designed to facilitate the effective corporate governance of our Company. Our Corporate Governance Guidelines cover topics including, but not limited to, director qualification criteria, director responsibilities, director compensation, director orientation and continuing education, communications from stockholders to the Board, succession planning and the annual evaluations of the Board and its committees. Our Corporate Governance Guidelines are reviewed regularly by the Nominating and Corporate Governance Committee and amended by our Board when appropriate. The full text of our Corporate Governance Guidelines is available on our website at www.organovo.com. A printed copy may also be obtained by any stockholder upon request to our Corporate Secretary.

***Code of Business Conduct***

We have adopted a Code of Business Conduct that applies to all of our officers, directors, employees and consultants. Among other matters, our Code of Business conduct is designed to deter unlawful or unethical behavior and to promote the following:

- Prohibiting conflicts of interest (including protecting corporate opportunities);
- Protecting our confidential and proprietary information and that of our customers and vendors;
- Treating our employees, customers, suppliers and competitors fairly;
- Encouraging full, fair, accurate, timely and understandable disclosure;
- Protecting and properly using company assets;
- Complying with laws, rules and regulations (including insider trading laws); and
- Encouraging the reporting of any unlawful or unethical behavior.

Any waiver of the Code of Business Conduct for our executive officers, directors or employees may be made only by our Nominating and Corporate Governance Committee and will be promptly disclosed on our website. We have posted a copy of our Code of Business Conduct, and intend to post amendments to this code, on our website as permitted under SEC rules and regulations.

***Board Independence***

Our shares of common stock are listed for trading on the Nasdaq Capital Market. As a result, our Board utilizes the definition of “independence” as that term is defined by the listing standards of the Nasdaq Stock Market and the rules and regulations of the SEC, including the additional independence requirements for members of our Audit and Compensation Committees. Our Board considers that a director is independent when the director is not an officer or employee of the Company or its subsidiaries, does not have any relationship which would, or could reasonably appear to, materially interfere with the independent judgment of such director, and the director otherwise meets the independence requirements under the listing standards of the Nasdaq Capital Market and the rules and regulations of the SEC. Our Board has reviewed the materiality of any relationship that each of our directors has with the Company, either directly or indirectly. Based on this review, our Board has affirmatively determined that four of our six current directors, including Mark Kessel, Kirk Malloy, Ph.D., Carolyn Beaver and Adam Stern, qualify as “independent” directors. Taylor Crouch does not qualify as an independent director due to his current service as our Chief Executive Officer and President and Keith Murphy does not qualify as an independent director due to his service as Chief Executive Officer of Viscient, which is a related party of the Company.

If the Advisory Nominees Proposal is approved, four of the five directors will qualify as independent: Adam Stern, Douglas Jay Cohen, David Gobel and Alison Tjosvold Milhous.

***Board Leadership Structure***

Our Bylaws provide our Board with flexibility to combine or separate the positions of Chairman of the Board and Chief Executive Officer in accordance with its determination that utilizing one or the other structure would be in the best interests of our Company and its stockholders. At present, Dr. Malloy serves as the independent Chairman of the Board and Mr. Crouch serves as our Chief Executive Officer. If the Advisory Nominees Proposal is approved by our stockholders and the Advisory Nominees are appointed to our Board

immediately following the 2020 Annual Meeting, and it is anticipated that these roles will remain separate if the New Director Slate is appointed. Our Board has determined that separating the positions of Chief Executive Officer and Chairman of the Board is in the best interests of the Company and its stockholders at this time.

Our Board believes that the current leadership structure, which separates the Chairman and Chief Executive Officer roles, enhances the accountability of our Chief Executive Officer to our Board and encourages balanced decision making. In addition, our Board believes that this structure provides an environment in which the independent directors are fully informed, have significant input into the content of Board meetings, and are able to provide objective and thoughtful oversight of management. Our Board also adopted this leadership structure in recognition of the differences in responsibilities. While our Chief Executive Officer is responsible for the day-to-day leadership and operations of the Company, the Chairman of the Board provides guidance to our Board and sets the agenda for Board meetings. Our Chairman also provides performance feedback on behalf of our Board to our Chief Executive Officer. Our Board also considered that our Audit, Compensation, Nominating and Corporate Governance, and Special Committees, which oversee critical matters such as the integrity of our financial statements, the compensation of executive management, the selection and evaluation of directors, the development and implementation of corporate governance policies, and the oversight of the Company's compliance with laws and regulations, each consist entirely of independent directors. Our Board intends to evaluate from time to time whether our Chief Executive Officer and Chairman positions should remain separate based on what our Board determines is best for the Company and its stockholders.

***Board Committees (Current)***

| | Audit Committee | Compensation Committee | Nominating and Corporate Governance Committee | Special Committee |
|---|---|---|---|---|
| **Independent Director** | | | | |
| Mark Kessel, J.D. | Member | Member | Member | Chair |
| Kirk Malloy, Ph.D. | | Chair | Chair | Member |
| Adam Stern | Member | Member | | |
| Carolyn Beaver | Chair | | Member | |
| **Non-Independent Director** | | | | |
| Taylor Crouch | | | | |
| Keith Murphy | | | | |

***Board Committees (if the Advisory Nominees Proposal is Approved)***

| | Audit Committee | Compensation Committee | Nominating and Corporate Governance Committee |
|---|---|---|---|
| **Independent Director** | | | |
| Adam Stern | Member | Member | |
| Douglas Jay Cohen | Member | Member | Chair |
| David Gobel | | Chair | Member |
| Alison Tjosvold Milhous | Chair | | Member |
| **Non-Independent Director** | | | |
| Keith Murphy | | | |

***Compensation Committee.*** Our Compensation Committee currently consists of Dr. Malloy (Chair), Mr. Kessel and Mr. Stern. The functions of the Compensation Committee include the approval of the compensation offered to our executive officers and recommending to the full Board the compensation to be offered to our non-employee directors. Additionally, in accordance with Nasdaq listing standards, the Compensation Committee evaluates the independence of each compensation consultant, outside counsel and advisor retained by or providing advice to the Compensation Committee. The Board has determined that each existing and planned future member of the Compensation Committee is an "independent director" under Nasdaq listing standards and the applicable rules and regulations of the SEC. In addition, the existing and planned future members of the Compensation Committee qualify as "non-employee directors" for purposes of Rule 16b-3 under the Exchange Act and as "outside directors" for purposes of Section 162(m) of the Internal Revenue Code of 1986, as amended. The Compensation Committee may delegate authority to one or more members of the Compensation Committee or to one or more of our executives of the Company, and may form and delegate authority to one or more subcommittees and to one or more committees of executives of the Company, except that the Compensation Committee may not delegate authority to approve compensation for our Chief Executive Officer or our other Section 16 and other executive officers to any person or committee (other than to a subcommittee consisting exclusively of at least three members of the Compensation Committee). Our Compensation Committee has the authority to engage the services of compensation consultants, outside counsel, experts and other advisors as it determines appropriate to assist it in the performance of its functions. The Compensation Committee has engaged the services of Arnosti, a national executive compensation consulting firm, as its independent compensation consultant, to assist it in evaluating our overall executive compensation program and practices. The Compensation Committee is governed by a written charter approved by the Board of Directors, a copy of which is available on our website at www.organovo.com.

***Audit Committee***. Our Audit Committee currently consists of Ms. Beaver (Chair), Mr. Stern, and Mr. Kessel. The functions of the Audit Committee include the retention of our independent registered public accounting firm, reviewing and approving the planned scope, proposed fee arrangements and results of the Company's annual audit, reviewing the adequacy of the Company's accounting and financial controls and reviewing the independence of the Company's independent registered public accounting firm. The Board has determined that each existing and planned future member of the Audit Committee is an "independent director" under the Nasdaq listing standards, are financially literate under Nasdaq listing standards, and at least one member has financial sophistication under Nasdaq listing standards. The Board has also determined that Mr. Stern, Mr. Kessel, and Ms. Beaver are each an "audit committee financial expert" within the applicable definition of the SEC. The Audit Committee is governed by a written charter approved by the Board of Directors, a copy of which is available on our website at www.organovo.com.

***Nominating and Corporate Governance Committee***. Our Nominating and Corporate Governance Committee currently consists of Dr. Malloy (Chair), Mr. Kessel, and Ms. Beaver. The functions of the Nominating and Corporate Governance Committee include the identification, recruitment and nomination of candidates for the Board and its committees, making recommendations to the Board concerning the structure, composition and functioning of the Board and its committees (including the reporting channels through which the Board receives information and the quality and timeliness of the information), developing and recommending to the Board corporate governance guidelines applicable to the Company and annually reviewing and recommending changes (as necessary or appropriate), overseeing the annual evaluation of the Board's effectiveness and performance, and periodically conducting an individual evaluation of each director. The Board has determined that each current and planned future member of the Nominating and Corporate Governance Committee is an "independent director" under the Nasdaq listing standards and the applicable rules and regulations of the SEC. The Nominating and Corporate Governance Committee is governed by a written charter approved by the Board of Directors, a copy of which is available on our website at www.organovo.com.

***Board and Committee Attendance***

During the fiscal year ended March 31, 2020, all directors attended at least 75% or more of the aggregate of the meetings of the Board and of each of the Board committees on which they served. The Board met twelve times and acted by written consent four times during the fiscal year ended March 31, 2020; the Audit Committee met four times and did not act by written consent during the fiscal year ended March 31, 2020; the Compensation Committee met one time and did not act by written consent during the fiscal year ended March 31, 2020; and the Nominating and Corporate Governance Committee met two times and did not act by written consent during the fiscal year ended March 31, 2020.

***Director Attendance at the Annual Meeting***

We believe the Annual Meeting provides a good opportunity for our directors to hear any feedback that our stockholders may desire to share with the Company and the Board. As a result, we encourage our directors to attend our Annual Meetings. We reimburse our directors for the reasonable expenses they may incur in attending the Annual Meeting. At the 2019 Annual Meeting of Stockholders, two of our then serving directors were in attendance.

***Executive Sessions***

Executive sessions of our independent directors are held at each regularly scheduled meeting of our Board and at other times they deem necessary. The Board's policy is to hold executive sessions without the presence of management, including our President and Chief Executive Officer. Our Board committees also generally meet in executive session at the end of each committee meeting.

***Board Oversight of Risk***

Our Board is actively involved in the oversight of risks that could affect our Company. The Board as a whole has responsibility for risk oversight of the Company's risk management policies and procedures, with specific reviews of certain areas being conducted by the relevant Board committee. The Board satisfies this responsibility through reports by each Committee Chair to the Board regarding the Committee's considerations and actions, as well as through regular reports directly from the member or members of management responsible for oversight of particular risks within the Company. Specifically, the Board committees address the following risk areas:

- The Compensation Committee is responsible for overseeing the management of risks related to the Company's executive compensation plans and arrangements.
- The Audit Committee discusses with management the Company's major financial risk exposures, regulatory and compliance matters and the steps management has taken to monitor and control such exposures.
- The Nominating Committee is responsible for overseeing the Company's compliance with good corporate governance practices, including the requirements established by the SEC and the Nasdaq Capital Market.

The Board encourages management to promote a corporate culture that incorporates risk management into the Company's day-to-day business operations.

***Compensation Committee Interlocks and Insider Participation***

No member of our Compensation Committee has at any time been our employee. Except as set forth herein, none of our executive officers serves, or has served during the last fiscal year, as a member of the board of directors or compensation committee of any other entity that has one or more executive officers serving as a member of our Board or our Compensation Committee.

***Stock Ownership Guidelines***

All of our executive officers and non-employee Directors are subject to stock ownership guidelines approved by the Board within five years of starting employment or becoming a Director. Our Chief Executive Officer is required to beneficially hold a number of shares of the Company's common stock with a value equal to five times (5x) his base salary. All other executive officers are required to hold a number of shares with a value equal to three times (3x) their base salary. Non-employee Directors are required to beneficially hold a number of shares of the Company's common stock with a value equal to four times (4x) the annual cash retainer paid to them for service as a member of our Board. Equity value is calculated based on all shares owned and expected to be owned within the compliance period plus the value of all options expected to be vested within the compliance period. Stock Options, for purposes of the Stock Ownership Guidelines, are valued at the greater of (i) the original Black-Scholes per share valuation at the date of the respective Option Grant or (ii) the "in the money" value of the Vested Stock Options based on the closing market stock price on the applicable annual evaluation date. Each of our executive officers and each of our non-employee Directors who have been a member of the Board for more than one year are in compliance with the Stock Ownership Guidelines.

***Succession Planning***

The Corporate Governance Guidelines provide for an annual succession planning process for the Company's Chief Executive Officer and its other executives and key employees.

***Consideration of Director Nominees***

***General***. In evaluating nominees for membership on our Board, our Nominating and Corporate Governance Committee applies the Board membership criteria set forth in our Corporate Governance Guidelines. Under these criteria, the Committee takes into account many factors, including an individual's business experience and skills (including skills in core areas such as operations, management, technology, relevant industry knowledge (e.g., research tools, contract research services, therapeutics, drug discovery, reimbursement, medical/surgical), accounting and finance, regulatory matters and clinical trials, leadership, strategic planning and international markets), as well as independence, judgment, professional reputation, integrity and ability to represent the best interests of the Company and its stockholders. In addition, the Nominating and Corporate Governance Committee will also consider the ability of the nominee to commit sufficient time and attention to the activities of the Board, as well as the absence of any potential conflicts with the Company's interests. The Nominating and Corporate Governance Committee does not assign specific weights to particular criteria and no particular criterion is necessarily applicable to all prospective nominees. The Board does not have a formal policy with respect to diversity of nominees. Rather, our Nominating and Corporate Governance Committee considers Board membership criteria as a whole and seeks to achieve diversity of occupational and personal backgrounds on the Board. Our Board will be responsible for selecting candidates for election as directors based on the recommendation of the Nominating and Corporate Governance Committee.

Our Nominating and Corporate Governance Committee regularly assesses the appropriate size of our Board, and whether any vacancies on our Board are expected due to retirement or other reasons. In the event that vacancies are anticipated, or otherwise arise, the Committee will consider various potential nominees who may come to the attention of the Committee through current Board members, professional search firms, stockholders or other persons. Each potential nominee brought to the attention of the Committee, regardless of who recommended such potential nominee, is considered on the basis of the criteria set forth in our Corporate Governance Guidelines.

***Stockholder Nominees***. The Nominating and Corporate Governance Committee will review a reasonable number of candidates for director recommended by a single stockholder who has held over 1.0% of our common stock for over one year and who satisfies the notice, information and consent provisions set forth in our Bylaws. The Board will use the same evaluation criteria and process for director nominees recommended by stockholders as it uses for other director nominees. A stockholder wishing to formally nominate an individual for election to the Board must do so by following the procedures described in the Company's Bylaws. There has been no change to the procedures set forth in our Bylaws by which stockholders may recommend nominees to our Board. For information concerning stockholder proposals, see "Stockholder Proposals for the 2021 Annual Meeting" below in this Proxy Statement.

***Communications with the Board of Directors***

The Board desires that the views of stockholders will be heard by the Board, its Committees or individual directors, as applicable, and that appropriate responses will be provided to stockholders on a timely basis. Stockholders wishing to formally communicate with the Board, the independent directors as a group or any individual director may send communications directly to the Company at 440 Stevens Ave, Suite 200, Solana Beach, CA 92075, Attention: Corporate Secretary. All clearly marked written communications, other than unsolicited advertising or promotional materials, are logged and copied, and forwarded to the director(s) to whom the communication was addressed. Please note that the foregoing communication procedure does not apply to (i) stockholder proposals pursuant to Exchange Act Rule 14a-8 and communications made in connection with such proposals or (ii) service of process or any other notice in a legal proceeding.

## DIRECTOR COMPENSATION

Our directors play a critical role in guiding our strategic direction and overseeing the management of our Company. Ongoing developments in corporate governance and financial reporting have resulted in an increased demand for such highly qualified and productive public company directors. The many responsibilities and risks and the substantial time commitment of being a director of a public company require that we provide adequate incentives for our directors' continued performance by paying compensation commensurate with our directors' workload. Our non-employee directors are compensated based upon their respective levels of Board participation and responsibilities, including service on Board Committees. Our employee directors receive no separate compensation for their service as directors.

Our director compensation is overseen by the Compensation Committee, which makes recommendations to our Board of Directors on the appropriate structure for our non-employee director compensation program and the appropriate amount of compensation. Our Board of Directors is responsible for final approval of our non-employee director compensation program and the compensation paid to our non-employee directors.

In connection with establishing our non-employee director compensation for Fiscal 2020, the Compensation Committee retained Arnosti as its independent compensation consultant. With the assistance of Arnosti, the Board of Directors and Compensation Committee conducted a formal review of our non-employee director compensation and incentive programs relative to the same peer group used in benchmarking the compensation for our executive officers. The Compensation Committee and the Board determined that a philosophy of targeting total compensation for our non-employee directors at the 50th percentile (based on peer group benchmarks), is in the best interests of the Company and its stockholders.

***Non-Employee Director Compensation Framework***

For Fiscal 2020, our non-employee director compensation program consisted of: (i) annual cash retainers for Board service and for service as the chair or member of one of the standing Board Committees and (ii) long-term equity awards granted on an annual basis to continuing non-employee directors immediately following the Annual Meeting of Stockholders or upon their initial appointment to the Board for new directors. Our non-employee directors are not entitled to any Board or Board Committee meeting fees.

***Annual Cash Retainers***. For Fiscal 2020, each of our non-employee directors was eligible to receive an annual cash retainer of $50,000 for Board membership and the Lead Independent Director or Independent Chairman was eligible to receive an additional $50,000. In addition, for Fiscal 2020 each of our non-employee directors was eligible to receive the applicable annual retainers set forth below for Committee Chairs and for service as a member of a Board Committee:

| Position | Audit Committee | Compensation Committee | Nominating & Corporate Governance Committee | Special Committee |
|---|---|---|---|---|
| Committee Chair (additional retainer) | $ 15,000 | $ 10,000 | $ 9,500 | $ - |
| Committee Member | $ 10,000 | $ 7,750 | $ 5,000 | $ 15,000 |

No additional meeting fees were paid to our non-employee directors.

***Annual Long-Term Equity Awards***. In addition to the annual cash retainers, each non-employee director continuing in office after the adjournment of the 2019 Annual Meeting of Stockholders received a stock option award (the "Annual Award") immediately following the adjournment of the annual meeting. The number of shares subject to the Annual Award was calculated by taking the number of shares of common stock equal to 0.04% of the outstanding shares of common stock of the Company as of the date of the Annual Award, with the number of shares subject to the option rounded to the nearest 500 shares.

The Annual Award has an exercise price equal to the closing market price of the Company's common stock on the date of the Annual Awards. Each such Annual Award will vest in full on the earlier of (i) one year from the date of the Annual Award or (ii) the next Annual Meeting of Stockholders held by the Company, subject to acceleration in the event of the change of control.

***Initial Long-Term Equity Awards***. During Fiscal 2020, our non-employee director compensation program provided that upon joining the Board of Directors (whether by appointment or election by stockholders), a non-employee director will receive an initial stock option award (the "Initial Award") equal to 0.04% of the outstanding shares of common stock of the Company as of the date of the Director's appointment or election to the Board. The new director also receives an Annual Award calculated on the same basis as the Annual Award for an existing director, except that the initial Annual Award shall be pro-rated based on the date of the director's appointment or election and the number of months remaining in the twelve-month period between the last regularly scheduled Annual Meeting held by the Company and the next regularly scheduled Annual Meeting to be held by the Company. The Initial Award and initial Annual Award will have an exercise price equal to the closing market price of the Company's common stock on the date the awards are granted. Each such Initial Award will vest quarterly over a period of twelve quarters from the vesting commencement date, subject to acceleration in the

event of the change of control. Each Annual Award shall vest in full on the earlier of (i) one year from the date of the Annual Award or (ii) the next Annual Meeting of Stockholders held by the Company, subject to acceleration in the event of the change of control.

***Reimbursement***. Our non-employee Directors are entitled to reimbursement for their reasonable travel and lodging expenses for attending Board and Board Committee meetings.

***Fiscal Year 2021 Director Compensation***

After our stockholders did not approve the Merger with Tarveda at the Special Meeting, our Compensation Committee and our Board of Directors determined that it would be in the best interests of the Company and its stockholders to save resources by amending our non-employee director compensation program. Effective May 15, 2020 (i.e. the period from May 15, 2020 to March 31, 2021) the non-employee director compensation consists only of: (i) an annual cash retainer of $50,000, payable in advance on a pro rata basis, for Board membership and (ii) an annual cash retainer of $10,000 for service as a member of the Company's Audit Committee. The Board eliminated the additional $50,000 retainer payable to the Chairman and Lead Independent Director and eliminated all other Board Committee and Chair fees.

***Director Compensation Table***

The following table sets forth the compensation earned and paid to each non-employee director for service as a director during Fiscal 2020:

| Name | Year or Period | Fees Earned or Paid in Cash ($) | Stock Awards ($) | Option Awards ($)(1) | All Other Compensation ($)(2) | Total ($) |
|---|---|---|---|---|---|---|
| Mark Kessel | 2020 | $ 73,817 | $ — | $ 9,882 | $ — | $ 83,699 |
| Kirk Malloy, Ph.D. | 2020 | $ 128,705 | $ — | $ 9,882 | $ — | $ 138,587 |
| Richard Maroun | 2020 | $ 83,239 | $ — | $ 9,882 | $ — | $ 93,121 |
| David Shapiro, M.D. | 2020 | $ 54,423 | $ — | $ 9,882 | $ — | $ 64,305 |
| Carolyn Beaver | 2020 | $ 71,550 | $ — | $ 38,093 | $ — | $ 109,643 |
| Bob Baltera (3) | 2020 | $ 33,382 | $ — | $ — | $ — | $ 33,382 |
| Jim Glover (3) | 2020 | $ 34,348 | $ — | $ — | $ — | $ 34,348 |
| Tamar Howson (3) | 2020 | $ 12,151 | $ — | $ — | $ — | $ 12,151 |

(1) These amounts represent the grant date fair value of stock option awards granted by the Board, determined in accordance with FASB ASC Topic 718. All awards are amortized over the vesting life of the award. For the assumptions used in our valuations, see "Note 5 – Stockholders' Equity" of our notes to consolidated financial statements in the annual report on Form 10-K for the year ended March 31, 2020, as filed with the SEC.

(2) Excludes amounts reimbursed for reasonable travel to Board and Board Committee meetings.

(3) Messrs. Baltera and Glover resigned from the Board effective as of the 2019 Annual Meeting of Stockholders and Ms. Howson left the Board effective as of the 2019 Annual Meeting of Stockholders.

***Director Compensation – Equity***

The following table shows the total number of unvested Restricted Stock Units ("RSUs") and total option awards held by each of our non-employee directors as of March 31, 2020:

| Name | Unvested RSUs Outstanding (#) | Vested Stock Options Outstanding (#) | Unvested Stock Options Outstanding (#) |
|---|---|---|---|
| Mark Kessel | — | 125,000 | 52,000 |
| Kirk Malloy, Ph.D. | — | 200,000 | 52,000 |
| Richard Maroun | — | 125,000 | 52,000 |
| David Shapiro, M.D. | — | 49,375 | 79,125 |
| Carolyn Beaver | — | 47,834 | 86,666 |

## EXECUTIVE OFFICERS

The following persons are our executive officers and hold the positions set forth opposite their names as of this filing:

| Name | Age | Position |
|---|---|---|
| Taylor Crouch | 60 | Chief Executive Officer and President |
| Craig Kussman | 62 | Chief Financial Officer |
| Jennifer Kinsbruner Bush, JD | 45 | Senior Vice President, General Counsel, Corporate Secretary and Compliance Officer |

See the section entitled “Board of Directors Information” above, for a description of the business experience and educational background of Mr. Crouch.

**Craig Kussman, Chief Financial Officer**, joined us in August 2016. Prior to joining Organovo, Mr. Kussman served as the Chief Financial Officer at Alphaeon Corporation, a lifestyle healthcare company, from October 2014 to August 2016. From August 2010 until October 2014, Mr. Kussman served as Chief Financial Officer of XIFIN, Inc., a healthcare information technology company. Mr. Kussman also formerly served as Chief Financial Officer and Senior Vice President of Corporate Development for Ascenta Therapeutics, a developmental stage biopharmaceutical company. He has also held senior executive positions at Breach Security, Discovery Partners International, Inc., SYNAVANT Inc., Cognizant Corp., and IMS Health. Mr. Kussman received an MBA in Finance from The Wharton School, and a BA in Economics and Mathematics from Pomona College.

**Jennifer Kinsbruner Bush, JD, General Counsel, Corporate Secretary and Compliance Officer**, joined us in September 2014. Ms. Bush has more than 15 years of intellectual property, corporate legal, regulatory, compliance, and transactional experience. Prior to joining Organovo, from October 2010 to August 2014, Ms. Bush held positions of increasing responsibility at Broadcom Corp., where she was most recently Associate General Counsel. Before joining Broadcom, from February 2010 to October 2010, Ms. Bush served as Associate General Counsel of DivX, Inc. prior to its acquisition by Sonic Solutions in October 2010. Ms. Bush practiced for 10 years at nationally ranked law firms, serving as an associate and then as a principal with Fish & Richardson, P.C. from 2002 to 2010 and as an associate with Irell & Manella LLP from 2001 to 2002, where she represented clients focused on a variety of technologies, including in the areas of medical devices, life sciences, software, and consumer products. Prior to entering into private practice, Ms. Bush served as a law clerk to the Honorable Stanley Marcus, 11th Circuit Court of Appeals, from 2000 to 2001. Ms. Bush received a J.D. from Yale Law School and an A.B. in history and Latin American Studies from Princeton University.

## SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following tables set forth certain information regarding the beneficial ownership of our common stock as of July 17, 2020 (the record date) by (i) each person who, to our knowledge (based solely on our review of Schedules 13D and 13G filed with the SEC), beneficially owns more than 5% of our common stock; (ii) each of our directors, director nominees and named executive officers (as disclosed in this Proxy Statement); and (iii) all of our executive officers, directors and director nominees as a group. Unless otherwise indicated in the table or the footnotes to the following table, each person named in the table has sole voting and investment power and such person's address is c/o Organovo Holdings, Inc., 440 Stevens Ave, Suite 200, Solana Beach, CA 92075.

We determined the number of shares of common stock beneficially owned by each person under rules promulgated by the SEC, based on information obtained from Company records and filings with the SEC on or before July 17, 2020. In cases of holders who are not directors, director nominees and named executive officers, Schedules 13G or 13D filed with the SEC (and, consequently, ownership reflected here) often reflect holdings as of a date prior to July 17, 2020. The information is not necessarily indicative of beneficial ownership for any other purpose. Under these rules, beneficial ownership includes any shares as to which the individual or entity has sole or shared voting power or investment power and also any shares which the individual or entity had the right to acquire within sixty days of July 17, 2020. These shares, however, are not deemed outstanding for the purpose of computing the percentage ownership of any other individual.

Applicable percentages are based on 130,618,203 shares of common stock outstanding as of July 17, 2020, as adjusted as required by the rules promulgated by the SEC.

| | Beneficial Ownership(1) | |
|---|---|---|
| Name of Beneficial Owner | Number of Common Shares | Percent of Common Shares |
| **5% Stockholders** | | |
| ARK Investment Management, LLC | 27,464,442 (2) | 21.0% |
| Sumitomo Mitsui Trust Holdings, Inc. | 12,807,832 (3) | 9.8% |
| Renaissance Technologies LLC | 7,023,760 (4) | 5.4% |
| | | |
| **Directors and Named Executive Officers** | | |
| Taylor Crouch | 2,769,942 (5) | 2.1% |
| Keith Murphy | 1,326,402 (6) | 1.0% |
| Jennifer Kinsbruner Bush, JD | 997,456 (7) | * |
| Craig Kussman | 986,137 (8) | * |
| Kirk Malloy, Ph.D. | 259,500 (9) | * |
| Mark Kessel | 192,000 (10) | * |
| Carolyn Beaver | 108,500 (11) | * |
| Paul Gallant | 67,642 (12) | * |
| Steve Hughes, M.D. | 19,426 (13) | * |
| David Gobel | 2,600 (14) | * |
| Adam Stern | - | - |
| Douglas Jay Cohen | - | - |
| Alison Tjosvold Milhous | - | - |
| All executive officers and directors as a group (13 persons) | 6,729,605 (15) | 5.1% |

* Less than one percent.

(1) Beneficial ownership of shares and percentage ownership are determined in accordance with the rules of the SEC. Unless otherwise indicated and subject to community property laws where applicable, the individuals named in the table above have sole voting and investment power with respect to all shares of our common stock shown as beneficially owned by them.

(2) Based solely upon ARK Investment Management LLC's ETF website as of July 17, 2020. According to the ETF website, ARK Investment Management LLC has sole voting power with respect to 27,464,442 shares.

(3) Based solely upon a Schedule 13G filed on February 12, 2020, by Sumitomo Mitsui Trust Holdings, Inc., 1-4-1 Marunouchi, Chyoda-ku, Tokyo 100-8233, Japan. According to the Schedule 13G, Sumitomo Mitsui Trust Holdings, Inc. has no sole voting power, shared voting power with respect to 12,807,832 shares, no sole dispositive power, and shared dispositive power with respect to 12,807,832 shares.

(4) Based solely upon a Schedule 13G filed on February 12, 2020, by Renaissance Technologies LLC, 800 Third Avenue, New York, New York 10022. According to the Schedule 13G, Renaissance Technologies LLC has sole voting power with respect to 7,023,760 shares, no shared voting power, sole dispositive power with respect to 7,023,760 shares, and no shared dispositive power.

(5) Includes options to purchase 2,709,173 option shares currently exercisable or exercisable within 60 days of July 17, 2020. Does not include a stock option to purchase 1,329,039 shares of common stock subject to future vesting pursuant to the terms of stock option agreements. Does not include 65,082 additional restricted stock units subject to future vesting pursuant to the terms of restricted stock unit agreements. An RSU represents a conditional right to receive one share of our common stock at a specified future date. Does not include a PBRSUs representing the right to receive up to 2,180,134 shares of common stock contingent upon the Company's achievement of performance metrics. A PBRSU represents a conditional right to receive one share of our common stock at a specified future date.

(6) Mr. Murphy rejoined the board of directors on July 15, 2020. Includes 255,255 shares are held in Equity self-directed IRA FBO Keith Murphy.

(7) Includes options to purchase 871,875 option shares currently exercisable or exercisable within 60 days of July 17, 2020. Does not include 461,458 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements. Does not include 68,545 additional restricted stock units subject to future vesting pursuant to the terms of restricted stock unit agreements. An RSU represents a conditional right to receive one share of our common stock at a specified future date. Does not include a PBRSUs representing the right to receive up to 721,650 shares of common stock contingent upon the Company's achievement of performance metrics. A PBRSU represents a conditional right to receive one share of our common stock at a specified future date.

(8) Includes options to purchase 836,250 option shares currently exercisable or exercisable within 60 days of July 17, 2020. Does not include 468,750 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements. Does not include 73,791 additional restricted stock units subject to future vesting pursuant to the terms of restricted stock unit agreements. An RSU represents a conditional right to receive one share of our common stock at a specified future date. Does not include a PBRSUs representing the right to receive up to 806,550 shares of common stock contingent upon the Company's achievement of performance metrics. A PBRSU represents a conditional right to receive one share of our common stock at a specified future date.

(9) Includes options to purchase 252,000 option shares currently exercisable or exercisable within 60 days of July 17, 2020.

(10) Includes options to purchase 177,000 option shares currently exercisable or exercisable within 60 days of July 17, 2020.

(11) Includes options to purchase 108,500 option shares currently exercisable or exercisable within 60 days of July 17, 2020. Does not include 26,000 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements.

(12) Includes 67,642 of RSUs that vested pursuant to the terms of restricted stock unit agreements prior to Mr. Gallant's termination on September 30, 2019. An RSU represents a conditional right to receive one share of our common stock at a specified future date.

(13) Includes 19,426 of RSUs that vested pursuant to the terms of restricted stock unit agreements prior to Dr. Hughes's termination on August 30, 2019. An RSU represents a conditional right to receive one share of our common stock at a specified future date.

(14) Includes 2,600 shares of common stock held directly by Mr. Gobel.

(15) Includes options to purchase 5,023,298 option shares currently exercisable or exercisable within 60 days of July 17, 2020. Does not include 2,304,622 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements. Does not include 207,418 additional restricted stock units subject to future vesting pursuant to the terms of restricted stock unit agreements. An RSU represents a conditional right to receive one share of our common stock at a specified future date. Does not include performance-based restricted stock unit awards representing the right to receive up to 3,708,334 shares of common stock contingent upon the Company's achievement of various performance metrics. A PBRSU represents a conditional right to receive one share of our common stock at a specified future date.

***Changes in Control***

A change of control will be deemed to occur if the Advisory Nominees Proposal receives the requisite stockholder approval.

***Section 16(a) Beneficial Ownership Reporting Compliance***

Section 16(a) of the Securities Exchange Act of 1934, as amended (the "Act"), requires our executive officers and directors and persons who beneficially own more than 10% of our common stock to file initial reports of beneficial ownership and reports of changes in beneficial ownership with the SEC. These persons are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file. To the Company's knowledge, no person who, during Fiscal 2020, was a director or officer of the Company, or beneficial owner of more than 10% of the Company's common stock (which is the only class of securities of the Company registered under Section 12 of the Act), failed to file on a timely basis reports required by Section 16 of the Act. The foregoing is based solely upon a review by the Company of Forms 3 and 4 relating to the most recent fiscal year as furnished to the Company under Rule 16a-3(d) under the Act, and Forms 5 and amendments thereto furnished to the Company with respect to its most recent fiscal year, and any representation received by the Company from any reporting person that no Form 5 is required.

## EXECUTIVE COMPENSATION

The following Compensation Discussion and Analysis is designed to provide our stockholders with an understanding of our compensation philosophy and objectives as well as an overview of the analysis that our Compensation Committee performed in setting the compensation of our executive officers for Fiscal 2020 (i.e., the period from April 1, 2019 to March 31, 2020).

This discussion summarizes the Compensation Committee's determination of how and why, in addition to what, compensation actions were taken for our Chief Executive Officer, our two other most highly compensated executive officers serving as of the end of Fiscal 2020, as well as our two other most highly compensated former executive officers serving during Fiscal 2020, including:

- Taylor Crouch, our Chief Executive Officer and President;
- Craig Kussman, our Chief Financial Officer;
- Jennifer Kinsbruner Bush, JD, our Senior Vice President, General Counsel, Corporate Secretary and Compliance Officer;
- Steven Hughes, M.D., our former Chief Medical Officer; and
- Paul Gallant, our former General Manager.

Dr. Hughes and Mr. Gallant were terminated without Cause in connection with our strategic alternatives process and corporate restructuring on August 30, 2019 and September 30, 2019, respectively. These five individuals are collectively referred to in this Proxy Statement as our "named executive officers".

### *Recent "Say-on-Pay" Vote*

At our 2019 Annual Meeting of Stockholders, we held a stockholder advisory vote, commonly referred to as a "say-on-pay" vote, to approve the compensation of our named executive officers for Fiscal 2019 (i.e., the period from April 1, 2017 to March 31, 2019). We received favorable consideration from our stockholders, with approximately 65% of stockholder votes cast in favor of the proposal. As a result, the Compensation Committee decided to retain our general compensation framework and approach in Fiscal 2020. The Compensation Committee will consider the outcome of the annual say-on-pay votes when making future compensation decisions.

### *Compensation Philosophy and Objectives*

Our executive compensation program focuses on creating alignment between our stockholders and executive officers by including both performance and incentive-based compensation elements. Our compensation package also combines both short- and long-term components (cash and equity, respectively) at the levels the Compensation Committee determined to be appropriate to motivate, reward, and retain our executive officers. Our executive compensation program is designed to achieve the following key objectives:

- Attract, retain, and reward talented executives and motivate them to contribute to the Company's success and to build long-term stockholder value;
- Establish financial incentives for executives to achieve our key financial, operational, and strategic goals;
- Enhance the relationship between executive pay and stockholder value by utilizing long-term equity incentives; and
- Recognize and reward executives for superior performance.

### *Use of Market Data and Benchmarking*

The Compensation Committee endeavors to set compensation at competitive levels. In order to do this, the Compensation Committee compares our compensation packages with the packages offered by other companies that are similarly situated, and with which we compete for talent.

For Fiscal 2020, the Compensation Committee engaged Arnosti, an independent compensation consultant, as the Compensation Committee's advisor reporting directly to the chair of the Committee. The Compensation Committee determined that no conflict of interest exists that would preclude Arnosti from serving as an independent consultant to the Committee.

The Compensation Committee requested Arnosti to conduct a review and analysis of our executive compensation programs as compared against competitive benchmarks. This included a benchmarking analysis against prevailing market practices of a peer group of comparable companies approved by the Compensation Committee and broader industry trends and benchmarks. The analysis included a review of the "Total Direct Compensation" (which includes, salary, cash incentives, and equity awards) of our executive officers, and was based on an assessment of market trends covering available public information as well as proprietary information provided by Arnosti.

For Fiscal 2020, based on recommendations from Arnosti, our Compensation Committee determined that our peer group should be modified to better reflect our current market valuation as well as the growing importance of our therapeutics program to our overall business model. With input from Arnosti, our Compensation Committee added a group of companies focused on human therapies, with comparable size, revenues, market valuations, and stage of leading therapeutic candidate. These additions to our peer group include: Applied Genetic Technologies and Athersys, Inc. Our Compensation Committee also replaced some of the companies previously included in our peer group because their market valuations had grown too low for direct comparison to our Company, and/or their

business focus had become less relevant for direct comparison to our Company. Our Compensation Committee then used the compensation data from this revised peer group in setting executive compensation for Fiscal 2020.

The peer group for Fiscal 2020 included:

| | | |
|---|---|---|
| Agenus | Infinity Pharmaceuticals | Stemline Therapeutics |
| Applied Genetic Technologies | Pfenex | SurModics |
| Arrowhead Research Corporation | Progenics Pharmaceuticals | Sientra |
| Athersys | Proteostasis Therapeutics | Zafgen |
| Bellicum Pharmaceuticals | REGENXBIO | |
| Cerus | Ra Pharmaceuticals | |

***Determination of Executive Compensation***

In setting executive compensation for Fiscal 2020, the Compensation Committee generally targeted Total Direct Compensation at or near the median of the peer group it approved.

In addition to peer group data, the Compensation Committee considered relevant publicly available market data and surveys and the compensation reports it received from Arnosti. The Compensation Committee also reviewed and considered the compensation recommendations of our Chief Executive Officer (other than with respect to determining his own compensation), the Company's overall performance during Fiscal 2020, the Company's financial status and operating runway, each executive officer's responsibilities and contribution to the Company's achievement of the Fiscal 2020 corporate goals, and each executive officer's individual performance during Fiscal 2020. With respect to new hires, our Compensation Committee considered the executive officer's background and historical compensation in lieu of prior year performance in addition to benchmark data for the newly hired executive's position.

***Commitment to Good Compensation Governance Practices***

In designing our executive compensation program, our Compensation Committee intends to create alignment between our stockholders and executive officers and to implement good compensation governance by:

- ***Annual Advisory Vote on the Compensation of our Named Executive Officers*** – We provide our stockholders with the ability to vote annually on the compensation of our named executive officers.
- ***Independent Compensation Consultant*** – The Compensation Committee engaged Arnosti during Fiscal 2020 to serve as its independent compensation consultant. Arnosti did not provide any other services to the Company during the periods it served as a consultant to the Compensation Committee.
- ***Performance and Incentive Based*** – A significant percentage of the Total Direct Compensation our executive officers can earn is performance and incentive based, thereby aligning the interests of our executive officers with our stockholders' interests.
- ***Stock Ownership Guidelines*** – The Compensation Committee established stock ownership guidelines to further align our executive officers' interests with those of our stockholders. The guidelines require each of our named executive officers to acquire and hold a meaningful ownership interest in our Company.
- ***Compensation Risk Assessment*** – The Compensation Committee oversees and evaluates an annual risk assessment of the Company's compensation program. The Compensation Committee believes that the performance goals established for incentives do not encourage excessive risk-taking or have the potential to encourage behavior that may have a material adverse effect on the Company.
- ***Prohibitions on Hedging, Pledging and Margin Activities*** – Our insider trading policy prohibits hedging transactions by Company employees. Under the policy, all short-term, speculative or hedging transactions in Organovo securities are prohibited by all employees. In addition, the policy specifically prohibits the use of Organovo securities for pledging and margin activities.

The Compensation Committee believes that the program and policies described above demonstrate the Company's commitment to, and consistent execution of, an effective performance-oriented executive compensation program. Please see our "2020 Proxy Statement Summary" for an additional list of our compensation best practices.

***Components of Executive Compensation***

The framework established by the Compensation Committee, based on the data provided by Arnosti, for our executive compensation program consists of a base salary, performance-based cash incentives and long-term equity-based incentives. The Compensation Committee endeavors to combine these compensation elements to develop a compensation package that provides competitive pay,

rewards our executive officers for achieving our commercial, operational and strategic objectives and aligns the interests of our executive officers with those of our stockholders.

***Base Salary***: The Compensation Committee has provided, and will continue to provide, our executive officers with a base salary to compensate them for services provided during the fiscal year. In addition to benchmark data from our peer group, our Compensation Committee considers the Company's overall performance during the prior fiscal year, cash burn, the Company's financial status and operating profile, each executive officer's responsibilities and contribution to the achievement of the prior year's corporate goals, and each executive officer's individual performance during the prior fiscal year. The evaluations and recommendations proposed by our Chief Executive Officer are also considered (other than with respect to determining his own compensation). With respect to new hires, the Compensation Committee considers an executive's background and historical compensation in lieu of prior year performance as well as benchmark data for the new hire's position. Our Compensation Committee evaluates and sets the base salaries for our executives following annual performance evaluations, as well as upon a promotion or other change in responsibility. Our Compensation Committee expects to continue to utilize these policies going forward.

For Fiscal 2020, the Compensation Committee did not provide a cost of living adjustment to our executive officers compared to Fiscal 2019.

The base salaries of our named executive officers for Fiscal 2020 as compared to Fiscal 2019 are set forth in the following table:

| Name and Title | Fiscal 2020 Base Salary | Fiscal 2019 Base Salary | Increase |
|---|---|---|---|
| Taylor Crouch, *Chief Executive Officer and President* | $ 515,000 | $ 515,000 | 0.0% |
| Craig Kussman, *Chief Financial Officer* | $ 396,675 | $ 396,675 | 0.0% |
| Jennifer Kinsbruner Bush, JD, *SVP, General Counsel, Corporate Secretary and Compliance Officer* | $ 357,410 | $ 357,410 | 0.0% |
| Steven Hughes, M.D., *Former Chief Medical Officer* | $ 400,000 | $ 400,000 | 0.0% |
| Paul Gallant, *Former General Manager* | $ 288,025 | $ 288,025 | 0.0% |

***Performance-Based Cash Incentive Awards***. Our executive compensation program includes an annual performance-based cash incentive award, which provides our executive officers with an annual cash incentive opportunity as a percentage of their base salaries based upon the achievement of corporate and individual performance goals evaluated and approved by the Compensation Committee. For Fiscal 2020, the Compensation Committee determined that the annual target bonus opportunity expressed as a percentage of base salary for Mr. Crouch should be 50% of his base salary, the annual target bonus opportunities for Mr. Kussman and Ms. Bush should be 40% of their respective base salaries. Each executive officer is eligible to receive up to 150% of his or her target bonus amount based on the achievement of "stretch" corporate goals. If the minimum base performance level is met for a corporate goal, the Compensation Committee has the discretion to assign zero percentage to that performance goal or a bonus percentage on an interpolated basis between zero and 100%. For performance between the target and stretch levels for a performance goal, the bonus percentage for that performance goal is determined on an interpolated basis. For Fiscal 2020, each executive's annual performance-based cash incentive award was based 100% on the achievement of the Company's corporate goals.

For Fiscal 2020, our Compensation Committee established two corporate performance goals, including: (i) restructuring the Company and conducting a Strategic Alternatives Process, and (ii) concluding a reverse merger before the end of the fiscal year. Each of these goals were weighted equally at 50%. For Fiscal 2020, the Compensation Committee evaluated the Company's performance relative to each of these corporate performance goals and assigned the following values to each of the corporate performance goals: (i) 100% related to restructuring the Company and conducting a comprehensive Strategic Alternatives Process, and (ii) 0% because the Company's proposed reverse merger was not approved by the Company's stockholders.

Based on these scores and the relative weights applied to each goal, the Company achieved an overall aggregate of 50% of the corporate performance goals established by the Compensation Committee and described above.

Accordingly, the Compensation Committee approved bonus payments for Fiscal 2020 as follows:

| Name and Title | Percentage of Goal | Fiscal 2020 Bonus Award |
|---|---|---|
| Taylor Crouch, *Chief Executive Officer and President* | 50% | $ 128,750 |
| Craig Kussman, *Chief Financial Officer* | 50% | $ 79,335 |
| Jennifer Kinsbruner Bush, JD, *SVP, General Counsel, Corporate Secretary and Compliance Officer* | 50% | $ 71,482 |

In addition to the bonuses discussed above, the Company paid the following pro-rated target bonuses to Dr. Hughes and Mr. Gallant as provided for by our Severance Plan and their Severance Agreements:

| Name and Title | Percentage of Prorated Salary | Fiscal 2020 Bonus Award |
|---|---|---|
| Steven Hughes, M.D., *Former Chief Medical Officer* | 40% | $ 66,885 |
| Paul Gallant, *Former General Manager* | 40% | $ 57,605 |

***Equity-Based Incentive Awards***. In addition to base salaries and annual performance-based cash incentives, the Compensation Committee generally provides long-term, equity-based incentive awards to our executive officers. For Fiscal 2020, these grants consisted of performance-based restricted stock units ("PBRSU's") that vest in full upon the earlier of the Company's engagement in a pre-IND meeting with the FDA, twenty-four months from the grant-date, or a change in control. In determining the size and terms of the PBRSU awards, the Compensation Committee considered benchmark data from our peer group, publicly available market and survey data and the individual performance of the named executive officers. The Compensation Committee also considered the equity award levels recommended by the Company's Chief Executive Officer for the named executive officers (other than himself), and approved the following PBRSU awards for Fiscal 2020:

| Name | Retention Stock Award (#) | Retention Stock Award ($) | Total ($) | Multiple of Fiscal 2020 Base Salary |
|---|---|---|---|---|
| Taylor Crouch | 2,021,428 | $ 989,893 | $ 989,893 | 1.9 |
| Craig Kussman | 806,550 | $ 394,968 | $ 394,968 | 1.0 |
| Jennifer Kinsbruner Bush, JD | 721,650 | $ 353,392 | $ 353,392 | 1.0 |
| Steven Hughes, M.D. | 1,212,857 | $ 593,936 | $ 593,936 | 1.5 |
| Paul Gallant | 586,214 | $ 287,069 | $ 287,069 | 1.0 |

Additional information regarding the potential accelerated vesting applied to the equity awards held by each executive officer in the event his or her services to the Company are terminated in the event of a change in control of the Company (i.e., "double trigger" accelerated vesting) is discussed below under "Potential Payments upon Termination or Change in Control."

***Other Benefits***

In order to attract and retain qualified individuals and pay market levels of compensation, we have historically provided, and will continue to provide, our executives with the following benefits:

- ***Health Insurance*** – We provide each of our executives and their spouses and children the same health, dental, and vision insurance coverage we make available to our other eligible employees.
- ***Life and Disability Insurance*** – We provide each of our executives with the same life and disability insurance as we make available to our other eligible employees.
- ***Pension Benefits*** – We do not provide pension arrangements or post-retirement health coverage for our executives or employees. We implemented a 401(k) Plan effective January 1, 2014. We provide a company matching contribution up to 3.5% of compensation for all participants in the 401(k) plan, including our executive officers, to help attract and retain top talent.
- ***Nonqualified Deferred Compensation*** – We do not provide any nonqualified defined contribution or other deferred compensation plans to any of our employees.
- ***Perquisites*** – We limit the perquisites that we make available to our executive officers. In certain cases, we have reimbursed our executives officers for their relocation expenses on their initial hire.

***Severance Plan Participation Agreements***

In November 2015 (the "Effective Date"), we entered into a Severance and Change in Control Plan Participation Agreement (the "Participation Agreement") with each of our executive officers and certain key employees pursuant to our Severance and Change in Control Plan (the "Severance Plan") approved by our Compensation Committee. The Severance Plan establishes the amount of severance payments and benefits available in the event of a (i) termination of employment by the Company for reasons other than Cause, death or Disability or by the participant for Good Reason and (ii) termination of employment by the Company for reasons other than Cause, death or Disability or by the participant for Good Reason within six months before or within 12 months after a Change in Control (as defined in the Severance Plan). In May 2020, we amended the Severance and Change in Control Plan to clarify the definitions of Change in Control and Good Reason, and to establish that our General Counsel is included as a Tier 1 Employee under the Plan.

The Severance Plan establishes four tiers of employees: Tier 1, Tier 2, Tier 3 and Tier 4. In Fiscal 2020, the Company's Tier 1 employees included Taylor Crouch, our Chief Executive Officer, and Craig Kussman, the Company's Chief Financial Officer. The Tier 1 employees also currently include Jennifer Bush, the Company's SVP, General Counsel, Corporate Secretary and Compliance Officer. The Company's Tier 2 employees included all non-Tier 1 members of the Company's executive team. The Company's Tier 3 employees include all Senior Vice Presidents who are not members of the Company's executive team. The Company's Tier 4 employees include all Vice Presidents who are not members of the Company's executive team.

Upon termination of employment by the Company for reasons other than Cause, death or Disability or by the participant for Good Reason, each (i) Tier 1 employee is eligible for a cash severance payment equal to 2.0 times the employee's base salary, paid in a lump sum, plus a pro-rated target bonus for the fiscal year in which the termination occurs, Health Benefit Continuation (as defined in the Severance Plan) for up to 18 months, and Outplacement Assistance (as defined in the Severance Plan) for 18 months; (ii) Tier 2 employee is eligible for a cash severance payment equal to 1.0 times the employee's base salary, paid in a lump sum, plus a pro-rated target bonus for the fiscal year in which the termination occurs, Health Benefit Continuation for up to 12 months, and Outplacement Assistance for 12 months. The Severance Plan does not provide for accelerated vesting of the equity awards held by the Tier 1 or Tier 2 employees in the event of their termination without Cause or their resignation for Good Reason.

Upon termination of employment by the Company for reasons other than Cause, death or Disability or by the participant for Good Reason within 6 months before or within 24 months after a Change in Control (as defined in the Severance Plan), each (i) Tier 1 employee is eligible for a cash severance payment equal to 2.0 times the employee's base salary, paid in a lump sum, plus a pro-rated target bonus for the fiscal year in which the termination occurs, Health Benefit Continuation (as defined in the Severance Plan) for up to 18 months, and Outplacement Assistance (as defined in the Severance Plan) for 18 months; (ii) Tier 2 employee is eligible for a cash severance payment equal to 1.0 times the employee's base salary, paid in a lump sum, plus a pro-rated target bonus for the fiscal year in which the termination occurs, Health Benefit Continuation for up to 12 months, and Outplacement Assistance for 12 months. In addition, each Tier 1-4 employee will receive full accelerated vesting of all outstanding equity grants and a one-year time period to exercise any stock options or stock appreciation rights which are not cashed out upon the Change in Control.

Payment of awards under the Severance Plan is conditioned upon the employee signing a general release of claims in favor of the Company and agreeing to abide by restrictive covenants including maintaining confidential information of the Company, non-solicitation and non-recruitment of Company employees for the Restricted Period (as defined below), non-solicitation of the Company's customers or potential customers during the Restricted Period, non-employment by and limitations on investment in competitors of the Company for the Restricted Period, and no disparagement of the Company. The Restricted Period is twenty-four months for Tier 1 employees and twelve months for Tier 2 employees.

Further, pursuant to the terms of the Severance Plan Participation Agreements, any existing employment or severance agreement between the Company and the participant was immediately terminated and replaced with the provisions of the Severance Plan, subject to limited exceptions required to comply with the requirements of Internal Revenue Code Section 409A.

"Cause" as defined in the Severance Plan means (i) the willful and continued failure of the Participant to perform substantially the Participant's duties with Organovo (other than any such failure resulting from incapacity due to physical or mental illness), as determined by the Board with respect to any Tier 1 or Tier 2 Employee, and as determined by Organovo's Chief Executive Officer with respect to Employees in Tiers 3-4 no earlier than thirty (30) days after a written demand for substantial performance is delivered to the Participant, which specifically identifies the manner in which Organovo believes that the Participant has willfully and continuously failed to perform substantially the Participant's duties with Organovo (provided, however, that with respect to any Tier 1 or Tier 2 Employee, the failure to achieve individual or Company-based performance goals, budgets or targets shall not be deemed to be a failure of the Participant to perform his or her duties for purposes of this definition of Cause); (ii) the willful engaging by the Participant in illegal conduct or gross misconduct which is materially and demonstrably injurious to Organovo or Participant's ability to perform his or her duties with Organovo; (iii) conviction (including a plea of guilty or *nolo contendere* ) of a felony; (iv) a material violation of a material written policy of Organovo or any Affiliate, violation of which would be grounds for immediate dismissal under applicable Company policy; (v) failure to comply in any material respect with the Foreign Corrupt Practices Act, the Securities Act of 1933, as amended, the Securities Exchange Act of 1934, as amended, the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Truth in Negotiations Act, or any rules or regulations thereunder; (vi) a material breach of the restrictive covenants in Section 7(b) subject to the cure provisions provided in Section 7(b) of the Plan.

"Change in Control" means the effective date of the occurrence of any of the following events:

(i) any "person" (as such term is used in Sections 13(d) and 14(d) of the Exchange Act, including for purposes of clarity a "group" (within the meaning of Section 13(d)(3) of the Exchange Act)) becomes the "beneficial owner" (as such term is defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of Organovo representing more than thirty percent (30%) of the total Fair Market Value or total combined voting power of Organovo's then-outstanding securities entitled to vote generally in the election of Directors; provided, however, that a Change in Control shall not be deemed to have occurred if such degree of beneficial ownership results from any of the following: (A) an acquisition by any person or group who on the Effective Date is the beneficial owner of more than thirty percent (30%) of such voting power, (B) any acquisition directly from

Organovo, including, without limitation, pursuant to or in connection with a public offering of securities, (C) any acquisition by Organovo, (D) any acquisition by a trustee or other fiduciary under an employee benefit plan of a Participating Company or (E) any acquisition by an entity owned directly or indirectly by the shareholders of Organovo in substantially the same proportions as their ownership of the voting securities of Organovo; or

(ii) an Ownership Change Event (as defined below) or series of related Ownership Change Events (collectively, a "Transaction") in which the shareholders of Organovo immediately before the Transaction do not retain immediately after the Transaction direct or indirect beneficial ownership of more than fifty percent (50%) of the total combined voting power of the outstanding securities entitled to vote generally in the election of Directors or, in the case of an Ownership Change Event described in clause (iii) of that definition, the entity to which the assets of Organovo were transferred (the "Transferee"), as the case may be; or

(iii) a majority of members of the non-employee Incumbent Directors (as defined below) is replaced during any twelve (12)-month period; or

(iv) a liquidation, winding up or dissolution of the Company;

provided, however, that a Change in Control shall be deemed not to include an event described in subsection (i) until the earlier of (a) the person or group has two or more representatives on the Board of Directors or (b) the person or group becomes the "beneficial owner" (as such term is defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of Organovo representing more than fifty percent (50%) of the total Fair Market Value or total combined voting power of Organovo's then-outstanding securities entitled to vote generally in the election of Directors.

For purposes of subsections (i) and (ii), indirect beneficial ownership shall include, without limitation, an interest resulting from ownership of the voting securities of one or more corporations or other business entities which own Organovo or the Transferee, as the case may be, either directly or through one or more subsidiary corporations or other business entities.

In addition, for purposes of subsections (i) and (ii), the Committee shall determine whether multiple acquisitions of the voting securities of Organovo and/or multiple Ownership Change Events are related and to be treated in the aggregate as a single Change in Control, and its determination shall be final, binding and conclusive.

For purposes of this definition of Change in Control, "Incumbent Director" means a director who either (i) is a member of the Board as of the Effective Date or (ii) is elected, or nominated for election, to the Board with the affirmative votes of at least a majority of the Incumbent Directors at the time of such election or nomination (but excluding a director who was elected or nominated in connection with an actual or threatened proxy contest relating to the election of directors of Organovo or at the request of a person or group who is the "beneficial owner" (as such term is defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of Organovo representing more than five percent (5%) of the total Fair Market Value or total combined voting power of Organovo's then-outstanding securities entitled to vote generally in the election of Directors); and "Ownership Change Event" means the occurrence of any of the following with respect to Organovo: (i) the direct or indirect sale or exchange in a single or series of related transactions by the shareholders of Organovo of securities of Organovo representing more than fifty percent (50%) of the total combined voting power of Organovo's then outstanding securities entitled to vote generally in the election of Directors; (ii) a merger or consolidation in which Organovo is a party; or (iii) the sale, exchange, or transfer of all or substantially all of the assets or an exclusive license of all or substantially all of the intellectual property of Organovo (other than a sale, exchange or transfer to one or more subsidiaries of Organovo)."

"Disability" means incapacity due to physical or mental illness which has rendered the Participant unable effectively to carry out his/her duties and obligations to Organovo or unable to participate effectively and actively in the management of Organovo for a period of ninety (90) consecutive days or for shorter periods aggregating to one-hundred twenty (120) days (whether or not consecutive) during any consecutive twelve (12) months.

"Good Reason" as defined in the Severance Plan means, without the Participant's consent:

(i) In the case of a Tier 1, 2, 3, or 4 Employee, a material diminution in the Participant's Base Salary or Target Bonus Potential. This does not apply to a material diminution in the case of a Tier 1 or Tier 2 Employee resulting from a determination by both the CEO and the Compensation Committee that Organovo's financial condition is such that a reduction in compensation is appropriate and the reduction is applied uniformly to all Company officers;

(ii) a material diminution in the Participant's authority, duties, or responsibilities, which shall include (A) with respect to any Participant who is a member of the Board, any failure of the Board to appoint or the stockholders of Organovo to elect such Participant as a member of the Board, or any removal of Participant from the Board for reasons other than Cause, (B) with respect to any Participant who is a Tier 1 or Tier 2 Employee, removal from Organovo's Executive Team;

(iii) with respect to any Participant who is a Tier 1, 2, 3, or 4 Employee, a material diminution in the authority, duties, or responsibilities of the supervisor to whom the Participant is required to report;

(iv) any requirement that the Participant relocate, by more than fifty (50) miles, the principal location from which the Participant performs services for Organovo immediately prior to the termination of employment or the occurrence of the Change in Control; or

(v) in the case of any Participant who is a Tier 1, 2, 3, or 4 Employee, the occurrence of an event listed in subsections (i), (iii), or (iv) of the definition of "Change in Control".

***Death or Disability Benefits***

The outstanding equity awards held by our executive officers provide such executive officers with accelerated vesting if the executive officer terminates services with the Company as a result of death or disability. In order for an equity award to be eligible for accelerated vesting, the executive officer's death or disability must occur more than 90 days after the date the equity award was granted. With respect to performance-based equity awards, an executive officer will vest at target levels upon the executive officer's death or disability.

***Fiscal Year 2021 Executive Compensation***

As a result of such severance payments to our named executive officers pursuant to the Severance Plan if the Advisory Nominee Proposal is approved by our stockholders at the Annual Meeting, our Compensation Committee and our Board of Directors determined that it is in the best interests of the Company and its stockholders to: (i) freeze at Fiscal 2020 levels the salaries and target bonuses of our current named executive officers for their services rendered during Fiscal 2021 (i.e. the period from April 1, 2020 to March 31, 2021) and (ii) not grant our current named executive officers any equity awards for their services during Fiscal 2021.

***Potential Payments upon Termination or Change in Control***

As described in "Executive Compensation – Severance Plan Participation Agreements" we entered into Severance and Change in Control Plan Participation Agreements with our current named executive officers. The following table sets forth the amounts payable to each of our current named executive officers based on an assumed termination as of March 31, 2020 based upon certain designated events.

| Name | Cash Severance ($)(3) | Health and Other Insurance Benefits ($) | Stock Options (Unvested and Accelerated) ($)(1) | Restricted Stock Units (Unvested and Accelerated) ($)(2) | Fiscal Year 2020 Total ($)(3) |
|---|---|---|---|---|---|
| Taylor Crouch | | | | | |
| Termination for reasons other than Cause, death or Disability, or for Good Reason | $ 1,030,000 | $ 63,955 | $ - | $ - | $ 1,093,955 |
| Termination in connection with a Change of Control | $ 1,030,000 | $ 63,955 | $ - | $ 928,163 | $ 2,022,118 |
| Craig Kussman | | | | | |
| Termination for reasons other than Cause, death or Disability, or for Good Reason | $ 793,350 | $ 82,164 | $ - | $ - | $ 875,514 |
| Termination in connection with a Change of Control | $ 793,350 | $ 82,164 | $ - | $ 382,792 | $ 1,258,306 |
| Jennifer Kinsbruner Bush, JD (4) | | | | | |
| Termination for reasons other than Cause, death or Disability, or for Good Reason | $ 714,820 | $ 27,587 | $ - | $ - | $ 742,407 |
| Termination in connection with a Change of Control | $ 714,820 | $ 27,587 | $ - | $ 340,393 | $ 1,082,800 |

(1) Requires a change of control plus a qualifying termination of employment before vesting of options would be accelerated. The value of the accelerated options is determined by multiplying (a) the difference between the closing price of our common stock on the Nasdaq Capital Market on the assumed termination date and the applicable exercise price of each option, by (b) the number of unvested and accelerated options. No value is included in the table above for the acceleration of stock option awards because the

fair market value of our common stock on the Nasdaq Capital Market on March 31, 2020 was lower than each of the outstanding stock option awards held by our named executive officers.

(2) Requires a change of control plus a qualifying termination of employment before vesting of RSUs would be accelerated. The values of the accelerated RSUs were determined by multiplying the closing price of our common stock on the assumed termination date (i.e., March 31, 2020) on the Nasdaq Capital Market by the number of unvested and accelerated RSUs.

(3) Payable in a lump sum.

(4) On May 19, 2020, the Company amended its Severance and Change in Control Plan, pursuant to which Ms. Bush became a "Tier 1 Employee" (as defined in the Severance and Change in Control Plan).

***Payout in the Event of the Approval of the Advisory Nominees Proposal***

The Cooperation Agreement provides that the Company will enter into a Separation Agreement and Mutual Release (the "Officer Agreements") with each officer who resigns from the Company following the final adjournment of the 2020 Annual Meeting. Pursuant to the Officer Agreements, the Company will release each resigning officer, and each resigning officer will release the Company, from any and all claims that such party may have against the other for acts or omissions that occurred on or before the date of the respective Officer Agreement. It also clarifies that the appointment of the Advisory Nominees to the Board will constitute a "change in control" under the Company's Severance Plan, which will entitle each resigning officer to the severance benefits set forth in the Severance Plan. Pursuant to the terms of the Severance Plan, each of the executive officers is entitled to receive a cash severance payment equal to two times such executive officer's base salary, paid in a lump sum, plus a pro-rated target bonus for 2021 fiscal year, health benefit continuation for up to 18 months, and outplacement assistance for 18 months. Each executive officer will also receive full accelerated vesting of all outstanding equity awards and a one-year time period to exercise any stock options. Such resigning officers each also agreed to certain standstill provisions in the Officer Agreement

***Summary Compensation Table***

The following table summarizes the total compensation paid to or earned by each named executive officer for Fiscal 2020 and Fiscal 2019.

| Name and Principal Position | Year or Period | Salary ($) | Bonus ($) | Stock Awards ($)(1) | Option Awards ($)(2) | Non-Equity Incentive Plan Compensation ($)(3) | All Other Compensation ($)(4) | Total ($) |
|---|---|---|---|---|---|---|---|---|
| Taylor Crouch | 2020 | $ 515,000 | $ — | $ 989,893 | $ — | $ 128,750 | $ 9,766 | $ 1,643,409 |
| Chairman, Chief Executive Officer, President | 2019 | $ 515,000 | $ — | $ 438,773 | $ 1,734,057 | $ 226,600 | $ 9,778 | $ 2,924,208 |
| Craig Kussman | 2020 | $ 396,675 | $ — | $ 394,968 | $ — | $ 79,335 | $ 9,774 | $ 880,752 |
| Chief Financial Officer | 2019 | $ 396,675 | $ — | $ 136,859 | $ 867,029 | $ 142,803 | $ 9,717 | $ 1,553,083 |
| Jennifer Kinsbruner Bush, JD | 2020 | $ 357,410 | $ — | $ 353,392 | $ — | $ 71,482 | $ 9,799 | $ 792,083 |
| SVP, General Counsel, Corporate Secretary and Compliance Officer | 2019 | $ 357,410 | $ — | $ 129,256 | $ 846,940 | $ 139,390 | $ 9,639 | $ 1,482,635 |
| Steven Hughes, M.D. | 2020 | $ 178,779 (6) | $ 37,500 (7) | $ 593,936 | $ — | $ 66,885 | $ 436,392 (8) | $ 1,313,492 |
| Former Chief Medical Officer | 2019 | $ 266,667 (5) | $ 37,500 (7) | $ — | $ — | $ 117,000 | $ 11,968 | $ 433,135 |
| Paul Gallant | 2020 | $ 180,344 (9) | $ — | $ 287,069 | $ — | $ 57,605 | $ 309,126 (10) | $ 834,144 |
| Former General Manager | 2019 | $ 288,025 | $ — | $ 121,652 | $ 658,373 | $ 92,168 | $ 9,691 | $ 1,169,909 |

(1) These amounts represent the grant date fair value of time-based and performance-based restricted stock unit awards granted by the Company during the periods presented, determined in accordance with FASB ASC Topic 718. All awards are amortized over the vesting life of the award. For the assumptions used in our valuations, see "Note 5 – Stockholders' Equity" of the Notes to Consolidated Financial Statements in our Annual Report on Form 10-K for the year ended March 31, 2020, as filed with the SEC.

(2) These amounts represent the grant date fair value of time-based stock option awards granted by the Company during the periods presented, determined in accordance with FASB ASC Topic 718. All awards are amortized over the vesting life of the award. For the assumptions used in our valuations, see "Note 5 – Stockholders' Equity" of the Notes to Consolidated Financial Statements in our Annual Report on Form 10-K for the year ended March 31, 2020, as filed with the SEC.

(3) Includes amounts paid under the Company's Performance-Based Cash Incentive Award program based on the achievement of corporate and individual performance goals established and measured by the Compensation Committee.

(4) These amounts include matching contributions to the 401(k) Plan made for each named executive officer. The formula for determining the matching contributions is the same for named executive officers as it is for all salaried employees (and are subject to the same statutory maximum). Excludes payments made for the reimbursement of medical insurance premiums and life insurance available for all salaried employees. For more information regarding these benefits, see above under "Other Benefits." In addition, these amounts include travel allowances for Steven Hughes, per his hiring agreement.

(5) Dr. Hughes joined the Company as Chief Medical Officer effective July 31, 2018. This amount represents the prorated salary approved by the board of directors for Fiscal 2019.
(6) Dr. Hughes was terminated on August 30, 2020. This amount represents the prorated salary during Fiscal 2020.
(7) Dr. Hughes joined the Company as Chief Medical Officer effective July 31, 2018. Includes a $75,000 sign-on bonus earned by Dr. Hughes, of which $37,500 was paid in Fiscal 2019 and $37,500 was paid in Fiscal 2020.
(8) In addition to the matching contributions to the 401(k) plan and travel allowances discussed above, this represents amounts paid under the Severance Agreement with Dr. Hughes, including $400,000 of severance, $9,946 of COBRA, and $14,500 of outplacement services.
(9) Mr. Gallant was terminated on September 30, 2020. This amount represents the prorated salary during Fiscal 2020.
(10) In addition to the matching contributions to the 401(k) plan discussed above, this represents amounts paid under the Severance Agreement with Mr. Gallant, including $288,025 of severance and $14,500 of outplacement services.

***Outstanding Equity Awards at Fiscal Year End***

The following table shows certain information regarding outstanding equity awards as of March 31, 2020 for our named executive officers:

| | Option Awards | | | | Stock Awards | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. of Securities Underlying Unexercised Options (#) Exercisable | No. of Securities Underlying Unexercised Options (#) Unexercisable | Option Exercise Price ($) | Option Expiration Date | No. of Shares or Units of Stock That Have Not Vested (#) | Market Value of Shares or Units of Stock That Have Not Vested ($) | Equity Incentive Plan Awards: No. of Unearned Shares, Units or Other Rights That Have Not Vested (#) | Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested ($) |
| Taylor Crouch | 1,435,646 (6) | 652,566 | $ 2.73 | 4/24/2027 | | | 158,706 (9) | $ 65,069 |
| | 262,500 (10) | 337,500 | $ 1.84 | 5/24/2028 | 83,677 (11) | $ 34,308 | | |
| | 506,250 (12) | 843,750 | $ 1.135 | 8/15/2028 | | | | |
| | | | | | 2,021,428 (13) | $ 828,785 | | |
| Craig Kussman | 288,750 (4) | 41,250 | $ 4.01 | 8/23/2026 | 16,500 (5) | $ 6,765 | | |
| | | | | | 68,750 (7) | $ 28,188 | | |
| | 131,250 (10) | 168,750 | $ 1.84 | 5/24/2028 | 41,838 (11) | $ 17,154 | | |
| | 253,125 (12) | 421,875 | $ 1.135 | 8/15/2028 | | | | |
| | | | | | 806,550 (13) | $ 330,686 | | |
| Jennifer Kinsbruner Bush, JD | 150,000 (1) | — | $ 6.84 | 11/6/2024 | | | | |
| | 125,000 (2) | — | $ 4.92 | 6/4/2025 | | | | |
| | 93,750 (6) | 6,250 | $ 3.99 | 7/11/2026 | 3,125 (3) | $ 1,281 | | |
| | | | | | 6,562 (7) | $ 2,690 | | |
| | | | | | 59,375 (8) | $ 24,344 | | |
| | 123,959 (10) | 159,374 | $ 1.84 | 5/24/2028 | 39,514 (11) | $ 16,201 | | |
| | 253,125 (12) | 421,875 | $ 1.135 | 8/15/2028 | | | | |
| | | | | | 721,650 (13) | $ 295,877 | | |

(1) 25% of the stock options vested and became exercisable on September 2, 2015, with the remaining option shares vesting in equal quarterly amounts over the following three years.
(2) 25% of the stock options vested and became exercisable on June 4, 2016, with the remaining option shares vesting in equal quarterly amounts over the following three years.
(3) The RSUs began vesting and settle for shares of the Company's common stock equally over sixteen quarters for a total of 48 months beginning on May 15, 2016.
(4) 25% of the stock options vested and became exercisable on August 23, 2017, with the remaining option shares vesting in equal quarterly amounts over the next three years.
(5) 25% of the RSUs vested and settled for shares of the Company's common stock on August 23, 2017, with the remaining RSUs vesting and settling for shares in equal quarterly amounts over the next three years.
(6) 25% of the stock options vested and became exercisable on April 24, 2018 in the case of Mr. Crouch and May 15, 2017 in the case of Ms. Bush, with the remaining option shares vesting in equal quarterly amounts over the following three years.

(7) The RSUs began vesting and settle for shares of the Company's common stock equally over sixteen quarters for a total of 48 months beginning on June 27, 2017.

(8) 25% of the RSUs vested and settled for shares of the Company's common stock on November 15, 2017, with the remaining RSUs vesting and settling for shares in equal quarterly amounts over the next three years.

(9) On December 12, 2018, the Board of Directors amended the vesting criteria of a previously granted PBRSU. The vesting the performance-based RSU is divided into three separate tranches, each with independent vesting criteria. Based on the amendment to the vesting criteria, the remaining 158,706 units eligible to vest upon future performance were divided into three separate but equal tranches with independent vesting criteria based on the achievement of certain regulatory milestones. As of March 31, 2020, none of the amended tranches had vested.

(10) The stock options began vesting and become exercisable equally over sixteen quarters for a total of 48 months beginning on May 15, 2018.

(11) The RSUs began vesting and settle for shares of the Company's common stock equally over sixteen quarters for a total of 48 months beginning on May 15, 2018.

(12) 25% of the stock options vested and became exercisable on August 15, 2019, with the remaining option shares vesting on a quarterly basis over the next 12 quarters (for a total vesting period of 48 months from the Vesting Commencement Date).

(13) On July 2, 2019, the Compensation Committee approved Performance-Based Restricted Stock Unit Awards (the "PBRSU Retention Awards"). The PBRSU Retention Awards will vest in full upon the earlier of the Company's engagement in a pre-IND meeting with the FDA, twenty-four months from the grant-date, or a change in control. As of March 31, 2020, none of the awards had vested.

## REPORT OF THE AUDIT COMMITTEE

The following is the report of our Audit Committee with respect to our audited financial statements included in our Annual Report on Form 10-K for the fiscal year ended March 31, 2020, filed with the SEC on May 28, 2020 (the "Form 10-K"). The information contained in this report shall not be deemed to be "soliciting material" or to be "filed" with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that the Company specifically incorporates it by reference in such filing.

The Audit Committee currently consists of three directors, each of whom is an "independent director" as defined under the listing standards for the Nasdaq Capital Market and the rules and regulations of the SEC. The Audit Committee acts pursuant to a written charter that has been adopted by the Board of Directors. A copy of the charter is available on the Company's website at www.organovo.com.

The Audit Committee oversees our financial reporting process on behalf of the Board of Directors. Management has the responsibility for the financial statements and the reporting process, including internal control systems. Our independent registered public accounting firm, Mayer Hoffman, is responsible for expressing an opinion as to the conformity of our audited financial statements with generally accepted accounting principles.

***Review with Management***

The Audit Committee reviewed and discussed the audited financial statements with management of the Company.

***Review and Discussions with Independent Accountants***

The Audit Committee met with Mayer Hoffman to review the financial statements included in the Form 10-K. The Audit Committee discussed with a representative of Mayer Hoffman the matters required to be discussed by the Auditing Standard No. 1301, "Communicating with Audit Committees." In addition, the Audit Committee met with Mayer Hoffman, with and without management present, to discuss the overall scope of Mayer Hoffman's audit, the results of its examinations and the overall quality of the Company's financial reporting. The Audit Committee received the written disclosures and the letter from Mayer Hoffman required by Rule 3526 of the Public Company Accounting Oversight Board, Communication with Audit Committee Concerning Independence, and has discussed with Mayer Hoffman its independence, and satisfied itself as to the independence of Mayer Hoffman.

***Conclusion***

Based on the above review, discussions, and representations received, the Audit Committee recommended to the Board of Directors that the audited financial statements for the each of the fiscal years ended March 31, 2020 and 2019 be included in the Company's Form 10-K and filed with the SEC.

The Audit Committee of the Board of Directors:

*Carolyn Beaver (Chair)*
*Mark Kessel*
*Adam Stern*

## CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

During Fiscal 2020 and Fiscal 2019, there was no transaction or series of similar transactions to which we were or are a party in which the amount involved exceeded or exceeds the lesser of $120,000 or one percent of the average of our total assets at fiscal year-end for Fiscal 2020 and Fiscal 2019 and in which any of our directors or executive officers, any holder of more than 5% of any class of our voting securities or any member of the immediate family of any of the foregoing persons had or will have a direct or indirect material interest, other than (i) the transactions described below and (ii) the compensation arrangements with our executive officers and non-employee directors described in "Executive Compensation" and "Director Compensation," respectively.

***Collaboration Agreement with Viscient Biosciences, Inc.***

In November 2018, the Company entered into a research services Quote with Viscient Biosciences ("Viscient"), an entity for which Keith Murphy, a member of our Board, serves as the Chief Executive Officer and President. Mr. Murphy is also a 10% or greater stockholder of Viscient Biosciences. Under this Quote, the Company provided research services in the amount of $142,000, amended in April 2019 to include an additional $7,000 of services. As of March 31, 2019, the Company recognized revenue of $42,000 for services provided and the remaining amount of $107,000 was recognized as revenue in the year ended March 31, 2020. In November 2019, the Company entered into an agreement with Viscient to sell certain bioprinting equipment and a non-exclusive license to certain intellectual property for approximately $171,000, of which $101,000 was recognized as other income and $70,000 was recognized as revenue in the year ended March 31, 2020. In addition to the services provided by Organovo, Viscient has purchased primary human cell-based products from our subsidiary, Samsara. Pursuant to the terms of multiple Quotes, $128,000 and $96,000 was recognized as revenue in the year ended March 31, 2020 and 2019, respectively. There is approximately $111,000 of accounts receivable outstanding as of March 31, 2020 and $39,000 of accounts receivable outstanding as of March 31, 2019. The balance owing at March 31, 2020 was several months past due (as of that date). The Company and Viscient entered into a Settlement Agreement on June 15, 2020, under which Viscient agreed to pay the full amount due on the invoices in a series of payments to be made by or before October 22, 2020. The agreements and quotes with Viscient do not require the Company to make any payments to Viscient or Mr. Murphy.

Messrs. Stern, Cohen and Gobel (through the Methuselah Foundation and the Methuselah Fund) have invested funds through a convertible promissory note in Viscient, but do not serve as an employee, officer or director of Viscient.

The Company entered into the agreement with Viscient in the ordinary course of business and on terms and conditions it believes are as fair as those it offers and receives from non-related third parties. In addition, the Audit Committee approved the Company's transactions with Viscient in accordance with the Related Party Transaction Policy and Procedures described below.

***Related Party Transaction Policy and Procedures***

Pursuant to our Related Party Transaction Policy and Procedures, our executive officers, directors, and principal stockholders, including their immediate family members and affiliates, are prohibited from entering into a related party transaction with us without the prior consent of our Audit Committee or a committee of our independent directors. Any request for us to enter into a transaction with an executive officer, director, principal stockholder, or any of such persons' immediate family members or affiliates, in which the amount involved exceeds $120,000 must first be presented to our Audit Committee for review, consideration and approval. In approving or rejecting the proposed agreement, our Audit Committee will consider the relevant facts and circumstances available and deemed relevant, including, but not limited, to the risks, costs and benefits to us, the terms of the transaction, the availability of other sources for comparable services or products, and, if applicable, the impact on a director's independence. Our Audit Committee shall approve only those agreements that, in light of known circumstances, are in, or are not inconsistent with, our best interests, as our Audit Committee determines in the good faith exercise of its discretion.

## OTHER MATTERS

The Company is not aware of any matter to be acted upon at the Annual Meeting other than the matters described in this Proxy Statement. However, if any other matter properly comes before the Annual Meeting, the proxy holders will vote the proxies thereon in accordance with their best judgment on such matter.

## PROXY SOLICITATION

The Company will bear the expenses of calling and holding the Annual Meeting and the soliciting of proxies therefor. This Proxy Statement and the accompanying materials are being made available to stockholders, in accordance with SEC rules, by providing access to these documents on the internet instead of mailing printed copies. Most stockholders will not receive printed copies of the proxy materials unless requested. Instead, the notice provides instructions on how to access and review the proxy materials on the internet. The notice also provides instructions on how to cast your vote via the internet or by telephone. If you would like to receive a printed or email copy of our proxy materials, please follow the instructions for requesting the materials in the notice. The Company may consider the engagement of a proxy solicitation firm. Our directors, officers and employees may also solicit proxies by mail, telephone and personal contact, but they will not receive any additional compensation for these activities.

## STOCKHOLDER PROPOSALS FOR 2021 ANNUAL MEETING

Stockholders interested in submitting a proposal for consideration at our 2021 Annual Meeting must do so by sending the proposal to our Corporate Secretary at Organovo Holdings, Inc., 440 Stevens Ave, Suite 200, Solana Beach, CA 92075. Under the SEC's proxy rules, the deadline for submission of proposals to be included in our proxy materials for the 2021 Annual Meeting is March , 2021, which is not more than 120 days prior to the one-year anniversary of the date on which the Company first mailed its proxy materials or a notice of availability of proxy materials (whichever is earlier) for the 2020 Annual Meeting (i.e., July , 2020). Accordingly, in order for a stockholder proposal to be considered for inclusion in our proxy materials for the 2021 Annual Meeting, any such stockholder proposal must be received by our Corporate Secretary on or before March , 2021, and comply with the procedures and requirements set forth in Rule 14a-8 under the Securities Exchange Act of 1934, as well as the applicable requirements of our Bylaws. Any stockholder proposal received after March , 2021 will be considered untimely and will not be included in our proxy materials. In addition, stockholders interested in submitting a proposal outside of Rule 14a-8 must properly submit such a proposal in accordance with our Bylaws.

Our Bylaws require advance notice of business to be brought before a stockholders' meeting, including nominations of persons for election as directors. To be timely, notice to our Corporate Secretary must be received at our principal executive offices not less than 45 days but not more than 75 days prior to the one-year anniversary of the date on which the Company first mailed its proxy materials or a notice of availability of proxy materials (whichever is earlier) for the 2020 Annual Meeting (i.e., July , 2020) and must contain specified information concerning the matters to be brought before such meeting and concerning the stockholder proposing such matters. Therefore, to be presented at our 2021 Annual Meeting, such a proposal must be received by the Company on or after May , 2021 but no later than June , 2021. If the date of the 2021 Annual Meeting is advanced by more than 30 days, or delayed by more than 60 days, from the one-year anniversary date of the 2020 Annual Meeting, notice must be received no earlier than the 120th day prior to such Annual Meeting and not later than the close of business on the later of (i) the 90th day prior to such Annual Meeting or (ii) the 10th day following the day on which the public announcement of the date of such Annual Meeting is first made.

## HOUSEHOLDING OF ANNUAL MEETING MATERIALS

We have adopted “householding,” a procedure approved by the SEC under which stockholders who share an address will receive a single copy of the Notice of Internet Availability and, if applicable, the Annual Report, Proxy Statement and Notice. This procedure reduces printing costs and mailing fees, while also reducing the environmental impact of the distribution of documents related to the Annual Meeting. If you reside at the same address as another Organovo Holdings, Inc. stockholder and wish to receive a separate copy of the Notice of Internet Availability and, if applicable, the Annual Report, Proxy Statement and Notice, you may do so by making a written or oral request to: Organovo Holdings, Inc., 440 Stevens Ave, Suite 200, Solana Beach, CA 92075, Attn: Corporate Secretary, telephone (858) 224-1000. Upon your request, we will promptly deliver a separate copy to you. The Annual Report, Proxy Statement and Notice are also available at www.proxyvote.com.

Some brokers household proxy materials, delivering a single Proxy Statement or notice to multiple stockholders sharing an address unless contrary instructions have been received from the affected stockholders. Once you have received notice from your broker that they will be householding materials to your address, householding will continue until you are notified otherwise or until you revoke your consent. If, at any time, you no longer wish to participate in householding and would prefer to receive a separate Notice of Internet Availability and, if applicable the Annual Report, Proxy Statement and Notice, please notify your broker directly. You may also write to: Continental Stock Transfer and Trust, 1 State Street Plaza, 30th Floor, New York, NY 10004, Attention: Kevin Jennings, and include your name, the name of your broker or other nominee, and your account number(s). Any stockholders who share the same address and currently receive multiple copies of the Notice of Internet Availability and, if applicable, the Annual Report, Proxy Statement and Notice who wish to receive only one copy in the future may contact their bank, broker, or other holder of record, or Organovo Holdings, Inc. at the contact information listed above, to request information about householding.

## ANNUAL REPORT ON FORM 10-K

The Company filed an Annual Report on Form 10-K for the year ended March 31, 2020 with the Securities and Exchange Commission. A copy of the Company's Annual Report on Form 10-K will also be made available (without exhibits), free of charge, to interested stockholders upon written request to Organovo Holdings, Inc., 440 Stevens Ave, Suite 200, Solana Beach, CA 92075, Attention: Corporate Secretary. The Annual Report on Form 10-K is not incorporated into this Proxy Statement and is not considered to be proxy-soliciting material.

BY ORDER OF THE BOARD OF DIRECTORS

Jennifer Bush
*Senior Vice President, General Counsel, Corporate Secretary and Compliance Officer*

ORGANOVO HOLDINGS, INC.
440 STEVENS AVENUE
SUITE 200
SOLANA BEACH, CA 92075

**VOTE BY INTERNET**
*Before The Meeting* - Go to **www.proxyvote.com**

Use the Internet to transmit your voting instructions and for electronic delivery of information. Vote by 11:59 p.m. Eastern Time on September , 2020. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

*During The Meeting*–Go to **www.virtualshareholdermeeting.com/ONVO2020AM**

You may attend the meeting via the Internet and vote during the meeting. Have the information that is printed in the box marked by the arrow available and follow the instructions.

**VOTE BY PHONE - 1-800-690-6903**
Use any touch-tone telephone to transmit your voting instructions. Vote by 11:59 p.m. Eastern Time on September , 2020. Have your proxy card in hand when you call and then follow the instructions.

**VOTE BY MAIL**
Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided or return it to Vote Processing, c/o Broadridge, 51 Mercedes Way, Edgewood, NY 11717.

TO VOTE, MARK BLOCKS BELOW IN BLUE OR BLACK INK AS FOLLOWS:

D21533-P43101 KEEP THIS PORTION FOR YOUR RECORDS
DETACH AND RETURN THIS PORTION ONLY

**THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.**

**ORGANOVO HOLDINGS, INC.**

**The Board of Directors recommends you vote FOR the following:**

| | | For All | Withhold All | For All Except |
|---|---|---|---|---|
| 1. | Election of Directors | ☐ | ☐ | ☐ |

To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.

_____

**Nominees:**

01) Keith E. Murphy
02) Adam Stern

**The Board of Directors recommends you vote FOR proposals 2, 3 and 4.**

| | | For | Against | Abstain |
|---|---|---|---|---|
| 2. | To approve, on an advisory basis, the Board's appointment of three additional directors to our Board immediately following the final adjournment of the 2020 Annual Meeting. | ☐ | ☐ | ☐ |
| 3. | To ratify the appointment of Mayer Hoffman McCann P.C. as our independent registered public accounting firm for the fiscal year ending March 31, 2021. | ☐ | ☐ | ☐ |
| 4. | To approve, on an advisory basis, the compensation of our named executive officers. | ☐ | ☐ | ☐ |

**NOTE:** Such other matters as may properly come before the annual meeting or any adjournment thereof.

Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.

| Signature [PLEASE SIGN WITHIN BOX] | Date | Signature (Joint Owners) | Date |
|---|---|---|---|
| | | | |

**Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:**
The Notice and Proxy Statement and Annual Report are available at www.proxyvote.com.

D21534-P43101

**PRELIMINARY PROXY CARD - SUBJECT TO COMPLETION**

**ORGANOVO HOLDINGS, INC.**
**Annual Meeting of Stockholders**
**September , 2020, 9:00 a.m. Pacific Time**
**This proxy is solicited by the Board of Directors**

The undersigned hereby appoints Taylor Crouch and Jennifer Bush, or either of them, as proxies, each with the power to appoint (his/her) substitute, and hereby authorizes them to represent and to vote, as designated on the reverse side of this proxy, all of the shares of Common Stock of ORGANOVO HOLDINGS, INC. that the undersigned is entitled to vote at the Annual Meeting of Stockholders to be held at 9:00 a.m. Pacific Time on September , 2020, via live webcast at www.virtualshareholdermeeting.com/**ONVO2020AM** and any adjournment or postponement thereof.

This proxy, when properly executed, will be voted in the manner directed herein. If no such direction is made, this proxy will be voted in accordance with the recommendations of the Board of Directors of Organovo Holdings, Inc. "FOR" all proposals.

**Continued and to be signed on reverse side**