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

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

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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: \_\_\_\_\_
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    - (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: \_\_\_\_\_
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  - 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: \_\_\_\_\_
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**Organovo Holdings, Inc.**  
**6275 Nancy Ridge Dr., Suite 110**  
**San Diego, CA 92121**

July \_\_, 2019

Dear Stockholder:

You are cordially invited to attend this year's Annual Meeting of Stockholders of Organovo Holdings, Inc. on Thursday, September 5, 2019 at 9:00 a.m. (local time). The meeting will be held at the Company's headquarters at 6275 Nancy Ridge Drive, Suite 110, San Diego, California 92121.

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 \_\_, 2019, 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, 2019, 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 2019 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 2019 Annual Meeting of Stockholders and Proxy Statement. Following the formal business of the meeting, we will report on our operations and respond to questions from stockholders.

Whether or not you plan to 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 attend the meeting you will have the right to revoke your proxy and vote your shares in person. 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.

We look forward to seeing you at the Annual Meeting.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Taylor J. Crouch". The signature is fluid and cursive, with a large, stylized "C" at the end.

Taylor Crouch  
*Chief Executive Officer and President*

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**ORGANOVO HOLDINGS, INC. NOTICE OF 2019 ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON SEPTEMBER 5, 2019**

To Our Stockholders:

The 2019 Annual Meeting of Stockholders (the "Annual Meeting") of Organovo Holdings, Inc. ("Organovo" or the "Company") will be held at the Company's headquarters at 6275 Nancy Ridge Drive, Suite 110, San Diego, California 92121 on Thursday, September 5, 2019 at 9:00 a.m. (local time) for the following purposes:

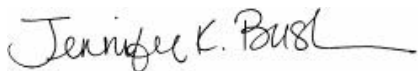
1. To elect Taylor Crouch and Mark Kessel as Class II directors to hold office until the 2022 Annual Meeting of Stockholders and until their successor(s) are elected and qualified;
2. To ratify the appointment of Mayer Hoffman McCann P.C. as our independent registered public accounting firm for the fiscal year ending March 31, 2020;
3. To hold a non-binding advisory vote on the compensation of our named executive officers;
4. To approve, on an advisory and non-binding basis, the frequency of the advisory vote on the Company's executive compensation of one, two or three years;
5. To approve the proposal to authorize the Company's Board of Directors, in its discretion but in no event later than the date of the 2020 Annual Meeting of Stockholders, to amend the Company's Certificate of Incorporation, as previously amended, to effect a reverse stock split of the Company's common stock, at a ratio in the range of 1-for-5 to 1-for-20, such ratio to be determined by the Board of Directors and included in a public announcement;
6. 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 through 5 listed above. Stockholders of record at the close of business on July 8, 2019 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 6275 Nancy Ridge Dr., Suite 110, San Diego, California 92121.

All stockholders are invited to attend the Annual Meeting in person. 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 2019 Annual Meeting of Stockholders, Proxy Statement and Annual Report are available at [www.proxydocs.com/onvo](http://www.proxydocs.com/onvo).

By Order of the Board of Directors



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

July \_\_, 2019

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## 2019 Proxy Statement Summary

To assist you in reviewing the Proxy Statement for the Organovo Holdings, Inc. (“Organovo” or the “Company”) 2019 Annual Meeting of Stockholders (the “Annual Meeting” or “2019 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, 2019. We encourage you to vote your shares at the Annual Meeting. If you are unable to attend the Annual Meeting in person, we encourage you to submit a proxy so that your shares will be represented and voted.

### Annual Meeting of Stockholders

Date and Time:	September 5, 2019 at 9:00 a.m. (local time)
Place:	Organovo, Inc. 6275 Nancy Ridge Drive, Suite 110 San Diego, California 92121
Record Date:	July 8, 2019
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.
Admission:	You are entitled to attend the Annual Meeting if: (i) you were an Organovo stockholder as of the Record Date (or you are attending as a named representative of a stockholder or you are an immediate family member attending as a guest of a stockholder); and (ii) you present proof of ownership of Organovo common stock as of the Record Date. In addition, all stockholders, immediate family member guests and representatives will be required to present government-issued photo identification (e.g., driver’s license or passport) to gain admission to the Annual Meeting. Please note that if your shares are held of record by a broker, bank, trustee, or nominee and you wish to vote at the Annual Meeting, you will not be permitted to vote in person unless you first obtain a proxy issued in your name from the broker, bank, trustee or nominee.

*Please be advised that all purses, briefcases, bags, etc. may be subject to inspection. The use of mobile phones, pagers, recording or photographic equipment, tablets and/or computers is not permitted in the meeting room during the Annual Meeting.*

## Proposals and Voting Recommendations

	Board Vote Recommendation	Page References (for more detail)
<b>Proposals:</b>		
(1) Election of two Class II directors to hold office until the 2022 Annual Meeting of Stockholders and until their successor(s) are elected and qualified.	<b>FOR NOMINEES</b>	5 - 6
(2) Ratification of appointment of Mayer Hoffman McCann P.C. as our independent registered public accounting firm for the fiscal year ending March 31, 2020.	<b>FOR</b>	7 - 8
(3) To approve, on an advisory and non-binding basis, the compensation of our named executive officers.	<b>FOR</b>	9
(4) To approve, on an advisory and non-binding basis, the frequency of the advisory vote on the Company's executive compensation of one, two, or three years.	<b>"ONE YEAR"</b>	10
(5) To approve a proposal to authorize the Board to amend the Company's Certificate of Incorporation to effect a reverse stock split.	<b>FOR</b>	11 - 16

### 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	9
Number of Independent Directors	8
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 2018 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 four independent directors in accordance with the rules and regulations established by the Securities and Exchange Commission and the Nasdaq Stock 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 Marsh & McLennan Agency LLC (“Marsh”) as its independent compensation consultant, to assist it in evaluating the Company’s executive compensation program for the fiscal year ending March 31, 2019 (“FY 2019”) 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

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**ORGANOVO HOLDINGS, INC.**  
6275 Nancy Ridge Dr., Suite 110,  
San Diego, California 92121

**PROXY STATEMENT FOR THE 2019 ANNUAL MEETING OF STOCKHOLDERS TO BE HELD SEPTEMBER 5, 2019**

**This Proxy Statement, along with a proxy card, is being made available to our stockholders on or about July \_\_, 2019**

**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 2019 Annual Meeting of Stockholders (the “Annual Meeting”) to be held on Thursday, September 5, 2019 at Organovo’s headquarters at 6275 Nancy Ridge Drive, Suite 110, San Diego, California 92121 at 9:00 a.m. (local time) and at any adjournments or postponements thereof. 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, 2019 (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 8, 2019 (the “Record Date”) are entitled to vote on the proposals presented at the Annual Meeting. As of July 8, 2019, we had 130,279,463 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 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.

**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 share 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 Annual Meeting, you will not be permitted to vote in person 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 matters to be considered at the Annual Meeting are 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 10 days preceding the day of the Annual Meeting.

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

1. To elect Taylor Crouch and Mark Kessel as Class II directors to hold office until the 2022 Annual Meeting of Stockholders and until their respective successor(s) are elected and qualified;
2. To ratify the appointment of Mayer Hoffman McCann P.C. as our independent registered public accounting firm for the fiscal year ending March 31, 2020;
3. To hold a non-binding advisory vote on the compensation of our named executive officers;
4. To approve, on an advisory and non-binding basis, the frequency of the advisory vote on the Company's executive compensation of one, two, or three years; and
5. To approve the proposal to authorize the Company's Board of Directors, in its discretion but in no event later than the date of the 2020 Annual Meeting of Stockholders, to amend the Company's Certificate of Incorporation, as previously amended, to effect a reverse stock split of the Company's common stock, at a ratio in the range of 1-for-5 to 1-for-20, such ratio to be determined by the Board of Directors and included in a public announcement

Our Board of Directors recommends a vote **FOR** the director nominees and **FOR** proposals 2, 3 and 5 and for **"ONE YEAR"** with respect to proposal 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 II directors will be elected by a plurality of the votes cast in person or by proxy at the 2019 Annual Meeting assuming a quorum is present, which means that the director nominee receiving the highest number of "FOR" votes will be elected. 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.

### *Proposal 2 – Ratification of Independent Registered Public Accounting Firm*

If a quorum is present, the affirmative vote of a majority of the votes cast at the 2019 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.

### *Proposal 3 – 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 2019 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.

### *Proposal 4 – Approval, on an advisory and non-binding basis, of the frequency of the advisory vote on the Company's executive compensation of one, two or three years.*

The option of one year, two years or three years that receives the highest number of votes cast by stockholders will be the frequency for the advisory vote on Company's executive compensation that has been selected by stockholders. 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 this proposal and will therefore have no effect on the outcome of the vote. However, because this vote is advisory and is not binding on our Board, the Board may decide that it is in the best interests of our stockholders and the Company to hold an advisory vote on executive compensation more or less frequently than the option approved by our stockholders.

#### ***Proposal 5 – Approval of Reverse Stock Split***

The affirmative vote of the holders of a majority of the outstanding shares of our common stock entitled to vote at the 2019 Annual Meeting is required for the approval of this proposal. Abstentions and broker non-votes will be counted as present for purposes of determining the presence of a quorum. Abstentions and broker non-votes, however, will not be considered as votes cast for or against this proposal, and as a result, abstentions and broker non-votes will have the same effect as a vote against this

#### **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 4, 2019.
- **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 4, 2019.
- **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 in person at the Annual Meeting. Even if you plan to attend the 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 Annual Meeting.

If your shares are held in street name, please follow the separate voting instructions you receive from your broker, bank, trustee or other nominee.

#### **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 ratifying Mayer Hoffman McCann, P.C. as the Company's independent registered public accounting firm for the fiscal year ended March 31, 2020, (iii) in favor of the non-binding advisory vote on the compensation of our named executive officers, (iv) in favor of the approval, on an advisory and non-binding basis, of the frequency of the advisory vote on the Company's executive compensation of one year; (v) in favor of approving a proposal to authorize the Board to amend the Company's Certificate of Incorporation to effect a reverse stock split; 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 2 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 II directors, Proposal 3 the non-binding advisory vote on the compensation of our named executive officers, Proposal 4 the approval, on an advisory and non-binding basis, of the frequency of the advisory vote on the Company's executive compensation of one, two or three years, nor Proposal 5 approving a proposal to authorize the Board to amend the Company's Certificate of Incorporation to effect a reverse stock split 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 in person unless you first obtain a proxy issued in your name 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 4, 2019, (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 4, 2019), or (iv) by attending the Annual Meeting and voting in person. Attendance at the 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, if you have obtained a legal proxy from your bank, broker or other agent giving you the right to vote your shares, by attending the Annual Meeting and voting in person.

**Voting Results**

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

## 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 9 directors, having terms expiring at the respective annual meetings of stockholders listed below:

2019 Annual Meeting	2020 Annual Meeting	2021 Annual Meeting
Taylor Crouch	Robert Baltera, Jr.	Kirk Malloy, Ph.D.
Mark Kessel	James Glover	David Shapiro, M.D.
Tamar Howson	Richard Maroun	Carolyn Beaver

### *Board Restructuring*

Based on its annual review of the size of the Board, as well as the Company's focus on streamlining operating expenses, the Board has determined that at this time, the optimum Board size is a total of six directors, of which five will be independent, and has elected to reduce the number of directors continuing to serve following the 2019 Annual Meeting and reorganize the classes and committee roles of the continuing directors. Although the Company does not have any formal policy on term limits, in connection with the Board restructuring, the Company's longest tenured directors determined to step down from the Board following completion of certain succession planning activities, including the successful onboarding of new directors with required skill sets. Accordingly, Mr. Glover and Mr. Baltera have submitted letters of resignation, effective immediately prior to the Annual Meeting, and Ms. Howson is not standing for reelection (such that her term will also end immediately prior to the Annual Meeting). To balance the Board class, the Board has also moved Dr. Shapiro to serve as a Class III director, with a term expiring at the 2020 Annual Meeting of Stockholders.

### *Proposal to Elect Two Directors to Hold Office for Three Years until the 2022 Annual Meeting*

Therefore, in connection with the Board Restructuring, the Board, upon the recommendation of the Nominating and Corporate Governance Committee has nominated for election at the Annual Meeting the following slate of two nominees to hold office for three years until the 2022 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 ?
Taylor Crouch	59	2017	CEO and President	-Leadership -Industry -Strategy	N/A	No
Mark Kessel	78	2016	Partner of Symphony Capital, LLC, a private equity firm	-Capital Markets -Industry -Strategy	-Compensation Committee -Nominating and Corporate Governance Committee	Yes

### *Additional Information*

For additional information about each nominee and each of the other directors serving on our Board, please see pages 17-21 in this Proxy Statement.

### *Vote Required*

Under our Certificate of Incorporation and Bylaws, the Class II directors will be elected by a plurality of the votes cast in person or by proxy at the 2019 Annual Meeting assuming a quorum is present, which means that the director nominees receiving the highest number of "FOR" votes will be elected. 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.

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.

*Board Recommendation*

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR AND SOLICITS PROXIES IN FAVOR OF THE ELECTION OF TAYLOR CROUCH AND MARK KESSEL.**

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 Taylor Crouch and Mark Kessel.

## PROPOSAL 2: 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, 2020. Representatives of Mayer Hoffman are expected to be present at the 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, 2020. 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 2019 and Fiscal 2018, 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 2019 and Fiscal 2018.

	<u>Fiscal Year 2019</u>	<u>Fiscal Year 2018</u>
Audit fees	\$ 345,000	\$ 339,000
Audit-related fees	—	—
Tax Fees	\$ 28,000	\$ 33,000
All other fees	—	—
Total	<u>\$ 373,000</u>	<u>\$ 372,000</u>

*Audit Fees:* For the fiscal years ended March 31, 2019 and 2018, 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, 2019 and 2018, 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, 2019 and 2018, 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, 2019 and 2018, 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 2019 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, 2020.**



### **PROPOSAL 3: 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 2019 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 2019 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.**

#### PROPOSAL 4: ADVISORY VOTE ON FREQUENCY OF ADVISORY VOTE ON EXECUTIVE COMPENSATION

The Company is seeking an advisory vote from its stockholders on the frequency of the advisory vote on executive compensation, commonly known as “say-when-on-pay”.

Section 14A of the Exchange Act requires that we conduct a stockholder advisory vote of this nature at least once every six years. This proposal provides our stockholders with the opportunity to cast an advisory vote indicating their preference on how often the Company should include an advisory vote on executive compensation (Say-on-Pay) in its proxy materials for future stockholder meetings. By voting on this proposal, stockholders may indicate their preference for the Company to conduct the Say-on-Pay vote every year, every two years or every three years or stockholders may abstain from voting. Our Board of Directors believes that a frequency of every year for the Say-on-Pay vote will best serve the Company and its stockholders for the following reasons:

- allows stockholders to provide direct input on the Company’s compensation philosophy, policies and practices as disclosed in the proxy statement each year;
- provides the Compensation Committee with the opportunity to evaluate its compensation decisions by taking into account timely feedback provided by stockholders;
- and is consistent with the Company’s policy of facilitating communications of stockholders with the Board of Directors and its various committees, including the Compensation Committee.

The frequency of future stockholder votes on Say-on-Pay is nonbinding. But our Board of Directors and Compensation Committee will carefully consider the opinion expressed by our stockholders on this proposal in choosing the frequency of future advisory votes on executive compensation.

#### *Vote Required*

Please mark your proxy card to reflect your preference on this proposal or your decision to abstain. A plurality of votes cast on this proposal will determine the frequency selected by stockholders.

The approval of this proposal is not a condition to the approval of any other proposals submitted to the stockholders.

#### *Board Recommendation*

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE, ON AN ADVISORY BASIS, FOR HOLDING AN ADVISORY VOTE ON EXECUTIVE COMPENSATION EVERY YEAR BY SELECTING “ONE YEAR”.**

## PROPOSAL 5: APPROVAL OF THE REVERSE STOCK SPLIT

Our Board, on July 8, 2019, unanimously adopted resolutions approving, declaring advisable and recommending to our stockholders for their approval a second amendment to our Certificate of Incorporation (the “Amendment”) to effect a reverse stock split of our issued and outstanding Common Stock (the “Reverse Stock Split”) with a ratio in the range of 1-for-5 and 1-for-20, such ratio to be determined by our Board in its discretion. The Reverse Stock Split will also affect outstanding options and warrants, as described in “-Effect on Equity Compensation Plans and Outstanding Options and Warrants” below. Approval of this proposal will grant the Board the authority, without further action by the stockholders, to carry out the Reverse Stock Split any time after the approval of the Amendment but prior to the date of our 2020 annual meeting of stockholders (the “2020 Annual Meeting”), with the exact exchange ratio and timing to be determined at the discretion of the Board and set forth in a public announcement. Even if our stockholders approve this proposal, our Board may determine in its discretion not to effect the Reverse Stock Split and to abandon the Amendment to implement the Reverse Stock Split prior to the time the Amendment is filed and becomes effective.

If approved, this proposal would approve the Amendment set forth in [Appendix A](#). The text of the proposed Amendment to effect the Reverse Stock Split is subject to revision to include such changes as may be required by the Secretary of State of the State of Delaware and as our Board deems necessary and advisable to effect the proposed Amendment. Stockholders are urged to carefully read [Appendix A](#).

### **Background**

Our Common Stock is currently listed on the Nasdaq Global Market under the symbol “ONVO.” The continued listing requirements of the Nasdaq Global Market provide, among other things, that our common stock must not have a closing bid price under \$1.00 for 30 consecutive business days.

On June 25, 2019, we received a written notice from Listing Qualifications Staff of the Nasdaq Stock Market LLC (“Nasdaq”) notifying us that the closing bid price for our common stock had been below \$1.00 for the last 30 consecutive business days and that we were therefore not in compliance with the minimum bid price requirement for continued inclusion on the Nasdaq Global Market under Nasdaq Listing Rule 5450(a)(1).

To regain compliance with the minimum bid price requirement, our common stock must have a closing bid price of at least \$1.00 for a minimum of ten days within the 180-day period from the date of the bid-price notice, or by December 23, 2019. In the event that our common stock does not close at a bid price of at least \$1.00 for a minimum of ten days in the first 180-day period, we may be eligible for a second 180-day period to comply, provided that we comply with the continued listing requirement for market value of publicly held shares and all other initial listing standards for Nasdaq, among other requirements.

Our Board determined that the continued listing of our Common Stock on the Nasdaq Global Market is beneficial for our stockholders. If our Common Stock is delisted from the Nasdaq Global Market, our Board believes that the trading market for our Common Stock could become significantly less liquid, which could reduce the trading price of our Common Stock and increase the transaction costs of trading in shares of our Common Stock.

The purpose of the Reverse Stock Split is to decrease the total number of shares of Common Stock outstanding and proportionately increase the market price of the Common Stock above \$1.00 per share in order to meet the continuing listing requirements of the Nasdaq Global Market. Our Board intends to effect the Reverse Stock Split only if it believes that a decrease in the number of shares outstanding is in the best interests of the Company and our stockholders, and is likely to improve the trading price of our Common Stock and improve the likelihood that we will be allowed to maintain our continued listing on the Nasdaq Global Market. Accordingly, our Board approved the Reverse Stock Split in order to help ensure that the share price of our Common Stock meets the continued listing requirements of the Nasdaq Global Market.

Our Board, on July 8, 2019, unanimously adopted resolutions approving, declaring advisable and recommending to our stockholders for their approval the Amendment to effect the Reverse Stock Split with a ratio in the range of 1-for-5 and 1-for-20, such ratio to be determined by the Board and included in a public announcement, with respect to the issued and outstanding Common Stock of the Company. The Reverse Stock Split will also affect outstanding options and warrants, as described in “-Effect on Equity Compensation Plans and Outstanding Options and Warrants” below. Approval of this proposal will grant the Board the authority, without further action by the stockholders, to carry out the Reverse Stock Split any time after the approval of the Amendment but prior to the date of our 2020 Annual Meeting, with the exact exchange ratio and timing to be determined at the discretion of the Board and set forth in a public announcement. Even if our stockholders approve this proposal, our Board may determine in its discretion not to effect the Reverse Stock Split and to abandon the Amendment to implement the Reverse Stock Split prior to the time the Amendment is filed and becomes effective.

***Effective Time of the Reverse Stock Split***

If this proposal is approved and our Board determines to effect the Reverse Stock Split, we will file the proposed Amendment with the Secretary of State of the State of Delaware. The Reverse Stock Split will become effective at the time the Amendment is filed with the Secretary of State of Delaware and becomes effective, with the exact timing to be determined at the discretion of our Board.

If this proposal is approved, no further action on the part of stockholders would be required to either effect or abandon the Reverse Stock Split. If our Board does not implement the Reverse Stock Split on or before the date of our 2020 Annual Meeting, the authority granted in this proposal to implement the Reverse Stock Split will terminate and the Amendment to effect the Reverse Stock Split will be abandoned. Our Board reserves its right to elect not to proceed and abandon the Reverse Stock Split if it determines, in its sole discretion, that this proposal is no longer in the best interests of our stockholders.

***Reasons for the Reverse Stock Split***

The principal purpose of the Reverse Stock Split is to decrease the total number of shares of Common Stock outstanding and proportionately increase the market price of the Common Stock above \$1.00 per share in order to meet the continuing listing minimum bid price requirements of the Nasdaq Global Market. Delisting from Nasdaq would adversely affect our ability to raise additional financing through the public or private sale of equity securities and would significantly affect the ability of investors to trade our securities. Delisting would also negatively affect the value and liquidity of our Common Stock because alternatives, such as the OTC Bulletin Board and the pink sheets, are generally considered to be less efficient markets. Our Board intends to effect the Reverse Stock Split only if it believes that a decrease in the number of shares outstanding is in the best interests of the Company and our stockholders and is likely to improve the trading price of our Common Stock and improve the likelihood that we will be allowed to maintain our continued listing on the Nasdaq Global Market. Accordingly, our Board has approved the Reverse Stock Split in order to help ensure that the share price of our Common Stock meets the continued listing requirements of the Nasdaq Global Market.

***Board Discretion to Implement the Reverse Stock Split***

Our Board believes that stockholder approval of a range of Reverse Stock Split ratios (rather than a single exchange ratio) is in the best interests of our stockholders because it provides the Board with the flexibility to achieve the desired results of the Reverse Stock Split and because it is not possible to predict market conditions at the time the Reverse Stock Split would be implemented. If stockholders approve this proposal, the Board would carry out a reverse stock split only upon the Board's determination that a reverse stock split would be in the best interests of our stockholders at that time. The Board would then set the ratio for the Reverse Stock Split within the range approved by stockholders and in an amount it determines is advisable and in the best interests of the stockholders considering relevant market conditions at the time the Reverse Stock Split is to be implemented. In determining the Reverse Stock Split ratio, following receipt of stockholder approval, our Board may consider numerous factors including:

- the historical and projected performance of our Common Stock;
- general economic and other related conditions prevailing in our industry and in the marketplace;
- the projected impact of the Reverse Stock Split ratio on trading liquidity in our Common Stock and our ability to maintain continued listing on the Nasdaq Global Market;
- our capitalization (including the number of shares of Common Stock issued and outstanding);
- the then-prevailing trading price for our Common Stock and the volume level thereof; and
- the potential devaluation of our market capitalization as a result of the Reverse Stock Split.

Our Board intends to select a reverse stock split ratio that it believes would be most likely to achieve the anticipated benefits of the Reverse Stock Split.

***Certain Risks Associated with the Reverse Stock Split***

Before voting on this proposal, stockholders should consider the following risks associated with effecting the Reverse Stock Split:

- Although we expect that the Reverse Stock Split will result in an increase in the market price of our Common Stock, we cannot assure you that the Reverse Stock Split, if effected, will increase the market price of our Common Stock in

proportion to the reduction in the number of shares of our Common Stock outstanding or result in a permanent increase in the market price. The effect that the Reverse Stock Split may have upon the market price of our Common Stock cannot be predicted with any certainty, and the history of similar reverse stock splits for companies in similar circumstances to ours is varied. The market price of our Common Stock is dependent on many factors, including our progress in our tissue development programs, business and financial performance, general market conditions, prospects for future growth and other factors detailed from time to time in the reports we file with the SEC. Accordingly, the total market capitalization of our Common Stock after the proposed Reverse Stock Split may be lower than the total market capitalization before the proposed Reverse Stock Split and, in the future, the market price of our Common Stock following the Reverse Stock Split may not exceed or remain higher than the market price prior to the proposed Reverse Stock Split.

- Even if our stockholders approve the Reverse Stock Split and the Reverse Stock Split is effected, there can be no assurance that we will continue to meet the continued listing requirements of the Nasdaq Global Market.
- The Reverse Stock Split may result in some stockholders owning “odd lots” of less than 100 shares of Common Stock on a post-split basis. These odd lots may be more difficult to sell, or require greater transaction costs per share to sell, than shares in “round lots” of even multiples of 100 shares.
- Although the Reverse Stock Split will not, by itself, have any immediate dilutive effect on stockholders, the proportion of shares owned by stockholders relative to the number of shares authorized for issuance will decrease because the number of authorized shares of Common Stock would remain unchanged. As a result, additional authorized shares of Common Stock would become available for issuance at such times and for such purposes as the Board may deem advisable without further action by stockholders, except as required by applicable law or stock exchange rules. To the extent that additional authorized shares of Common Stock are issued in the future, such shares could be dilutive to existing stockholders of the Company by decreasing such stockholders’ percentage of equity ownership in the Company. See “- Potential Anti-Takeover Effect” below for more information on potential anti-takeover effects of the Reverse Stock Split.
- Although our Board believes that the decrease in the number of shares of Common Stock outstanding as a consequence of the Reverse Stock Split and the anticipated increase in the market price of Common Stock could encourage interest in our Common Stock and possibly promote greater liquidity for stockholders, such liquidity could also be adversely affected by the reduced number of shares outstanding after the Reverse Stock Split.

#### ***Principal Effects of the Reverse Stock Split***

If the Reverse Stock Split is approved and effected with respect to the issued and outstanding Common Stock, each holder of Common Stock outstanding immediately prior to the effectiveness of the Reverse Stock Split will own a reduced number of shares of Common Stock upon effectiveness of the Reverse Stock Split. The Reverse Stock Split would be effected simultaneously for all outstanding shares of Common Stock at the same exchange ratio. Except for adjustments that may result from the treatment of fractional shares (as described below), the Reverse Stock Split would affect all stockholders uniformly and would not change any stockholder’s percentage ownership interest in the Company. The relative voting rights and other rights and preferences that accompany the shares of Common Stock will not be affected by the Reverse Stock Split. Shares of Common Stock issued pursuant to the Reverse Stock Split will remain fully paid and nonassessable.

The Reverse Stock Split will not affect the number of authorized shares of Common Stock, which is currently 200,000,000 shares. The Reverse Stock Split will have no effect on the number of authorized shares of preferred stock or the par value of the preferred stock.

#### ***Effect on Equity Compensation Plans and Outstanding Options and Warrants***

If the Reverse Stock Split is approved and effected, the total number of shares of Common Stock reserved for issuance under our 2012 Equity Incentive Plan and our Inducement Awards (collectively, the “Plan and Awards”), would be reduced in proportion to the ratio selected by our Board. As of July 8, 2019, there were a total of 12,020,687 shares of Common Stock reserved for issuance upon the exercise of stock options outstanding under the Plan and Awards, a total of 2,324,438 shares of Common Stock reserved for issuance upon vesting of restricted stock units, 6,186,605 shares of Common Stock reserved for the issuance of performance-based restricted stock units, 6,958,464 shares available for future awards under the Plan and Awards, and 1,188,718 shares available for future issuance under our 2016 Employee Stock Purchase Plan. In the event of a 1-for-5 Reverse Stock Split, or a 1-for-20 Reverse Stock Split: (i) the shares reserved for issuance upon the exercise of stock options outstanding would be approximately 2,404,138 and approximately 601,035 shares, respectively; (ii) the shares reserved for issuance upon vesting of restricted stock units would be approximately 464,888 and approximately 116,222 shares, respectively; (iii) the shares reserved for issuance upon vesting of performance-based restricted stock units would be approximately 1,237,321 and approximately 309,331 shares, respectively (iv) the shares available for future awards under the Plan and Awards would be approximately 1,391,693 and approximately 347,924 shares, respectively; and (v) the shares

available for future issuance under the 2016 Employee Stock Purchase Plan would be approximately 237,744 and approximately 59,436 shares, respectively. Under the terms of our outstanding equity awards and options, the proposed Reverse Stock Split would adjust and proportionately reduce the number of shares of Common Stock issuable upon exercise or vesting of such awards and options in the same ratio of the Reverse Stock Split and, correspondingly, would proportionately increase the exercise or purchase price, if any, of all such awards and options. The number of shares of Common Stock issuable upon exercise or vesting of outstanding equity awards and options and the exercise or purchase price related thereto, if any, would be equitably adjusted in accordance with the terms of the Plans, non-statutory stock option grants, which may include rounding the number of shares of Common Stock issuable down to the nearest whole share.

The following table, which is provided for illustrative purposes only, contains approximate information relating to our Common Stock immediately following the Reverse Stock Split under certain possible exchange ratios, based on share information as of July 8, 2019, without giving effect to the treatment of fractional shares.

	<b>8-Jul-19</b>	<b>1-for-5</b>	<b>1-for-10</b>	<b>1-for-15</b>	<b>1-for-20</b>
Number of authorized shares of Common Stock	200,000,000	200,000,000	200,000,000	200,000,000	200,000,000
Number of outstanding shares of Common Stock	130,279,463	26,055,893	13,027,947	8,685,298	6,513,974
Number of shares of Common Stock reserved for issuance upon exercise of outstanding stock options under the Plan and Awards	12,020,687	2,404,138	1,202,069	801,380	601,035
Number of shares of Common Stock reserved for issuance upon vesting of restricted stock units under the Plan and Awards	2,324,438	464,888	232,444	154,963	116,222
Number of shares of Common Stock reserved for issuance upon vesting of performance based restricted stock units under the Plan and Awards	6,186,605	1,237,321	618,661	412,441	309,331
Number of shares of Common Stock reserved for issuance for future awards under the Plan	6,958,464	1,391,693	695,847	463,898	347,924
Number of shares of Common Stock reserved for issuance for future awards under our 2016 Employee Stock Purchase Plan	1,188,718	237,744	118,872	79,248	59,436
Number of common stock warrants outstanding	145,000	29,000	14,500	9,667	7,250
Number of authorized and unreserved shares of Common Stock not outstanding	159,103,375	31,820,677	15,910,340	10,606,895	7,955,172

**Potential Anti-Takeover Effect**

An additional effect of the Reverse Stock Split would be to increase the relative amount of authorized but unissued shares of Common Stock, which may, under certain circumstances, be construed as having an anti-takeover effect. Although not designed or intended for such purposes, the effect of the increased available shares might be to make more difficult or to discourage an attempt to take over or otherwise acquire control of the Company (for example, by permitting issuances that would dilute the stock ownership of a person or entity seeking to effect a change in the composition of the Board or contemplating a tender offer or other change in control transaction). In addition, our Charter and our Bylaws include provisions that may have an anti-takeover effect. These provisions, among things, permit the Board to issue preferred stock with rights senior to those of the Common Stock without any further vote or action by the stockholders, provide that special meetings of stockholders may only be called by our Board and some of our officers, and do not provide for cumulative voting rights, which could make it more difficult for stockholders to effect certain corporate actions and may delay or discourage a change in control.

Our Board is not presently aware of any attempt, or contemplated attempt, to acquire control of the Company and the Reverse Stock Split Proposal is not part of any plan by our Board to recommend or implement a series of anti-takeover measures.

**Accounting Matters**

The Reverse Stock Split will not affect the par value per share of Common Stock, which will remain unchanged at \$0.001 per share. The stockholders' equity, in the aggregate, will remain unchanged. At the effective time of the Reverse Stock Split, the stockholders' equity will reflect the following: (i) the stated capital on our balance sheet attributable to the Common Stock, which consists of the par value per share of the Common Stock multiplied by the aggregate number of shares of the Common Stock issued and outstanding, will be reduced in proportion to the ratio of the Reverse Stock Split; and (ii) correspondingly, the additional paid-in capital account, which consists of the difference between the stated capital and the aggregate amount paid upon issuance of all currently outstanding shares of Common Stock, will be credited with the amount by which the stated capital is reduced. After the Reverse Stock Split, net income or loss per share and

the other per share amounts will be increased because there will be fewer shares of our Common Stock outstanding. In future financial statements, net income or loss per share and other per share amounts for periods ending before the Reverse Stock Split would be recast to give retroactive effect to the Reverse Stock Split. Additional adjustments will be made to these accounts as a result of any rounding to avoid the existence of fractional shares.

***Mechanics of the Reverse Stock Split***

***Effect on Registered "Book-Entry" Holders of Common Stock***

Holders of Common Stock may hold some or all of their Common Stock electronically in book-entry form ("street name") under the direct registration system for securities. These stockholders will not have stock certificates evidencing their ownership. They are, however, provided with a statement reflecting the number of shares of Common Stock registered in their accounts. If you hold registered Common Stock in book-entry form, you do not need to take any action to receive your post-split shares, if applicable.

***Fractional Shares***

Our stockholders will not receive fractional post-Reverse Stock Split shares in connection with the Reverse Stock Split. Instead, any fractional shares that would otherwise be issuable as a result of the Reverse Stock Split will be rounded up to the nearest whole share.

***No Dissenters' or Appraisal Rights***

Under the DGCL, our stockholders are not entitled to any dissenters' or appraisal rights with respect to the Reverse Stock Split, and we will not independently provide stockholders with any such right.

***U.S. Federal Income Tax Considerations***

The following is a summary of certain U.S. federal income tax consequences of the Reverse Stock Split to stockholders that hold our Common Stock as capital assets for U.S. federal income tax purposes (generally, property held for investment). This summary is based upon the provisions of the U.S. Internal Revenue Code of 1986, as amended, or the Code, Treasury regulations promulgated thereunder, administrative rulings and judicial decisions, all as in effect as of the date hereof, and all of which are subject to change and differing interpretations, possibly with retroactive effect. Changes in these authorities or their interpretation may result in the U.S. federal income tax consequences of the Reverse Stock Split differing substantially from the consequences summarized below.

This summary is for general information purposes only and does not address all aspects of U.S. federal income taxation that may be relevant to stockholders in light of their particular circumstances or to stockholders that may be subject to special tax rules, including, without limitation: (i) persons subject to special tax accounting rules as a result of any item of gross income with respect to our Common Stock being taken into account in an "applicable financial statement" (as defined in the Code); (ii) banks, insurance companies, or other financial institutions; (iii) tax-exempt organizations; (iv) dealers in securities or commodities; (v) regulated investment companies or real estate investment trusts; (vi) S corporations and partnerships (including entities or arrangements treated as partnerships for U.S. federal income tax purposes and their partners or members); (vii) traders in securities that elect to use the mark-to-market method of accounting; (viii) persons whose "functional currency" is not the U.S. dollar; (ix) persons holding our Common Stock in a hedging transaction, "straddle," "conversion transaction" or other risk reduction transaction; (x) persons who acquired our Common Stock in connection with employment or the performance of services; (xi) retirement plans; (xii) persons who are treated as non-U.S. persons for U.S. federal income tax purposes; or (xiv) certain former citizens or long-term residents of the United States.

In addition, this summary of certain U.S. federal income tax consequences does not address the tax consequences arising under the laws of any foreign, state or local jurisdiction or any U.S. federal tax consequences other than U.S. federal income taxation (such as U.S. federal estate and gift tax consequences). This discussion also does not address the impact of the alternative minimum tax and the Medicare contribution tax on net investment income. If a partnership (including any entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds shares of our Common Stock, the tax treatment of a partner in the partnership generally will depend upon the status of the partner and the activities of the partnership. Partnerships holding our Common Stock and the partners therein should consult their tax advisors regarding the tax consequences to them of the Reverse Stock Split.

We have not sought, and will not seek, an opinion of counsel or a ruling from the Internal Revenue Service, or the IRS, regarding the U.S. federal income tax consequences of the Reverse Stock Split and there can be no assurance that the IRS will not challenge the statements and conclusions set forth below or that a court would not sustain any such challenge.

**EACH STOCKHOLDER SHOULD CONSULT ITS TAX ADVISORS WITH RESPECT TO THE PARTICULAR TAX CONSEQUENCES OF THE REVERSE STOCK SPLIT TO SUCH STOCKHOLDER.**

***Taxation of Stockholders***

The Reverse Stock Split should constitute a “recapitalization” for U.S. federal income tax purposes. As a recapitalization, a stockholder should not recognize gain or loss as a result of the Reverse Stock Split. A stockholder’s aggregate tax basis in the shares of the Common Stock received pursuant to the Reverse Stock Split should equal the stockholder’s aggregate tax basis in the shares of the Common Stock surrendered, and such stockholder’s holding period in the shares of the Common Stock received should include the holding period of the shares of the Common Stock surrendered. Treasury regulations promulgated under the Code provide detailed rules for allocating the tax basis and holding period of shares of Common Stock surrendered pursuant to the Reverse Stock Split to shares of Common Stock received pursuant to the Reverse Stock Split. Stockholders holding shares of Common Stock that were acquired on different dates and at different prices should consult their tax advisors regarding the allocation of the tax basis and holding period of such shares.

***Vote Required***

The affirmative vote of the holders of a majority of the outstanding shares of our common stock entitled to vote at the 2019 Annual Meeting is required for the approval of this proposal. Abstentions and broker non-votes will be counted as present for purposes of determining the presence of a quorum. Abstentions and broker non-votes, however, will not be considered as votes cast for or against this proposal, and as a result, abstentions and broker non-votes will have the same effect as a vote against this proposal.

***Board Recommendation***

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE APPROVAL OF THE REVERSE STOCK SPLIT.**



## BOARD OF DIRECTORS INFORMATION

Presently, our Board of Directors is comprised of nine directors. Our Board is divided into three classes, with one class standing for election each year for a three-year term. There are currently three Class I directors, three Class II directors, and three Class III directors. Our Class I directors, whose terms will expire at our 2021 Annual Meeting, are our Chairman, Kirk Malloy, Ph.D., David Shapiro, M.D., and Carolyn Beaver. Our Class II directors, whose terms will expire at our 2019 Annual Meeting, are Tamar Howson, Mark Kessel, and Taylor Crouch, our Chief Executive Officer and President. Our Class III directors, whose terms will expire at our 2020 Annual Meeting, are Robert Baltera, Jr., James Glover, and Richard Maroun.

Based on its review of Board size, the Board has determined that at this time, the optimum board size is a total of six directors, of which five are independent. Although the Company does not have any formal policy on term limits, the Company's longest tenured directors determined to step down from the Board following completion of certain succession planning activities, including the successful onboarding of new directors with required skill sets. Accordingly, Mr. Glover and Mr. Baltera have submitted letters of resignation, effective immediately prior to the Annual Meeting, and Ms. Howson is not standing for reelection (such that her term will also end immediately prior to the Annual Meeting).

The Board, based on the recommendation of the Nominating and Corporate Governance Committee, has therefore nominated Taylor Crouch and Mark Kessel for election at the Annual Meeting as Class II directors, for a three-year term expiring at the 2022 Annual Meeting of Stockholders. Directors are elected by a plurality of the votes cast at the Annual Meeting, which means that the director nominees receiving the highest number of "FOR" votes will be elected as the Class II directors. Mr. Couch and Mr. Kessel 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 may designate, unless a contrary instruction is indicated in the Proxy.

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 with terms that continue after the 2019 Annual Meeting:

<u>Name</u>	<u>Age</u>	<u>Position</u>
Taylor Crouch	59	Director, Chief Executive Officer and President
Mark Kessel	78	Director
Kirk Malloy, Ph.D.	52	Independent Chairman
Richard Maroun	64	Director
David Shapiro, M.D. (1)	64	Director
Carolyn Beaver (2)	61	Director
Robert Baltera, Jr. (3)	54	Director
James Glover (3)	69	Director
Tamar Howson (3)	70	Director

- (1) Dr. Shapiro was appointed to the Board as a Class I Director, effective December 4, 2018.
- (2) Ms. Beaver was appointed to the Board as a Class I Director, effective February 19, 2019.
- (3) Mr. Baltera, Mr. Glover, and Ms. Howson are resigning or not standing for reelection immediately prior to the 2019 Annual Meeting.

### *Nominees as Class II Directors to Serve until the 2022 Annual Meeting of Stockholders*

**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. 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. He was also Of Counsel at the law firm of Shearman & Sterling, and a member of the firm's capital markets group until June 30, 2019. Previously, from 1971 to 2001, Mr. Kessel held various roles at Shearman & Sterling, 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, corporate governance, and intellectual property and licensing issues. 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.

### *Class III Directors Continuing in Office until the 2020 Annual Meeting of Stockholders*

**Richard Maroun, Director**, joined our Board in August 2016. Mr. Maroun has held management and executive leadership positions in pharmaceutical and life science companies for more than 20 years. He is currently an Executive Partner of Frazier Healthcare Partners, a position he has held since June 2014. From 2012 through February 2014, Mr. Maroun was the Senior Vice President, General Counsel and Corporate Secretary of Aptalis Pharma US, Inc. From 2007 to 2011, Mr. Maroun served as the Executive Vice President, Chief Administrative Officer, General Counsel, Business Development Officer, and Corporate Secretary of APP Pharmaceuticals, Inc. From 2006 to 2007, Mr. Maroun was the Executive Vice President, Chief Administrative Officer, General Counsel, and Corporate Secretary of Abraxis BioScience, Inc. From 2004 to 2006, Mr. Maroun was Vice President, Business Development and General Counsel of American BioScience, Inc. Prior to joining American BioScience, Mr. Maroun was a Director of Merrill Lynch, Pierce, Fenner & Smith, and before that he was a Senior Tax Manager of Deloitte & Touche. Mr. Maroun received his B.S. degree in economics from John Carroll University in 1977, his J.D. Degree from Santa Clara University in 1979, and his L.L.M. in Taxation from Boston University Law School in 1981. Mr. Maroun is currently a member of the Board of Trustees of John Carroll University, a director of Aadi Bioscience, Inc., and a board member or advisor of several privately held companies funded by Frazier Healthcare Partners, including Leiter's Enterprises, Inc., Golden State Medical Supply Co., Elements Behavioral Health, Inc., and Orthotic Holdings, Inc.

Mr. Maroun's managerial and leadership experience at pharmaceutical and life sciences companies, his experience in mergers, acquisitions, and finance, and as his legal and accounting expertise and education qualify him to be a member of our Board of Directors.

### *Class I Directors Continuing in Office Until the 2021 Annual Meeting of Stockholders*

**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 President of Verogen, Inc., a sequencing company solely dedicated to forensic science. He also currently serves as an independent consultant for life science companies and serves as an independent director for public and private companies, including NanoString Technologies, Inc. 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.

**David Shapiro, M.D., Director**, joined our Board in December 2018. Dr. Shapiro has served as the Chief Medical Officer for Intercept Pharmaceuticals, Inc. (“Intercept”), a publicly-traded biopharmaceutical company, since November 2017, having previously served as Intercept’s Chief Medical Officer and Executive Vice President, Development since 2008. Dr. Shapiro has over 30 years of clinical development experience in the pharmaceutical industry. Dr. Shapiro founded a consulting company, Integrated Quality Resources, that focused on development stage biopharmaceutical companies and was active in this role from 2005 to 2008. From 2000 to 2005, Dr. Shapiro was Executive Vice President, Medical Affairs and Chief Medical Officer of Idun Pharmaceuticals, Inc., prior to its acquisition by Pfizer Inc. From 1995 to 1998, he was President of the Scripps Medical Research Center at Scripps Clinic. He also served as Vice President, Clinical Research at Genzia and as Director and Group Leader, Hypertension Clinical Research at Merck Research Laboratories from 1985 to 1990. Dr. Shapiro has authored more than 20 peer-reviewed publications and organized and chaired several conferences aimed at improving product development. Dr. Shapiro served for two terms on the Executive Committee of the Board of the American Academy of Pharmaceutical Physicians. Dr. Shapiro was a director of Arcturus Therapeutics Ltd., a publicly-traded drug delivery and RNA medicines company, from November 2017 to May 2018. Dr. Shapiro received his medical degree from Dundee University & Medical School and undertook his postgraduate medical training in the university affiliated hospitals in Oxford, United Kingdom and the University of Vermont. He is an elected Fellow of both the Royal College of Physicians of London and the Faculty of Pharmaceutical Physicians of the United Kingdom. In appointing Dr. Shapiro as a director, the Board considered Dr. Shapiro’s medical, regulatory and clinical leadership experience at Intercept and other biotechnology companies. Specifically, Dr. Shapiro’s many years of experience in managing and supervising the clinical development and commercialization of biotechnology products allow him to contribute management insight to the Board, particularly in the area of clinical and regulatory strategy.

**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.

***Directors Resigning or not Standing for Reelection Immediately Prior to the 2019 Annual Meeting***

**Tamar Howson, Director**, joined our Board in June 2013. Ms. Howson has served as a corporate business development and strategy consultant to biopharmaceutical companies since 2011. From 2009 to 2011, she served as a member of the transaction advisory firm, JSB-Partners, providing business development support to life sciences companies. From 2007 to 2008, Ms. Howson served as Executive Vice President, Corporate Business Development at Lexicon Pharmaceuticals, a biotech company. Prior to joining Lexicon Pharmaceuticals, Ms. Howson served as Senior Vice President, Corporate and Business Development at Bristol-Myers Squibb. Ms. Howson currently serves on the board of directors of the following publicly traded companies: ContraVir Pharmaceuticals, Inc. and Enzymotec PLC. During the prior five years, Ms. Howson served as a director of the following publicly traded companies: OXiGENE, Inc., Cynapsus Therapeutics Inc., Actavis plc, Idenix Pharmaceuticals Inc., Wamer Chilcott plc, Soligenix, Inc. and Cardax, Inc. In addition, Ms. Howson serves as a director of the International Partnership for Microbicides, a non-profit product development partnership. She previously served on the boards of Aradigm, S\*BIO, Ariad Pharmaceuticals, SkyePharma, NPS Pharma, Targacept, and HBA. Ms. Howson holds an MBA from Columbia University, a MS from City University of New York, and a BS in Chemical Engineering from the Technion, Israel.

Ms. Howson’s extensive experience in the pharmaceutical and biotech industries, including as a corporate business development and strategy consultant to biopharmaceutical companies and as a senior professional at leading pharmaceutical companies, and her past and current board and board committee service qualify her to be a member of our Board of Directors.

**Robert Baltera, Jr., Director**, has served as a member of the Board since October 2009, and served as the Lead Independent Director from June 2014 through August 2016. Mr. Baltera joined Frazier Healthcare Partners, a venture capital firm, as entrepreneur-in-residence in January 2016, and co-founded Hawkeye Therapeutics, a search company focused on in-licensing and developing high-quality assets from pharmaceutical companies. Since March 2017, he has served as Chief Executive Officer at a Frazier portfolio company Cirius Therapeutics, Inc., which is developing a next-generation insulin sensitizer for the treatment of nonalcoholic steatohepatitis (NASH). He has also served as the Executive Chairman of Mavupharma, Inc. since March 2017. From February 2015 until December 2015, Mr. Baltera served as Chief Executive Officer and a member of the board of directors of Laguna Pharmaceuticals, a privately-funded biotechnology company. Mr. Baltera was the Chief Executive Officer of Amira Pharmaceuticals, a private

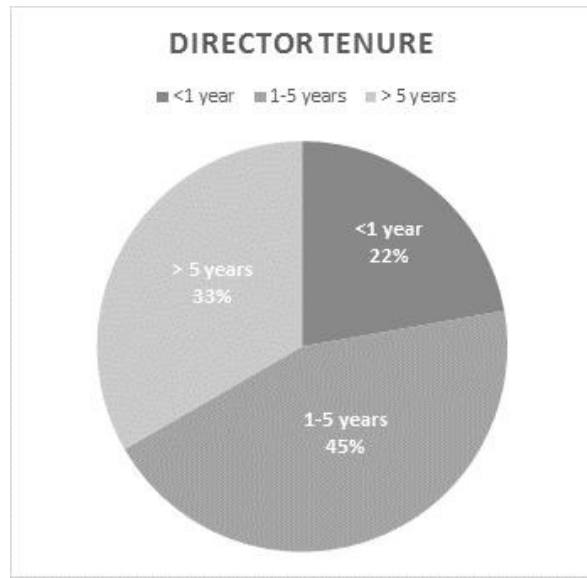
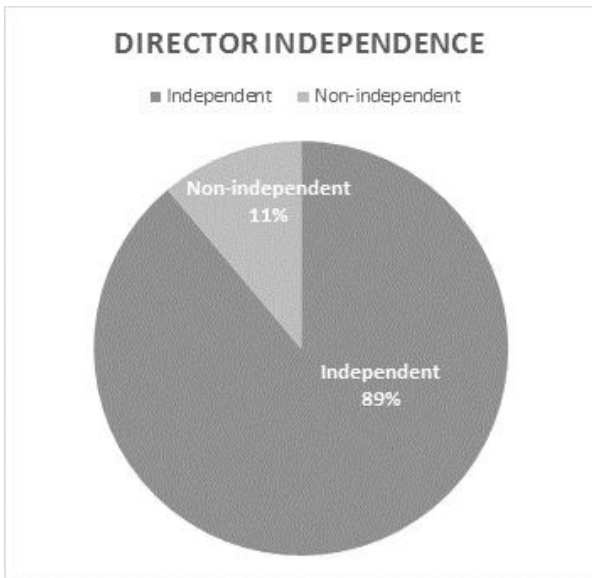
pharmaceutical development company, a position he held from July 2007 through September 2011. Amira was sold to Bristol-Myers Squibb in September 2011 for \$325 million in cash, plus additional milestone payments of up to \$150 million. Before becoming Amira's Chief Executive Officer, he held a number of senior management positions at Amgen Inc., a publicly-held biopharmaceutical company, the last being Vice President of Corporate and Contract Manufacturing. Mr. Baltera previously served on the board of directors of Xencor, Inc., a publicly-held biotechnology development company. He currently serves on the board of directors of Panmira Pharmaceuticals, LLC, as well as an industry group, the San Diego Venture Group. Mr. Baltera holds an M.B.A. from the Anderson School at the University of California, Los Angeles and earned a B.S. in Microbiology and an M.S. in Genetics from The Pennsylvania State University. Mr. Baltera attended the Director Education and Certification program at the University of California, Los Angeles.

Mr. Baltera's executive leadership experience, his experience in developing therapeutic and pharmaceutical products, his past and current board and board committee service, and as his educational background qualify him to be a member of our Board of Directors.

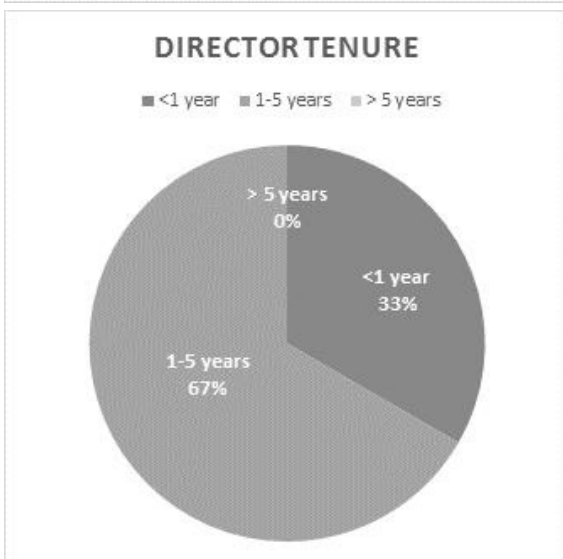
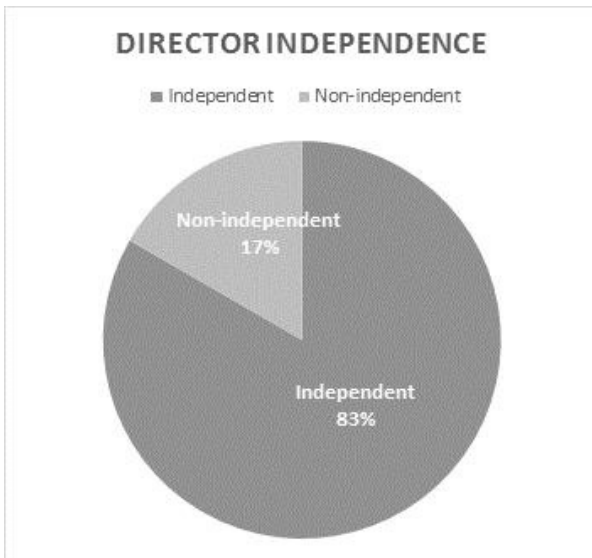
**James T. Glover, Director**, has served as a director since July 2012. Mr. Glover was the Senior Vice President, Operations and Chief Financial Officer of Anadys Pharmaceuticals, Inc., a publicly-held biopharmaceutical company acquired by Hoffmann-La Roche Inc., from 2006 to 2009. From 1989 to 2006, he served at Beckman Coulter, Inc., a leading biomedical testing instruments company, most recently as Senior Vice President and Chief Financial Officer. Mr. Glover served as a director of Varian, Inc., a publicly-traded scientific instruments company purchased by Agilent Technologies, and was Varian's audit committee chairman. Mr. Glover received his BS in accounting from California State Polytechnic University and his MBA from Pepperdine University. Mr. Glover attended the Director Education and Certification program at the University of California, Los Angeles and passed the certification exam. Mr. Glover is a certified public accountant (inactive) and a chartered global management accountant (CGMA).

Mr. Glover's previous service as a Chief Financial Officer for pharmaceutical and life sciences companies, his past and current board and board committee experience and his finance and accounting expertise and experience qualify him to be a member of our Board of Directors.

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



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



*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. 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](http://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 Stock 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 Stock 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 eight of our nine directors, including Robert Baltera, Jr., James Glover, Tamar Howson, Mark Kessel, Kirk Malloy, Ph.D., Carolyn Beaver, David Shapiro, M.D., and Richard Maroun, qualify as “independent” directors. One of our directors, Taylor Crouch, does not qualify as independent directors due to his current service as our Chief Executive Officer and President.

### **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. 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, and Nominating and Corporate Governance 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)**

	<u>Audit Committee</u>	<u>Compensation Committee</u>	<u>Nominating and Corporate Governance Committee</u>
<b>Independent Director</b>			
Robert Baltera, Jr., M.S., M.B.A.	Member	Chair	
James T. Glover, M.B.A., C.P.A.	Chair		Member
Tamar D. Howson, M.S., M.B.A.	Member	Member	
Mark Kessel, J.D.		Member	Member
Kirk Malloy, Ph.D.			Chair
Richard Maroun, J.D.	Member	Member	
David Shapiro, M.D.			
Carolyn Beaver	Member		
<b>Non-Independent Director</b>			
Taylor Crouch			

**Board Committees (Following the 2019 Annual Meeting)**

	<u>Audit Committee</u>	<u>Compensation Committee</u>	<u>Nominating and Corporate Governance Committee</u>
<b>Independent Director</b>			
Mark Kessel, J.D.	Member		Member
Kirk Malloy, Ph.D.		Member	Chair
Richard Maroun, J.D.	Member	Chair	
David Shapiro, M.D.		Member	
Carolyn Beaver	Chair		Member
<b>Non-Independent Director</b>			
Taylor Crouch			

**Compensation Committee.** Our Compensation Committee currently consists of Mr. Baltera (Chair), Mr. Kessel, Ms. Howson, and Mr. Maroun. Following the Annual Meeting, assuming the director nominee are re-elected, the Compensation Committee will consist of Mr. Maroun (Chair), Dr. Malloy, and Dr. Shapiro. 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 Mr. Baltera, Ms. Howson, Mr. Kessel, Mr. Maroun, Dr. Malloy, and Dr. Shapiro are each 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 Marsh & McLennan Agency LLC (“Marsh”), 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](http://www.organovo.com).

**Audit Committee.** Our Audit Committee currently consists of Mr. Glover (Chair), Ms. Howson, Mr. Baltera, Mr. Maroun, and Ms. Beaver. Following the Annual Meeting, assuming the director nominees are re-elected, our Audit Committee will consist of Ms. Beaver (Chair), Mr. Maroun, 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 Ms. Howson, Mr. Glover, Mr. Baltera, Mr. Maroun, 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](http://www.organovo.com).

**Nominating and Corporate Governance Committee.** Our Nominating and Corporate Governance Committee currently consists of Dr. Malloy (Chair), Mr. Glover, and Mr. Kessel. Following the Annual Meeting, assuming the director nominees are re-elected, our Nominating and Corporate Governance Committee will consist 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](http://www.organovo.com).

#### ***Board and Committee Attendance***

During the fiscal year ended March 31, 2019, 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 five times and acted by written consent four times during the fiscal year ended March 31, 2019; the Audit Committee met four times and did not act by written consent during the fiscal year ended March 31, 2019; the Compensation Committee met six times and acted by written consent four times during the fiscal year ended March 31, 2019; and the Nominating and Corporate Governance Committee met four times and did not act by written consent during the fiscal year ended March 31, 2019.

#### ***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 2018 Annual Meeting of Stockholders, each 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 Stock 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 2020 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 6275 Nancy Ridge Dr., Suite 110, San Diego, California 92121, 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 2019, the Compensation Committee retained the Compensation Consulting Division of Marsh & McLennan Agency LLC ("Marsh") as its independent compensation consultant. With the assistance of Marsh, 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 2019, 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 2019, 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 2019 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:

<u>Position</u>	<u>Audit Committee</u>	<u>Compensation Committee</u>	<u>Nominating &amp; Corporate Governance Committee</u>
Committee Chair (additional retainer)	\$ 15,000	\$ 10,000	\$ 9,500
Committee Member	\$ 10,000	\$ 7,750	\$ 5,000

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 2017 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 2019, 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.

**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 2019:

<b>Name</b>	<b>Year or Period</b>	<b>Fees Earned or Paid in Cash (\$)</b>	<b>Stock Awards (\$)</b>	<b>Option Awards (\$)(1)</b>	<b>All Other Compensation (\$)(3)</b>	<b>Total (\$)</b>
Robert Baltera, Jr.	2019	\$ 77,750	\$ —	\$ 38,846	\$ —	\$ 116,596
James Glover	2019	\$ 80,000	\$ —	\$ 38,846	\$ —	\$ 118,846
Tamar Howson	2019	\$ 67,750	\$ —	\$ 38,846	\$ —	\$ 106,596
Mark Kessel	2019	\$ 62,750	\$ —	\$ 38,846	\$ —	\$ 101,596
Kirk Malloy, Ph.D. (2)	2019	\$ 114,500	\$ —	\$ 38,846	\$ —	\$ 153,346
Richard Maroun	2019	\$ 67,750	\$ —	\$ 38,846	\$ —	\$ 106,596
David Shapiro, M.D.	2019	\$ 16,304	\$ —	\$ 50,971	\$ —	\$ 67,275
Carolyn Beaver	2019	\$ 5,556	\$ —	\$ —	\$ —	\$ 5,556

- (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, 2019, as filed with the SEC.
- (2) Dr. Malloy served as our Lead Independent Director from August 2016 through August 2017 until Mr. Murphy resigned from the Board, at which time Dr. Malloy was appointed Chairman.
- (3) Excludes amounts reimbursed for reasonable travel to Board and Board Committee meetings.

**Director Compensation – Equity**

The following table shows the total number of unvested RSUs and total option awards held by each of our non-employee directors as of March 31, 2019:

<b>Name</b>	<b>Unvested RSUs Outstanding (#)</b>	<b>Vested Stock Options Outstanding (#)</b>	<b>Unvested Stock Options Outstanding (#)</b>
Robert Baltera, Jr.	—	209,000	45,500
James Glover	—	209,000	45,500
Tamar Howson	—	205,500	45,500
Mark Kessel	1,250	76,417	48,583
Kirk Malloy, Ph.D.	—	154,500	45,500
Richard Maroun	1,250	76,417	48,583
David Shapiro, M.D.	—	3,875	72,625
Carolyn Beaver (1)	n/a	n/a	n/a

- (1) Ms. Beaver was appointed to the Board as a Class I Director, effective February 19, 2019. As of March 31, 2019, Ms. Beaver was not issued any form of equity compensation.

## EXECUTIVE OFFICERS

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

<u>Name</u>	<u>Age</u>	<u>Position</u>
Taylor Crouch	59	Chief Executive Officer and President
Craig Kussman	61	Chief Financial Officer
Jennifer Kinsbruner Bush, JD	44	Senior Vice President, General Counsel, Corporate Secretary and Compliance Officer
Paul Gallant	54	General Manager
Steven Hughes, M.D.	52	Chief Medical 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.

**Paul Gallant, General Manager**, joined us in August 2015 as General Manager. Mr. Gallant has more than 20 years of management and research and development experience in the drug discovery industry, most recently serving as Chief Operating Officer for DiscoveRx, a global scientific product and services company, from November 2010 to August 2015. As Chief Operating Officer at DiscoveRx, Mr. Gallant was responsible for the company’s largest business unit, drug discovery services. Mr. Gallant formerly served as senior director at Ambit Pharmaceuticals, acquired by DiscoveRx in 2010, from September 2005 to November 2010, where he led the development and commercialization for the KINOMEScan platform. The world’s largest commercial kinase screening panel, KINOMEScan became a key element of DiscoveRx’s offering post-acquisition. Mr. Gallant has also led research and development and service teams at Amgen, Millennium Pharmaceuticals, Cubist Pharmaceuticals and Massachusetts General Hospital. Mr. Gallant received a B.A. in biology from Colby College.

**Steve Hughes, M.D., Chief Medical Officer**, joined us in July 2018 as Chief Medical Officer. Dr. Hughes has more than 20 years of experience building and leading clinical development and medical affairs teams at leading biopharma companies. He has been involved in more than 50 clinical trials with more than 25 drugs across multiple therapeutic areas including cardiovascular, metabolic, neurology, oncology, infectious diseases, rheumatology, ophthalmology and rare diseases, in the U.S. and other regions. Dr. Hughes has also played a key role in the submission of multiple NDA/MAA applications. He most recently served as the Chief Clinical Development Officer at Ionis Pharmaceuticals, where he led a team that managed the global clinical development of multiple drugs across 10 therapeutic areas. Previously, he held positions as Global Medical Lead, Oncology Clinical Development and Medical Director, UK & Ireland at Biogen Idec. Dr. Hughes also held numerous senior clinical development, medical affairs and leadership positions of increasing responsibility at CSL Behring and Sanofi. Dr. Hughes is board certified in Pharmaceutical Medicine and received his medical degree from Imperial College, London. He also has an MBA with distinction from Imperial College Business School.

## 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 8, 2019 (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., 6275 Nancy Ridge Dr., Suite 110, San Diego, California 92121.

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 8, 2019. 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 8, 2019. 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 8, 2019. These shares, however, are not deemed outstanding for the purpose of computing the percentage ownership of any other individual.

Applicable percentages are based on 130,279,463 shares of common stock outstanding as of July 8, 2019, as adjusted as required by the rules promulgated by the SEC.

<u>Name of Beneficial Owner</u>	<u>Beneficial Ownership(1)</u>	
	<u>Number of Common Shares</u>	<u>Percent of Common Shares</u>
<b>5% Stockholders</b>		
ARK Investment Management, LLC	17,929,634 (2)	13.8%
BlackRock Advisors, LLC (BGI)	7,101,200 (3)	5.5%
<b>Directors and Named Executive Officers</b>		
Taylor Crouch	1,750,762 (4)	1.3%
Jennifer Kinsbruner Bush, JD	717,603 (5)	*
Craig Kussman	631,347 (6)	*
Paul Gallant	574,497 (7)	*
Robert Baltera	400,506 (8)	*
Steve Hughes, M.D.	283,853 (9)	*
Jim Glover	272,000 (10)	*
Tamar Howson	258,500 (11)	*
Kirk Malloy, Ph.D.	207,500 (12)	*
Richard Maroun	140,000 (13)	*
Mark Kessel	140,000 (14)	*
David Shapiro, M.D.	41,625 (15)	*
Carolyn Beaver	39,167 (16)	*
All executive officers and directors as a group (13 persons)	5,457,360 (17)	4.2%

\* 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 a Schedule 13G/A filed on February 7, 2019, by ARK Investment Management LLC, 3 East 28th Street, 7th Floor, New York, NY 10016. According to the Schedule 13G/A, ARK Investment Management LLC has sole voting power with respect to 17,929,634 shares, shared voting power with respect to 130,195 shares, sole dispositive power with respect to 17,929,634 shares, and shared dispositive power with respect to 130,195 shares.
- (3) Based solely upon a Schedule 13G/A filed on February 6, 2019, by BlackRock, Inc., 55 East 52nd Street, New York, NY 10055. According to the Schedule 13G/A, BlackRock, Inc. has sole voting power with respect to 6,935,621 shares and sole dispositive power with respect to 7,101,200 shares.

- (4) Includes options to purchase 1,699,620 option shares currently exercisable or exercisable within 60 days of July 8, 2019. Does not include a stock option to purchase 2,338,592 shares of common stock subject to future vesting pursuant to the terms of stock option agreements. Does not include 102,272 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 PBRUS representing the right to receive up to 2,180,134 shares of common stock contingent upon the Company's achievement of performance metrics. A PBRUS represents a conditional right to receive one share of our common stock at a specified future date.
- (5) Includes options to purchase 613,542 option shares currently exercisable or exercisable within 60 days of July 8, 2019. Does not include 719,791 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements. Does not include 151,732 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 PBRUS representing the right to receive up to 721,650 shares of common stock contingent upon the Company's achievement of performance metrics. A PBRUS represents a conditional right to receive one share of our common stock at a specified future date.
- (6) Includes options to purchase 510,000 option shares currently exercisable or exercisable within 60 days of July 8, 2019. Does not include 795,000 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements. Does not include 180,386 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 PBRUS representing the right to receive up to 806,550 shares of common stock contingent upon the Company's achievement of performance metrics. A PBRUS represents a conditional right to receive one share of our common stock at a specified future date.
- (7) Includes options to purchase 498,022 option shares currently exercisable or exercisable within 60 days of July 8, 2019. Does not include 538,645 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements. Does not include 124,360 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 PBRUS representing the right to receive up to 586,214 shares of common stock contingent upon the Company's achievement of performance metrics. A PBRUS represents a conditional right to receive one share of our common stock at a specified future date.
- (8) Includes options to purchase 254,500 option shares currently exercisable or exercisable within 60 days of July 8, 2019.
- (9) Includes options to purchase 243,674 option shares currently exercisable or exercisable within 60 days of July 8, 2019. Does not include 731,020 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements. Does not include 120,535 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 PBRUS representing the right to receive up to 1,212,857 shares of common stock contingent upon the Company's achievement of performance metrics. A PBRUS represents a conditional right to receive one share of our common stock at a specified future date.
- (10) Includes options to purchase 254,500 option shares currently exercisable or exercisable within 60 days of July 8, 2019.
- (11) Includes options to purchase 251,000 option shares currently exercisable or exercisable within 60 days of July 8, 2019.
- (12) Includes options to purchase 200,000 option shares currently exercisable or exercisable within 60 days of July 8, 2019.
- (13) Includes options to purchase 125,000 option shares currently exercisable or exercisable within 60 days of July 8, 2019.
- (14) Includes options to purchase 125,000 option shares currently exercisable or exercisable within 60 days of July 8, 2019.
- (15) Includes options to purchase 41,625 option shares currently exercisable or exercisable within 60 days of July 8, 2019. Does not include 34,875 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements.
- (16) Includes options to purchase 39,167 option shares currently exercisable or exercisable within 60 days of July 8, 2019. Does not include 43,333 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements.
- (17) Includes options to purchase 4,855,650 option shares currently exercisable or exercisable within 60 days of July 8, 2019. Does not include 5,201,256 additional option shares of common stock subject to future vesting pursuant to the terms of stock option agreements. Does not include 679,285 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 5,507,405 shares of common stock contingent upon the Company's achievement of various performance metrics. A PBRUS represents a conditional right to receive one share of our common stock at a specified future date.



### ***Changes in Control***

We are not aware of or a party to any arrangements, including any pledge by any person of our securities, the operation of which may at a subsequent date result in a change of control.

### ***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 2019, 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 2019 (i.e., the period from April 1, 2018 to March 31, 2019).

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 and our two other most highly compensated executive officers serving as of the end of Fiscal 2019, including:

- Taylor Crouch, our Chief Executive Officer and President;
- Craig Kussman, our Chief Financial Officer; and
- Jennifer Kinsbruner Bush, JD, our Senior Vice President, General Counsel, Corporate Secretary and Compliance Officer.

These three individuals are collectively referred to in this Proxy Statement as our "named executive officers".

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

At our 2018 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 2018 (i.e., the period from April 1, 2017 to March 31, 2018). We received favorable consideration from our stockholders, with over 92% 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 2019. 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 2019, the Compensation Committee engaged Marsh, 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 Marsh from serving as an independent consultant to the Committee.

The Compensation Committee requested Marsh 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 Marsh.

For Fiscal 2019, based on recommendations from Marsh, 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 Marsh, 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: Aeglea BioTherapeutics, aTyr Pharma, Bellicum Pharmaceuticals, Cerus, Gemphire Therapeutics, Infinity Pharmaceuticals, Mersana Therapeutics, OncoMed Pharmaceuticals, pfenex, Proteostasis Pharmaceuticals, Ra Pharmaceuticals, REGENXBIO, SurModics, and Zafgen. Our Compensation Committee also replaced some of the commercial stage companies previously included in our peer group because their market valuations had grown too high for direct comparison to our Company, and/or their revenues and employee size had

grown too large for direct comparison. Our Compensation Committee then used the compensation data from this revised peer group in setting executive compensation for Fiscal 2019.

The peer group for Fiscal 2019 included:

AcelRx Pharmaceuticals, Inc.	Gemphire Therapeutics	Proteostasis Therapeutics
Agenus	Infinity Pharmaceuticals	Ra Pharmaceuticals
Arrowhead Research Corporation	InVivo Therapeutics Corp.	REGENXBIO
aTyr Pharma	Mersana Therapeutics	Sientra
Bellicum Pharmaceuticals	OncoMed Pharmaceuticals	Stemline Therapeutics
BioTime	Pfenex	SurModics
Cerus	Progenics Pharmaceuticals	Zafgen

#### ***Determination of Executive Compensation***

In setting executive compensation for Fiscal 2019, 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 Marsh. 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 2018, the Company's financial status and operating runway, each executive officer's responsibilities and contribution to the Company's achievement of the Fiscal 2018 corporate goals, and each executive officer's individual performance during Fiscal 2018. 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 Marsh during fiscal 2018 to serve as its independent compensation consultant. Marsh 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 "2019 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 Marsh, 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 2019, the Compensation Committee provided approximately a 3% cost of living adjustment to our executive officers compared to Fiscal 2018

The base salaries of our named executive officers for Fiscal 2019 as compared to Fiscal 2018 are set forth in the following table:

<u>Name and Title</u>	<u>Fiscal 2018 Base Salary</u>	<u>Fiscal 2019 Base Salary</u>	<u>Increase</u>
Taylor Crouch, <i>Chief Executive Officer and President</i>	\$ 500,000	\$ 515,000	3.0%(1)
Craig Kussman, <i>Chief Financial Officer</i>	\$ 387,000	\$ 396,675	2.5%(1)
Jennifer Kinsbruner Bush, JD, <i>SVP, General Counsel, Corporate Secretary and Compliance Officer</i>	\$ 347,000	\$ 357,410	3.0%(1)

(1) Fiscal 2019 base salary increases were based on the factors described in the above section and were effective April 1, 2018.

**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 2019, 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 and discretionary credit for individual performance evaluated and approved by the Compensation Committee. 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. The percentage of each executive's annual performance-based cash incentive award based on the achievement of the Company's corporate goals ranged from 80% to 100%; and the percentage of each executive's annual discretionary performance-based cash incentive award ranged from 0% to 20%, each as discussed further below.

For Fiscal 2019, our Compensation Committee established four corporate target and stretch performance goals, including: (i) total revenue recognized during Fiscal 2019, (ii) cash management, capital strategy, and certain financial metrics, (iii) preclinical development, and (iv) technology platform advancement. The revenue and financial goals were weighted at 15% and 25%, respectively, the preclinical development goals at 35%, and the technology platform goals at 25%. For Fiscal 2019, the Compensation Committee evaluated the Company's performance relative to each of these corporate performance goals. For performance goals with minimum base performance levels, the Compensation Committee assigned a zero percentage to those performance goals if the Company did not meet the minimum base performance level. For performance goals that did not have a minimum base performance level or for which the Company exceeded the minimum performance level, the Compensation Committee determined the bonus percentage on an interpolated basis between zero and 100%. Based on this evaluation, the Compensation Committee assigned the following values to the corporate performance goals: (i) 0% related to total revenue goal because the Company did not meet the minimum base performance level, (ii) 100% related to meeting the base metrics for the cash management, capital strategy, and financial metrics goals, (iii) 100% related to meeting certain base and stretch metrics for the preclinical development goals, and (iv) 113% related to achieving certain base and stretch metrics for the technology platform advancement goals.

Based on these scores and the relative weights applied to each goal, the Company achieved an overall aggregate of 88% of the corporate performance goals established by the Compensation Committee and described above. Our Compensation Committee expected that the objectives it set as the corporate performance goals at the target level of performance would be challenging and require effective execution by the Company's management team and that the objectives it set for the stretch level of performance would be difficult to achieve.

The Compensation Committee then considered the respective performance of each of the executive officers in determining whether to award any discretionary credit based on individual performance. In determining whether to award discretionary credit, the Compensation Committee considered factors such as the executive's individual contributions to achieving corporate objectives, and the addition of unforeseen goals and/or management responsibilities.

Mr. Crouch's annual performance-based cash incentive award was based 100% on the achievement of the Company's corporate goals, for which the Committee awarded 88% credit as described above.

Mr. Kussman's annual performance-based cash incentive award was based 80% on the achievement of the Company's corporate goals, and 20% subject to discretionary credit for individual performance. Based on his contribution to the corporate objectives and the Company's achievement of 88% of the corporate goals, the Compensation Committee set Mr. Kussman's bonus at 88% of target.

Ms. Bush's annual performance-based cash incentive award was based 80% on the achievement of the Company's corporate goals, and 20% on the achievement of her individual performance goals. During Fiscal 2019, Ms. Bush took on significant additional responsibilities as the Company's acting Head of Regulatory Affairs. Based on Ms. Bush's successful performance of these additional unforeseen management responsibilities, and the Company's achievement of 88% of the corporate goals, the Compensation Committee set Ms. Bush's bonus at 97% of target.

Our Compensation Committee expected that the objectives it approved for each executive officer's individual performance goals at the target level of performance could be achieved and that the objectives it approved for the stretch level of performance would be difficult to achieve.

Based on the achievement of the corporate and respective individual performance goals, our Compensation Committee awarded our named executive officers cash bonuses ranging between 36.0% and 44.0% of their respective base salaries. In some instances, these bonus amounts were less than the target bonus award opportunities established for our executive officers for Fiscal 2019 because the Company did not achieve all of the corporate performance goals established by the Compensation Committee, and because the executives did not achieve all of their individual performance goals, which the Compensation Committee views as alignment of pay with performance.

Specifically, the bonus payments for Fiscal 2019 were as follows:

<u>Name and Title</u>	<u>Percentage of Base Salary</u>	<u>Fiscal 2019 Bonus Award</u>
Taylor Crouch, <i>Chief Executive Officer and President</i>	44%	\$ 226,600
Craig Kussman, <i>Chief Financial Officer</i>	36%	\$ 142,800
Jennifer Kinsbruner Bush, JD, <i>SVP, General Counsel, Corporate Secretary and Compliance Officer</i>	39%	\$ 139,400

**Equity-Based Incentive Awards.** In addition to base salaries and annual performance-based cash incentives, the Compensation Committee provides long-term, equity-based incentive awards to our executive officers. For Fiscal 2019, these grants consisted of restricted stock units ("RSU's") that vest over a four-year period service period for our continuing executive officers. In determining the size and terms of the RSU 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).

In addition to the annual grants described above, in August 2018 the Compensation Committee approved a special, one-time equity award to the Company's Executive Officers (the "Retention Award"). In approving these stock option awards, the Compensation Committee considered the following factors:

- The critical need of the Company to retain the services of these named executive officers to enable the Company to achieve its short-term corporate goals and to implement its long-term business plan;
- The experience, skills and performance of each of the named executive officers;
- The additional responsibilities and workload assigned to, and assumed by, the named executive officers as a result of the Company's headcount and cost reduction initiatives;

The Compensation Committee also evaluated the outstanding equity awards held by each of the named executive officers, including the remaining vesting periods, the number of stock option awards in and out of the money, and the value of the equity awards based on the Company's current stock price. Based on this evaluation, the Compensation Committee determined that the existing equity awards held

by the Company's named executive officers are not sufficient to effectively retain and incentivize the Company's named executive officers, and to effectively align their interests with the interests of the Company's stockholders. Each of the stock option awards vest over a four-year period measured from the grant date, with 25% of the option shares vesting on August 15, 2019, and the remaining option shares vesting over the next 12 quarterly periods based on the executive's continued services to the Company.

For Mr. Crouch, during Fiscal 2018 the Compensation Committee determined that his initial awards should consist of a time-based stock option award and a performance-based RSU award. Mr. Crouch's stock option award vests over a four-year period measured from his start date based on his continued services to the Company. The vesting of Mr. Crouch's performance-based RSU is divided into five separate tranches, each with independent vesting criteria. The first four tranches have performance criteria related to annual revenue goals with measurement dates at the end of Fiscal Year 2018 (20%), Fiscal Year 2019 (20%), Fiscal Year 2020 (20%), and Fiscal Year 2021 (20%). The fifth tranche has a performance metric related to a path to profitability goal measured as Negative Adjusted Earnings Before Interest, Taxes, Depreciation and Amortization ("EBITDA") achievable at any point between the grant date and the end of Fiscal Year 2020 (20%). The number of shares that ultimately vest for each tranche of the performance-based RSU will range from 0% to 120% of the target amount, not to exceed 208,822 shares of common stock in aggregate. Based on changes to the Company's strategy, on December 12, 2018, the Board of Directors formally approved an amendment to the vesting criteria for the PBRsUs. As of March 31, 2018, 100% of the Negative Adjusted EBITDA tranche, or 41,764 shares had vested and 8,352 units had been forfeited. 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, 2019, no tranches had vested.

The Compensation Committee believes that time-based RSU and stock option awards help further the Company's compensation objectives by encouraging executives to remain with the Company through at least the vesting period for these awards. Performance and time-based RSU and stock option awards also align the interests of the Company's executives with the interests of its stockholders. In addition, because the option awards are granted at the fair market value of the Company's common stock on the date of grant, the option awards only have value to the executive officer if the value of the Company's common stock increases during the vesting period, which the Compensation Committee views as alignment of pay with performance. The Compensation Committee has and plans to continue to grant long-term equity incentive awards to the Company's executive officers in connection with their initial hire, following promotions and on an annual basis.

For Fiscal 2019, the Compensation Committee approved equity awards as follows:

<u>Name</u>	<u>Incentive Stock Award (#)</u>	<u>Incentive Option Award (#)</u>	<u>Retention Option Award (#)</u>	<u>Incentive Stock Award \$(2)</u>	<u>Incentive Option Award \$(3)</u>	<u>Retention Option Award \$(3)</u>	<u>Total (\$)</u>	<u>Multiple of Fiscal 2019 Base Salary</u>
Taylor Crouch (1)	307,466	600,000	1,350,000	\$ 438,773	\$ 723,181	\$ 1,010,876	\$ 2,172,830	4.2
Craig Kussman	74,380	300,000	675,000	\$ 136,859	\$ 361,591	\$ 505,438	\$ 1,003,888	2.5
Jennifer Kinsbruner Bush, JD	70,248	283,333	675,000	\$ 129,256	\$ 341,502	\$ 505,438	\$ 976,196	2.7

- (1) The incentive stock awards granted to Mr. Crouch in FY19 include the performance based restricted stock unit awards granted as part of the amendment described above.
- (2) Calculated based on the fair market value on the date of grant.
- (3) Calculated based on Black Scholes value computed on the date of grant.

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 executive 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).

The Severance Plan establishes four tiers of employees: Tier 1, Tier 2, Tier 3 and Tier 4. In Fiscal 2018, the Company’s Tier 1 employees included Taylor Crouch, our Chief Executive Officer, and Craig Kussman, the Company’s Chief Financial Officer. The Company’s Tier 2 employees included all non-Tier 1 members of the Company’s executive team, including Dr. Hughes, Ms. Bush, and Mr. Gallant. 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.

“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, 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. It shall be a condition precedent to the Participant’s right to terminate Participant’s employment for Good Reason (whether before or after a Change in Control) that (i) the Participant shall have first given Organovo written notice stating with reasonable specificity the breach on which such termination is premised within ninety (90) days after the Participant becomes aware or should have become aware of such breach, and (ii) if such breach is susceptible of cure or remedy, such breach has not been cured or remedied within thirty (30) days after receipt of such notice.

#### ***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.



**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, 2019 based upon certain designated events.

<b>Name</b>	<b>Cash Severance (\$)(3)</b>	<b>Health and Other Insurance Benefits (\$)</b>	<b>Stock Options (Unvested and Accelerated) (\$)(1)</b>	<b>Restricted Stock Units (Unvested and Accelerated) (\$)(2)</b>	<b>Fiscal Year 2019 Total (\$)(3)</b>
<b>Taylor Crouch</b>					
Termination for reasons other than Cause, death or Disability, or for Good Reason	\$ 1,030,000	\$ 42,556	\$ -	\$ -	\$ 1,072,556
Termination in connection with a Change of Control	\$ 1,030,000	\$ 42,556	\$ -	\$ 277,336	\$ 1,349,892
<b>Craig Kussman</b>					
Termination for reasons other than Cause, death or Disability, or for Good Reason	\$ 793,350	\$ 42,556	\$ -	\$ -	\$ 835,906
Termination in connection with a Change of Control	\$ 793,350	\$ 42,556	\$ -	\$ 231,814	\$ 1,067,720
<b>Jennifer Kinsbruner Bush, JD</b>					
Termination for reasons other than Cause, death or Disability, or for Good Reason	\$ 357,410	\$ 8,441	\$ -	\$ -	\$ 365,851
Termination in connection with a Change of Control	\$ 357,410	\$ 8,441	\$ -	\$ 193,329	\$ 559,180

- (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 Stock 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 Stock Market on March 31, 2019 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, 2019) on the Nasdaq Stock Market by the number of unvested and accelerated RSUs.
- (3) Payable in a lump sum.

**Summary Compensation Table**

The following table summarizes the total compensation paid to or earned by each named executive officer for Fiscal 2019 and Fiscal 2018.

<b>Name and Principal Position</b>	<b>Year or Period</b>	<b>Salary (\$)</b>	<b>Bonus (\$)</b>	<b>Stock Awards (\$)(3)</b>	<b>Option Awards (\$)(4)</b>	<b>Non-Equity Incentive Plan Compensation (\$)(5)</b>	<b>All Other Compensation (\$)(6)</b>	<b>Total (\$)</b>
Taylor Crouch (1) Chairman, Chief Executive Officer, President	2019	\$ 515,000	\$ —	\$ 438,773	\$1,734,057	\$ 226,600	\$ 9,778	\$ 2,924,208
	2018	\$ 471,154	\$ —	\$ 392,582	\$3,748,029	\$ 200,000	\$ 14,183	\$ 4,825,948
Craig Kussman (2) Chief Financial Officer	2019	\$ 396,675	\$ —	\$ 136,859	\$ 867,029	\$ 142,803	\$ 9,717	\$ 1,553,083
	2018	\$ 387,000	\$ 37,500	\$ 585,200	\$ —	\$ 140,000	\$ 9,572	\$ 1,159,272
Jennifer Kinsbruner Bush, JD SVP, General Counsel, Corporate Secretary and Compliance Officer	2019	\$ 357,410	\$ —	\$ 129,256	\$ 846,940	\$ 139,390	\$ 9,639	\$ 1,482,635
	2018	\$ 351,570	\$ —	\$ 598,500	\$ -	\$ 140,000	\$ 9,466	\$ 1,099,536

- (1) Mr. Crouch was hired as the Company's Chief Executive Officer and President, effective April 24, 2017
- (2) Mr. Kussman joined the Company as Chief Financial Officer effective August 22, 2016. Includes a \$75,000 sign-on bonus earned by Mr. Kussman, of which \$37,500 was paid in Fiscal 2017 and \$37,500 was paid in Fiscal 2018.
- (3) 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, 2019, as filed with the SEC.
- (4) 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, 2019, as filed with the SEC.
- (5) 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.
- (6) These amounts represent the 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."

**Outstanding Equity Awards at Fiscal Year End**

The following table shows certain information regarding outstanding equity awards as of March 31, 2019 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	913,593 (6)	1,174,619	\$ 2.73	4/24/2027			158,706 (9)	\$ 157,436	
	112,500 (10)	487,500	\$ 1.84	5/24/2028	120,867 (11)	\$ 119,900			
	— (12)	1,350,000	\$ 1.135	8/15/2028					
Craig Kussman	206,250 (4)	123,750	\$ 4.01	8/23/2026	49,500 (5)	\$ 49,104			
					123,750 (7)	\$ 122,760			
	56,250 (10)	243,750	\$ 1.84	5/24/2028	60,433 (11)	\$ 59,950			
	— (12)	675,000	\$ 1.135	8/15/2028					
Jennifer Kinsbruner Bush, JD	150,000 (1)	-	\$ 6.84	11/6/2024					
	117,188 (2)	7,812	\$ 4.92	6/4/2025					
	68,750 (6)	31,250	\$ 3.99	7/11/2026	15,625 (3)	\$ 15,500			
					15,312 (7)	\$ 15,190			
					106,875 (8)	\$ 106,020			
	53,125 (10)	230,208	\$ 1.84	5/24/2028	57,076 (11)	\$ 56,619			
	— (12)	675,000	\$ 1.135	8/15/2028					

- (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 will vest and become 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 will vest and settle 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, 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 will vest and settle 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, 2019, no 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) The stock options will vest 25% 1 year from the grant date, on August 15, 2019, and the remaining option shares will vest on a quarterly basis over the next 12 quarters (for a total vesting period of 48 months from the Vesting Commencement Date).

## 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, 2019, filed with the SEC on June 3, 2019 (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 four directors, each of whom is an “independent director” as defined under the listing standards for the Nasdaq Stock 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](http://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, 2019 and 2018 be included in the Company’s Form 10-K and filed with the SEC.

The Audit Committee of the Board of Directors:

*James T. Glover (Chair)*  
*Robert Baltera, Jr.*  
*Tamar D. Howson*  
*Richard Maroun, JD*  
*Carolyn Beaver*

## CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

During Fiscal 2019 and Fiscal 2018, 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 2019 and Fiscal 2018 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.

### *Research Services Agreement with Cirius Therapeutics, Inc.*

In August 2017, the Company entered into a research services agreement with Cirius Therapeutics, Inc., an entity for which Robert Baltera, Jr., a director of the Company, serves as Chief Executive Officer and President. Under this agreement, the Company is providing standard research services to Cirius Therapeutics, Inc. utilizing its ExVive™ Liver Tissue platform. The Company has provided ExVive™ Liver Tissue Services for Cirius in the amount of \$281,000 to date, of which \$120,000 and \$161,000 was recognized as revenue in the years ended March 31, 2019 and March 31, 2018, respectively. The agreement with Cirius Therapeutics does not require the Company to make any payments to Cirius Therapeutics or Mr. Baltera, and Mr. Baltera has no direct interest in the transaction.

The Company entered into the agreement with Cirius Therapeutics 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, a committee of the Board of Directors comprised entirely of independent, non-employee directors approved the Company’s transactions with Cirius Therapeutics in accordance with the Related Party Transaction Policy and Procedures described below.

In addition, the Company’s Board evaluated Mr. Baltera’s continued status as an “independent” director in light of the Company’s transactions with Cirius Therapeutics. Based on that evaluation, the Board determined that Mr. Baltera continues to qualify as an independent director in accordance with the listing standards of the Nasdaq Stock Market and the rules and regulations of the SEC. The Board also determined that Mr. Baltera continues to qualify as an “independent” director for purposes of his service on the Company’s Audit and Compensation Committees, and that he also qualifies as a “non-employee director” for purposes of Rule 16b-3 under the Exchange Act and as an “outside director” for purposes of Section 162(m) of the Internal Revenue Code of 1986, as amended.

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

In November 2017, the Company entered into a collaboration agreement with Viscient Biosciences, Inc. to develop a custom research platform for studying liver disease. Keith Murphy, who served on the Company’s Board of Directors until August 2017 and as the Company’s Chief Executive Officer and President until April 2017, is the Chief Executive Officer and President of Viscient Biosciences. Mr. Murphy is also a 10% or greater stockholder of Viscient Biosciences. Under this agreement and its amendments, the Company is providing research services to Viscient Biosciences in exchange for cash payments. The Company also expects that the research platform being developed through the collaboration will enable it to expand its current service portfolio for compound screening in disease models and facilitate future drug discovery work for other customers. Viscient Biosciences intends to use the research platform to target early discovery work for non-alcoholic fatty liver disease (“NAFLD”) and non-alcoholic steatohepatitis (“NASH”). Under this agreement and its amendments, the Company provided research services to Viscient amounting to \$385,000 recognized as revenue in the year ended March 31, 2018. In September 2018, Viscient purchased study materials from Organovo in the amount of \$2,000 to date, pursuant to the terms of a Quote, of which \$2,000 was recognized as revenue in the year ended March 31, 2019. In November 2018, Viscient executed a Quote to purchase research services from Organovo in the amount of \$142,000, of which \$42,000 was recognized as revenue in the year ended March 31, 2019. Additionally, Viscient entered into multiple Quotes throughout the 2018 and 2019 fiscal years to purchase primary human cell-based products from our subsidiary, Samsara, in the amount of \$165,000 to date, of which \$96,000 and \$14,000 were recognized as revenue in the years ended March 31, 2019 and March 31, 2018, respectively. The agreement with Viscient Biosciences does not require the Company to make any payments to Viscient Biosciences or Mr. Murphy, and Mr. Murphy has no direct interest in the transaction.

The Company entered into the agreement with Viscient Biosciences 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 Biosciences 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 2020 ANNUAL MEETING**

Stockholders interested in submitting a proposal for consideration at our 2020 Annual Meeting must do so by sending the proposal to our Corporate Secretary at Organovo Holdings, Inc., 6275 Nancy Ridge Dr., Suite 110, San Diego, California 92121. Under the SEC's proxy rules, the deadline for submission of proposals to be included in our proxy materials for the 2020 Annual Meeting is March \_\_, 2020, 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 2019 Annual Meeting (i.e., July \_\_, 2019). Accordingly, in order for a stockholder proposal to be considered for inclusion in our proxy materials for the 2020 Annual Meeting, any such stockholder proposal must be received by our Corporate Secretary on or before March \_\_, 2020, 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 \_\_, 2020 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 2019 Annual Meeting (i.e., July \_\_, 2019) 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 2020 Annual Meeting, such a proposal must be received by the Company on or after May \_\_, 2020 but no later than June \_\_, 2020. If the date of the 2020 Annual Meeting is advanced by more than 30 days, or delayed by more than 60 days, from the anniversary date of the 2019 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., 6275 Nancy Ridge Dr., Suite 110, San Diego, California 92121, 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.proxydocs.com/onvo](http://www.proxydocs.com/onvo).

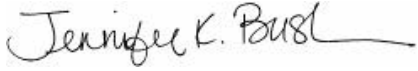
Some brokers household proxy materials, delivering a single Proxy Statement or notice to multiple stockholders sharing an address unless contrary instructions have been received from the affected stockholders. Once you have received notice from your broker that

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, 2019 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., 6275 Nancy Ridge Dr., Suite 110, San Diego, California 92121, 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

A handwritten signature in cursive script that reads "Jennifer K. Bush". The signature is written in black ink and includes a long horizontal flourish extending to the right.

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



**Appendix A**

**CERTIFICATE OF SECOND AMENDMENT  
TO THE  
CERTIFICATE OF INCORPORATION  
OF  
ORGANOVO HOLDINGS, INC.**

Organovo Holdings, Inc. (the "corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "DGCL"), does hereby certify that:

- A. The name of this corporation is Organovo Holdings, Inc. and the date on which the Certificate of Incorporation of this corporation was originally filed with the Secretary of State of the State of Delaware was January 27, 2012 (the "Certificate of Incorporation").
- B. The date on which the first amendment to the Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware was July 26, 2018.
- C. The Board of Directors of the corporation has duly adopted resolutions proposing and declaring advisable that the Certificate of Incorporation be further amended as set forth herein and calling for the consideration and approval thereof at a meeting of the stockholders of the corporation.
- D. The Certificate of Incorporation is hereby further amended to add the following paragraph as the last paragraph of ARTICLE IV in the form below:

**"Reverse Stock Split.** Upon the effectiveness of the filing of this Certificate of Second Amendment (the "*Effective Time*"), each share of the corporation's common stock, \$0.001 par value per share (the "*Old Common Stock*"), either issued or outstanding or held by the corporation as treasury stock, immediately prior to the Effective Time, will be automatically reclassified (without any further act) into a smaller number of shares such that each five (5) to twenty (20) shares of Old Common Stock issued and outstanding or held by the Company as treasury stock immediately prior to the Effective Time is reclassified into one share of Common Stock, \$0.001 par value per share, of the corporation (the "*New Common Stock*"), the exact ratio within such range to be determined by the Board of Directors of the corporation prior to the Effective Time and publicly announced by the corporation (the "Reverse Stock Split"). The corporation shall not issue fractional shares of New Common Stock. The reverse stock split shall not increase or decrease the amount of stated capital or paid-in surplus of the corporation, provided that any fractional share that would otherwise be issuable as a result of the reverse stock split shall be rounded up to the nearest whole share of New Common Stock. As soon as practicable following the Effective Time, the corporation will cause the corporation's exchange agent and registrar to issue new book entries representing the number of shares of the New Common Stock into which such shares of Old Common Stock shall have been reclassified."

IN WITNESS WHEREOF, Organovo Holdings, Inc. has caused this Certificate of Second Amendment to be executed by its duly authorized officer on this day of September\_\_\_\_\_, 2019.

**ORGANOVO HOLDINGS, INC.**

By: \_\_\_\_\_  
Taylor Crouch  
*Chief Executive Officer and President*