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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, DC 20549**

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**SCHEDULE 14A  
(Rule 14a-101)**

**INFORMATION REQUIRED IN PROXY STATEMENT**

**SCHEDULE 14A INFORMATION**

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

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

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

**Homology Medicines, Inc.**

(Name of Registrant as Specified in its Charter)

(Name of Person(s) Filing Proxy Statement, if Other Than the Registrant)

Payment of Filing Fee (Check the appropriate box):

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

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

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

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

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

Fee paid previously with preliminary materials:

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

(1) Amount previously paid:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

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# NOTICE & PROXY STATEMENT

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## Annual Meeting of Stockholders

June 10, 2020  
8:30 a.m. (Eastern time)

**HOMOLOGY MEDICINES, INC.**  
**ONE PATRIOTS PARK**  
**BEDFORD, MASSACHUSETTS 01730**

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April 28, 2020

To Our Stockholders:

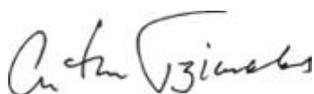
You are cordially invited to attend the 2020 Annual Meeting of Stockholders (the “Annual Meeting”) of Homology Medicines, Inc. at 8:30 a.m. Eastern time, on Wednesday, June 10, 2020. In light of the ongoing outbreak of the novel coronavirus (COVID-19), the Annual Meeting will be a completely virtual meeting, which will be conducted via live webcast, providing a consistent experience to all shareholders regardless of location. You will be able to attend the Annual Meeting online, vote your shares electronically and submit your questions during the Annual Meeting at [www.virtualshareholdermeeting.com/FIXX2020](http://www.virtualshareholdermeeting.com/FIXX2020). There will not be a physical meeting location and you will not be able to attend the Annual Meeting in person. For further information on how to participate in the meeting, please see the section entitled “Who can attend the Annual Meeting?” on page 3 of the accompanying proxy statement.

The Notice of Annual Meeting of Stockholders and Proxy Statement on the following pages describe the matters to be presented at the Annual Meeting.

Whether or not you participate in the Annual Meeting online, it is important that your shares be represented and voted at the Annual Meeting. Therefore, I urge you to promptly vote and submit your proxy by phone, via the Internet, or, if you received paper copies of these materials, by signing, dating and returning the enclosed proxy card in the enclosed envelope, which requires no postage if mailed in the United States. Note that in light of possible disruptions in mail service related to the ongoing outbreak of COVID-19, we encourage stockholders to submit their proxy via the Internet or telephone. If you have previously received our Notice of Internet Availability of Proxy Materials, then instructions regarding how you can vote are contained in that notice. If you have received a proxy card, then instructions regarding how you can vote are contained on the proxy card. If you decide to attend the Annual Meeting online, you will be able to vote your shares electronically, even if you have previously submitted your proxy.

Thank you for your support.

Sincerely,



Arthur O. Tzianabos, Ph.D.  
President, Chief Executive Officer and Director

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**Notice of Annual Meeting of Stockholders  
To Be Held Wednesday, June 10, 2020**

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**HOMOLOGY MEDICINES, INC.  
ONE PATRIOTS PARK  
BEDFORD, MASSACHUSETTS 01730**

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The Annual Meeting of Stockholders (the “Annual Meeting”) of Homology Medicines, Inc., a Delaware corporation (the “Company”), will be held at 8:30 a.m. Eastern time on Wednesday, June 10, 2020, online at [www.virtualshareholdermeeting.com/FIXX2020](http://www.virtualshareholdermeeting.com/FIXX2020), for the following purposes:

- To elect Steven Gillis, Ph.D., Richard J. Gregory, Ph.D., and Kush M. Parmar, M.D., Ph.D. as Class II directors to serve until the 2023 Annual Meeting of Stockholders, and until their respective successors shall have been duly elected and qualified;
- To ratify the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020; and
- To transact such other business as may properly come before the Annual Meeting or any continuation, postponement, or adjournment of the Annual Meeting.

Holders of record of our Common Stock as of the close of business on April 17, 2020 are entitled to notice of and to vote at the Annual Meeting, or any continuation, postponement or adjournment of the Annual Meeting. A complete list of such stockholders will be open to the examination of any stockholder for a period of ten days prior to the Annual Meeting for a purpose germane to the meeting by sending an email to [IR@homologymedicines.com](mailto:IR@homologymedicines.com), stating the purpose of the request and providing proof of ownership of Company stock. The list of these stockholders will also be available on the bottom of your screen during the Annual Meeting after entering the 16-digit control number included on your Notice of Internet Availability of Proxy Materials, on your proxy card or on the instructions that accompanied your proxy materials. The Annual Meeting may be continued or adjourned from time to time without notice other than by announcement at the Annual Meeting.

**It is important that your shares be represented regardless of the number of shares you may hold. Whether or not you plan to participate in the Annual Meeting, we urge you to vote your shares via the toll-free telephone number or over the Internet, as described in the enclosed materials. If you received a copy of the proxy card by mail, you may sign, date and mail the proxy card in the enclosed return envelope. Note that in light of possible disruptions in mail service related to the ongoing outbreak of the novel coronavirus (COVID-19), we encourage stockholders to submit their proxy via the Internet or telephone. Promptly voting your shares will ensure the presence of a quorum at the Annual Meeting and will save us the expense of further solicitation. Submitting your proxy now will not prevent you from voting your shares at the Annual Meeting if you desire to do so, as your proxy is revocable at your option.**

By Order of the Board of Directors



W. Bradford Smith  
Chief Financial Officer, Treasurer and Secretary

Bedford, Massachusetts  
April 28, 2020

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PROXY STATEMENT

HOMOLOGY MEDICINES, INC.  
ONE PATRIOTS PARK  
BEDFORD, MASSACHUSETTS 01730

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This proxy statement is furnished in connection with the solicitation by the Board of Directors of Homology Medicines, Inc. (the “Board” or the “Board of Directors”) of proxies to be voted at our Annual Meeting of Stockholders to be held on Wednesday, June 10, 2020 (the “Annual Meeting”), at 8:30 a.m. Eastern time, and at any continuation, postponement, or adjournment of the Annual Meeting. The Annual Meeting will be a completely virtual meeting, which will be conducted via live webcast. You will be able to attend the Annual Meeting online and submit your questions during the meeting by visiting [www.virtualshareholdermeeting.com/FIXX2020](http://www.virtualshareholdermeeting.com/FIXX2020) and entering your 16-digit control number included on your Notice of Internet Availability of Proxy Materials (the “Internet Notice”), on your proxy card or on the instructions that accompanied your proxy materials. Holders of record of shares of our common stock, \$0.0001 par value per share, as of the close of business on April 17, 2020 (the “Record Date”), will be entitled to notice of and to vote at the Annual Meeting and any continuation, postponement, or adjournment of the Annual Meeting. As of the Record Date, there were 45,213,128 shares of common stock outstanding and entitled to vote at the Annual Meeting. Each share of common stock is entitled to one vote on any matter presented to stockholders at the Annual Meeting.

This proxy statement and the Company’s Annual Report to Stockholders for the year ended December 31, 2019 (the “2019 Annual Report”) will be released on or about April 28, 2020 to our stockholders on the Record Date.

In this proxy statement, “Homology”, “Company”, “we”, “us”, and “our” refer to Homology Medicines, Inc.

**IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE STOCKHOLDER MEETING TO BE HELD ON WEDNESDAY, JUNE 10, 2020**

**This Proxy Statement and our 2019 Annual Report to Stockholders are available at <http://www.proxyvote.com/Proposals>**

At the Annual Meeting, our stockholders will be asked:

- To elect Steven Gillis, Ph.D., Richard J. Gregory, Ph.D., and Kush M. Parmar, M.D., Ph.D. as Class II directors to serve until the 2023 Annual Meeting of Stockholders, and until their respective successors shall have been duly elected and qualified;
- To ratify the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020; and
- To transact such other business as may properly come before the Annual Meeting or any continuation, postponement, or adjournment of the Annual Meeting.

We know of no other business that will be presented at the Annual Meeting. If any other matter properly comes before the stockholders for a vote at the Annual Meeting, however, the proxy holders named on the Company’s proxy card will vote your shares in accordance with their best judgment.

**Recommendations of the Board**

The Board of Directors recommends that you vote your shares as indicated below. If you return a properly completed proxy card, or vote your shares by telephone or Internet, your shares of common stock will be voted on your behalf as you direct. If not otherwise specified, the shares of common stock represented by the proxies will be voted, and the Board of Directors recommends that you vote:

- FOR the election of Steven Gillis, Ph.D., Richard J. Gregory, Ph.D., and Kush M. Parmar, M.D., Ph.D. as Class II Directors; and
- FOR the ratification of the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020.

If any other matter properly comes before the stockholders for a vote at the Annual Meeting, the proxy holders named on the Company's proxy card will vote your shares in accordance with their best judgment.

### **Information About This Proxy Statement**

**Why you Received this Proxy Statement.** You are viewing or have received these proxy materials because Homology's Board of Directors is soliciting your proxy to vote your shares at the Annual Meeting. This proxy statement includes information that we are required to provide to you under the rules of the Securities and Exchange Commission ("SEC") and that is designed to assist you in voting your shares.

**Notice of Internet Availability of Proxy Materials.** As permitted by SEC rules, Homology is making this proxy statement and its 2019 Annual Report available to its stockholders electronically via the Internet. On or about April 28, 2020, we mailed to our stockholders an Internet Notice containing instructions on how to access this proxy statement and our 2019 Annual Report and vote online. If you received an Internet Notice by mail, you will not receive a printed copy of the proxy materials in the mail unless you specifically request them. Instead, the Internet Notice instructs you on how to access and review all of the important information contained in the proxy statement and 2019 Annual Report. The Internet Notice also instructs you on how you may submit your proxy over the Internet. If you received an Internet Notice by mail and would like to receive a printed copy of our proxy materials, you should follow the instructions for requesting such materials contained on the Internet Notice.

**Printed Copies of Our Proxy Materials.** If you received printed copies of our proxy materials, then instructions regarding how you can vote are contained on the proxy card included in the materials.

**Householding.** The SEC's rules permit us to deliver a single set of proxy materials to one address shared by two or more of our stockholders. This delivery method is referred to as "householding" and can result in significant cost savings. To take advantage of this opportunity, we have delivered only one set of proxy materials to multiple stockholders who share an address, unless we received contrary instructions from the impacted stockholders prior to the mailing date. We agree to deliver promptly, upon written or oral request, a separate copy of the proxy materials, as requested, to any stockholder at the shared address to which a single copy of those documents was delivered. If you prefer to receive separate copies of the proxy materials, contact Broadridge Financial Solutions, Inc. at 1-866-540-7095 or in writing at Broadridge, Householding Department, 51 Mercedes Way, Edgewood, New York 11717.

If you are currently a stockholder sharing an address with another stockholder and wish to receive only one copy of future proxy materials for your household, please contact Broadridge at the above phone number or address.

## QUESTIONS AND ANSWERS ABOUT THE 20 20 ANNUAL MEETING OF STOCKHOLDERS

### **Who is entitled to vote at the Annual Meeting?**

The Record Date for the Annual Meeting is April 17, 2020. You are entitled to vote at the Annual Meeting only if you were a stockholder of record at the close of business on that date, or if you hold a valid proxy for the Annual Meeting. Each outstanding share of common stock is entitled to one vote for all matters before the Annual Meeting. At the close of business on the Record Date, there were 45,213,128 shares of common stock outstanding and entitled to vote at the Annual Meeting.

### **What is the difference between being a “record holder” and holding shares in “street name”?**

A record holder holds shares in his or her name. Shares held in “street name” means shares that are held in the name of a bank or broker on a person’s behalf.

### **Am I entitled to vote if my shares are held in “street name”?**

Yes. If your shares are held by a bank or a brokerage firm, you are considered the “beneficial owner” of those shares held in “street name.” If your shares are held in street name, these proxy materials are being provided to you by your bank or brokerage firm, along with a voting instruction card if you received printed copies of our proxy materials. As the beneficial owner, you have the right to direct your bank or brokerage firm how to vote your shares, and the bank or brokerage firm is required to vote your shares in accordance with your instructions. If your shares are held in street name, please refer to the information provided by your bank, broker or other nominee on how to submit your voting instructions.

### **Who can attend the Annual Meeting?**

You may attend the Annual Meeting online only if you are a Homology stockholder who is entitled to vote at the Annual Meeting, or if you hold a valid proxy for the Annual Meeting. There will not be a physical meeting location and you will not be able to attend in person. You may attend and participate in the Annual Meeting by visiting the following website: [www.virtualshareholdermeeting.com/FIXX2020](http://www.virtualshareholdermeeting.com/FIXX2020) . To attend and participate in the Annual Meeting, you will need the 16-digit control number included in your Internet Notice, on your proxy card or on the instructions that accompanied your proxy materials. If your shares are held in “street name,” you should contact your bank or broker to obtain your 16-digit control number or otherwise vote through the bank or broker. If you lose your 16-digit control number, you may join the Annual Meeting as a “Guest” but you will not be able to vote, ask questions or access the list of stockholders as of the Record Date. The meeting webcast will begin promptly at 8:30 a.m. Eastern time. We encourage you to access the meeting prior to the start time to allow ample time for check-in procedures.

### **Why hold a virtual meeting?**

In light of the ongoing outbreak of the novel coronavirus (COVID-19), and as part of our effort to maintain a safe and healthy environment for our directors, members of management and stockholders who wish to attend the Annual Meeting, we believe that hosting a virtual meeting this year is in the best interest of the Company and its stockholders. A virtual meeting also enables increased stockholder attendance and participation because stockholders can participate from any location around the world. There will not be a physical meeting location and you will not be able to attend the meeting in person. You will be able to attend the Annual Meeting online and submit your questions by visiting [www.virtualshareholdermeeting.com/FIXX2020](http://www.virtualshareholdermeeting.com/FIXX2020) . You also will be able to vote your shares electronically at the Annual Meeting by following the instructions above.

### **What if during the check-in time or during the Annual Meeting I have technical difficulties or trouble accessing the virtual meeting website?**

We will have technicians ready to assist you with any technical difficulties you may have accessing the virtual meeting website. If you encounter any technical difficulties with the virtual meeting platform on the meeting day, please call the following applicable number for technical support: 800-586-1548 (United States); 303-562-9288 (International).

### **Will there be a question and answer session during the Annual Meeting?**

As part of the Annual Meeting, we will hold a live Q&A session, during which we intend to answer questions submitted during the meeting that are pertinent to the Company and the meeting matters, as time permits.

### **How many shares must be present to hold the Annual Meeting?**

A quorum must be present at the Annual Meeting for any business to be conducted. The presence at the Annual Meeting, online or by proxy, of the holders of a majority in voting power of the common stock issued and outstanding and entitled to vote on the Record Date will constitute a quorum.

### **What if a quorum is not present at the Annual Meeting?**

If a quorum is not present at the scheduled time of the Annual Meeting, the Chairperson of the Annual Meeting is authorized by our Amended and Restated Bylaws to adjourn the meeting, without the vote of stockholders.

### **What does it mean if I receive more than one Internet Notice or more than one set of proxy materials?**

It means that your shares are held in more than one account at the transfer agent and/or with banks or brokers. Please vote all of your shares. To ensure that all of your shares are voted, for each Internet Notice or set of proxy materials, please submit your proxy by phone, via the Internet, or, if you received printed copies of the proxy materials, by signing, dating and returning the enclosed proxy card in the enclosed envelope.

### **How do I vote?**

*Stockholders of Record.* If you are a stockholder of record, you may vote:

- by Internet—You can vote over the Internet at [www.proxyvote.com](http://www.proxyvote.com) by following the instructions on the Internet Notice or proxy card;
- by Telephone—You can vote by telephone by calling 1-800-690-6903 and following the instructions on the Internet Notice or proxy card;
- by Mail—You can vote by mail by signing, dating and mailing the proxy card, which you may have received by mail; or
- Electronically at the Meeting—If you attend the meeting online, you will need the 16-digit control number included in your Internet Notice, on your proxy card or on the instructions that accompanied your proxy materials to vote electronically during the meeting.

Internet and telephone voting facilities for stockholders of record will be available 24 hours a day and will close at 11:59 p.m., Eastern time, on June 9, 2020. To participate in the Annual Meeting, including to vote via the Internet or telephone, you will need the 16-digit control number included on your Internet Notice, on your proxy card or on the instructions that accompanied your proxy materials.

Whether or not you expect to attend the Annual Meeting online, we urge you to vote your shares as promptly as possible to ensure your representation and the presence of a quorum at the Annual Meeting. If you submit your proxy, you may still decide to attend the Annual Meeting and vote your shares electronically. Note that in light of possible disruptions in mail service related to the ongoing outbreak of COVID-19, we encourage stockholders to submit their proxy via the Internet or telephone.

*Beneficial Owners of Shares Held in “Street Name.”* If your shares are held in street name through a bank or broker, you will receive instructions on how to vote from the bank or broker. You must follow their instructions in order for your shares to be voted. Internet and telephone voting also may be offered to stockholders owning shares through certain banks and brokers. If your shares are not registered in your own name and you would like to vote your shares electronically at the Annual Meeting, you should contact your bank or broker to obtain your 16-digit control number or otherwise vote through the bank or broker. If you lose your 16-digit control number, you may join the Annual Meeting as a “Guest” but you will not be able to vote, ask questions or access the list of stockholders as of the Record Date. You will need to obtain your own Internet access if you choose to attend the Annual Meeting online and/or vote over the Internet.

### **Can I change my vote after I submit my proxy?**

Yes.

If you are a registered stockholder, you may revoke your proxy and change your vote:

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- by submitting a duly executed proxy bearing a later date;
- by granting a subsequent proxy through the Internet or telephone;
- by giving written notice of revocation to the Secretary of Homology prior to or at the Annual Meeting; or
- by voting electronically at the Annual Meeting.

Your most recent proxy card or Internet or telephone proxy is the one that is counted. Your attendance at the Annual Meeting by itself will not revoke your proxy unless you give written notice of revocation to the Secretary before your proxy is voted or you vote electronically at the Annual Meeting.

If your shares are held in street name, you may change or revoke your voting instructions by following the specific directions provided to you by your bank or broker, or you may vote electronically at the Annual Meeting by obtaining a legal proxy from your bank or broker.

### **Who will count the votes?**

A representative of Broadridge Financial Solutions, Inc., our inspector of election, will tabulate and certify the votes.

### **What if I do not specify how my shares are to be voted?**

If you submit a proxy but do not indicate any voting instructions, the persons named as proxies will vote in accordance with the recommendations of the Board of Directors. The Board of Directors' recommendations are indicated on page 1 of this proxy statement, as well as with the description of each proposal in this proxy statement.

### **Will any other business be conducted at the Annual Meeting?**

We know of no other business that will be presented at the Annual Meeting. If any other matter properly comes before the stockholders for a vote at the Annual Meeting, however, the proxy holders named on the Company's proxy card will vote your shares in accordance with their best judgment.

### **How many votes are required for the approval of the proposals to be voted upon and how will abstentions and broker non-votes be treated?**

<b>Proposal</b>	<b>Votes required</b>	<b>Effect of Votes Withheld / Abstentions and Broker Non-Votes</b>
<u>Proposal 1</u> : Election of Directors	The plurality of the votes cast. This means that the three nominees receiving the highest number of affirmative "FOR" votes will be elected as Class II Directors.	Votes withheld and broker non-votes will have no effect.
<u>Proposal 2</u> : Ratification of Appointment of Independent Registered Public Accounting Firm	The affirmative vote of the holders of a majority in voting power of the votes cast affirmatively or negatively.	Abstentions will have no effect. We do not expect any broker non-votes on this proposal.

### **What is a "vote withheld" and an "abstention" and how will votes withheld and abstentions be treated?**

A "vote withheld," in the case of the proposal regarding the election of directors, or an "abstention," in the case of the proposal regarding the ratification of the appointment of Deloitte & Touche LLP as our independent registered public accounting firm, represents a stockholder's affirmative choice to decline to vote on a proposal. Votes withheld and abstentions are counted as present and entitled to vote for purposes of determining a quorum. Votes withheld have no effect on the election of directors. Abstentions have no effect on the ratification of the appointment of Deloitte & Touche LLP.

**What are broker non-votes and do they count for determining a quorum?**

Generally, broker non-votes occur when shares held by a broker in “street name” for a beneficial owner are not voted with respect to a particular proposal because the broker (1) has not received voting instructions from the beneficial owner and (2) lacks discretionary voting power to vote those shares. A broker is entitled to vote shares held for a beneficial owner on routine matters, such as the ratification of the appointment of Deloitte & Touche LLP as our independent registered public accounting firm, without instructions from the beneficial owner of those shares. On the other hand, absent instructions from the beneficial owner of such shares, a broker is not entitled to vote shares held for a beneficial owner on non-routine matters, such as the election of directors. Broker non-votes count for purposes of determining whether a quorum is present.

**Where can I find the voting results of the Annual Meeting?**

We plan to announce preliminary voting results at the Annual Meeting and we will report the final results in a Current Report on Form 8-K, which we intend to file with the SEC after the Annual Meeting.

## PROPOSALS TO BE VOTED ON

### **Proposal 1: Election of Directors**

As set forth in our Restated Certificate of Incorporation, the Board of Directors is currently divided into three classes with staggered, three-year terms. At each annual meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. The current class structure is as follows: Class I, whose term will expire at the 2022 Annual Meeting of Stockholders and whose subsequent term will expire at the 2025 Annual Meeting of Stockholders; Class II, whose term will expire at the Annual Meeting and whose subsequent term will expire at the 2023 Annual Meeting of Stockholders; and Class III, whose term will expire at the 2021 Annual Meeting of Stockholders and whose subsequent term will expire at the 2024 Annual Meeting of Stockholders. We currently have seven (7) directors on our Board. The current Class I Director is Alise S. Reicin, M.D.; the current Class II Directors are Steven Gillis, Ph.D., Richard J. Gregory, Ph.D., and Kush M. Parmar, M.D., Ph.D.; and the current Class III Directors are Matthew R. Patterson, Mary Thistle and Arthur O. Tzianabos, Ph.D.

Our Restated Certificate of Incorporation and Amended and Restated Bylaws provide that the authorized number of directors may be changed only by resolution of the Board of Directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our Board of Directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change in control of our Company. Our directors may be removed only for cause by the affirmative vote of the holders of at least two-thirds of our outstanding voting stock entitled to vote in the election of directors.

### **Nominees for Election as Directors**

At the Annual Meeting, three (3) Class II Directors are to be elected to hold office until the Annual Meeting of Stockholders to be held in 2023 and until each director's successor is elected and qualified or until each director's earlier death, resignation or removal. We currently have three (3) Class II Directors: Steven Gillis, Ph.D., who has served on our Board since 2016, and Richard J. Gregory, Ph.D. and Kush M. Parmar, M.D., Ph.D., both of whom have served on our Board since 2015. The Board has nominated all three director candidates for election as Class II Directors at the Annual Meeting.

If you submit a proxy but do not indicate any voting instructions, the persons named as proxies will vote the shares of common stock represented thereby for the election as Class II Directors of the persons whose names and biographies appear below. In the event that any of Dr. Gillis, Dr. Gregory or Dr. Parmar should become unable to serve, or for good cause will not serve, as a director, it is intended that votes will be cast for a substitute nominee designated by our Board or the Board may elect to reduce its size. The Board of Directors has no reason to believe that any of Dr. Gillis, Dr. Gregory or Dr. Parmar will be unable to serve if elected. Each of Dr. Gillis, Dr. Gregory and Dr. Parmar has consented to being named in this proxy statement and to serve if elected.

### **Vote required**

The proposal regarding the election of directors requires the approval of a plurality of the votes cast. This means that the three nominees receiving the highest number of affirmative "FOR" votes will be elected as Class II Directors. Votes withheld and broker non-votes are not considered to be votes cast and, accordingly, will have no effect on the outcome of the vote on this proposal.

## Recommendation of the Board of Directors

➔ **The Board of Directors unanimously recommends a vote FOR the election of the below Class II Director nominees.**

### Class II Director Nominees (term to expire at the 2023 Annual Meeting)

The current members of the Board of Directors who are also nominees for election to the Board of Directors as Class II Directors are as follows:

Name	Age	Position with Homology	Served as a Director Since
Steven Gillis, Ph.D.	67	Director	2016
Richard J. Gregory, Ph.D.	62	Director	2015
Kush M. Parmar, M.D., Ph.D.	39	Chairman of the Board	2015

The principal occupations and business experience, for at least the past five years, of each Class II Director nominee for election at the Annual Meeting are as follows:

#### ***Steven Gillis, Ph.D.***

Steven Gillis, Ph.D. has served as a member of our Board of Directors since 2016. Since 2005, Dr. Gillis has been a managing director at ARCH Venture Partners, a venture capital firm. From 1994 to 2005, Dr. Gillis served as Chief Executive Officer and chairman of the board of directors of Corixa Corporation, which he co-founded in October 1994. Previously, Dr. Gillis served as Director, Head of Research and Development, Chief Scientific Officer and acting Chief Executive Officer of Immunex Corporation, which he co-founded, from 1981 until his departure in 1994. As a former director and chairman of Trubion Pharmaceuticals, Inc., Dr. Gillis led its acquisition by Emergent BioSolutions in the fall 2010. Dr. Gillis currently serves as a director of Takeda Pharmaceutical Company Limited (and as director of Shire plc prior to its acquisition by Takeda) and Pulmatrix, Inc., and serves as a director and chairman of VBI Vaccines Inc. Dr. Gillis also currently serves as a director of several private companies. Dr. Gillis previously served as a director at PhaseRx, Inc. from 2008 to 2018 and at bluebird bio, Inc. from 2011 to 2015. Dr. Gillis received his B.A. in Biology and English from Williams College and his Ph.D. in Biological Science from Dartmouth College. We believe that Dr. Gillis's knowledge of immunology and experience in the venture capital industry, particularly with biotechnology and pharmaceutical companies, qualifies him to serve as a member of our Board of Directors.

#### ***Richard J. Gregory, Ph.D.***

Richard J. Gregory, Ph.D. has served as a member of our Board of Directors since 2015. Prior to his retirement, Dr. Gregory served as Executive Vice President and Chief Scientific Officer of ImmunoGen, Inc., a biotechnology company, from 2015 until August 2019. Prior to joining ImmunoGen, Inc., he spent 25 years at Genzyme Corporation, a biotechnology company, in roles of increasing responsibility, including Senior Vice President and Head of Research from 2003 until Genzyme Corporation's acquisition by Sanofi in 2011, and Head of Research and Development for Genzyme from 2011 through 2014. Dr. Gregory serves as a director of ProMIS Neurosciences, Inc. Dr. Gregory received his B.A. in Science from Virginia Tech and holds a Ph.D. from the University of Massachusetts, Amherst, and completed his post-doctoral work at the Worcester Foundation for Experimental Biology. We believe that Dr. Gregory's knowledge of immunology qualifies him to serve as a member of our Board of Directors.

#### ***Kush M. Parmar, M.D., Ph.D.***

Kush M. Parmar, M.D., Ph.D. has served as a member of our Board of Directors since 2015 and as Chairman of the Board since March 2018. Dr. Parmar is a Managing Partner at 5AM Venture Management LLC, an early stage venture capital firm focused on the life sciences, where he has been since 2010. Before joining 5AM, from 2002 to 2010, he was at Harvard Medical School, where he was an NIH-sponsored M.D./Ph.D. physician scientist fellow in the joint Harvard-MIT Health Sciences and Technology Program. Dr. Parmar currently serves on the boards of numerous private companies. He previously served as a board member or observer for Arvinas, Inc., Achaogen, Inc., Audentes Therapeutics, Inc. (acquired by Astellas Pharma Inc.), Pulmatrix, Inc. and scPharmaceuticals Inc. He is a member of the scientific advisory boards of Penn Medicine, Princeton University's Department of Molecular Biology, and the Grace Science Foundation, and is a fellow of the Society of Kauffman Fellows. Before joining 5AM, Dr. Parmar completed clinical clerkships at the Massachusetts General & Brigham and Women's Hospitals, attended courses at Harvard Business School and consulted for an oncology startup. He also founded a non-profit international development organization, the Cruz Blanca Initiative. He holds an A.B. in Molecular Biology and Medieval Studies from Princeton University, a Ph.D. in Experimental Pathology from Harvard University, and an M.D. from Harvard Medical School. We believe that Dr. Parmar's experience in the life sciences industry,

his experience as a venture capitalist and senior executive, as well as his service on the boards of directors of numero us companies provide him with the qualifications to serve as a director of our Company.

**Class III Directors (terms to expire at the 2021 Annual Meeting)**

The current members of the Board of Directors who are Class III Directors are as follows:

<b>Name</b>	<b>Age</b>	<b>Position with Homology</b>	<b>Served as a Director Since</b>
Matthew R. Patterson	48	Director	2018
Mary Thistle	60	Director	2018
Arthur O. Tzianabos, Ph.D.	57	President, Chief Executive Officer and Director	2016

The principal occupations and business experience, for at least the past five years, of each Class III Director are as follows:

***Matthew R. Patterson***

Matthew R. Patterson has served as a member of our Board of Directors since 2018. Mr. Patterson is the co-founder of Audentes Therapeutics, Inc., a biotechnology company, and has served in the role of Strategic Advisor since January 2020. Previously, he served as its Chief Executive Officer from November 2012 until Audentes’ acquisition by Astellas Pharma Inc. in January 2020. Mr. Patterson also served as Audentes’ Chairman of the board of directors and formerly served as President until May 2018. Prior to that, Mr. Patterson was the Entrepreneur-In-Residence at OrbiMed Advisors LLC. Prior to OrbiMed, Mr. Patterson served in roles at Amicus Therapeutics, Inc., BioMarin Pharmaceutical Inc. and Genzyme Corporation. Mr. Patterson holds a B.A. from Bowdoin College. We believe that Mr. Patterson’s experience in the biotechnology and biopharmaceutical industries, as well as his service on the board of directors of a public company provide him with the qualifications to serve as a director of our Company.

***Mary Thistle***

Mary Thistle has served as a member of our Board of Directors since March 2018. Ms. Thistle has served as the Chief of Staff of the Bill & Melinda Gates Medical Research Institute, a non-profit biotech organization, since January 2018. Prior to that, she held senior leadership positions at Dimension Therapeutics, Inc., a gene therapy company, including Chief Operating Officer from 2016 to 2017 and Chief Business Officer from 2015 to 2016. Prior to joining Dimension Therapeutics, Inc., she spent six years at Cubist Pharmaceuticals, Inc., a biopharmaceutical company, where she held various leadership positions, including Senior Vice President, Business Development from 2014 to 2015, Vice President, Business Development from 2012 to 2013 and Senior Director, Business Development from 2009 to 2012. Prior to that, she held various positions at ViaCell, Inc. and PerkinElmer Inc. Ms. Thistle serves as a director of Enterome SA, a pharmaceutical and diagnostics company based in Paris, France and Cocoon Biotech Inc. Ms. Thistle holds a B.S. in Accounting from the University of Massachusetts, Boston. We believe that Ms. Thistle is qualified to serve on our Board of Directors due to her finance background and industry experience.

***Arthur O. Tzianabos, Ph.D.***

Arthur O. Tzianabos, Ph.D. has served as our President, Chief Executive Officer and member of our Board of Directors since April 2016. Dr. Tzianabos joined Homology from OvaScience, Inc., a biotechnology company (which has since merged with and into Millendo Therapeutics, Inc.), where he served as President and Chief Scientific Officer from September 2013 to March 2016. Prior to OvaScience, Dr. Tzianabos spent eight years at Shire plc, a biotechnology company, where he served in positions of increasing responsibility, including Senior Director, Discovery Research, Vice President, Program Management and Senior Vice President and Head, Research and Early Development. From 1992 to 2005, Dr. Tzianabos was a faculty member at Harvard Medical School and maintained laboratories at the Channing Laboratory, Brigham and Women’s Hospital and the Department of Microbiology and Molecular Genetics at Harvard Medical School. Dr. Tzianabos currently serves as a director of Stoke Therapeutics, Inc. Dr. Tzianabos previously served as a director of BIND Therapeutics, Inc. Dr. Tzianabos holds a B.S. in Biology from Boston College and a Ph.D. in Microbiology from the University of New Hampshire. We believe Dr. Tzianabos’ extensive academic and clinical experience, as well as his knowledge of the industry, qualifies him to serve on our Board of Directors.

**Class I Director (term to expire at the 2022 Annual Meeting)**

The current member of the Board of Directors who is a Class I Director is as follows:

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<u>Name</u>	<u>Age</u>	<u>Position with Homology</u>	<u>Served as a Director Since</u>
Alise S. Reicin, M.D.	59	Director	2019

The principal occupations and business experience, for at least the past five years, of our Class I Director is as follows:

***Alise Reicin, M.D.***

Alise Reicin, M.D. has served as a member of our Board of Directors since July 2019. Dr. Reicin served as President, Global Clinical Development at Celgene Corporation, a pharmaceutical company, from November 2018 to December 2019. Prior to Celgene, she served as Head of Global Clinical Development at EMD Serono, a pharmaceutical company, from May 2015 through October 2018. Prior to EMD Serono, Dr. Reicin served as VP, Program Leadership Oncology at Merck and Co., a pharmaceutical company. She holds a B.A. in Biochemistry from Barnard College of Columbia University and an M.D. from Harvard Medical School. We believe that Dr. Reicin's clinical expertise and leadership roles in the biotechnology and biopharmaceutical industries provide her with the qualifications to serve as a director of our Company.

**Proposal 2: Ratification of Appointment of Independent Registered Public Accounting Firm**

Our Audit Committee of the Board of Directors (the “Audit Committee”) has appointed Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020. Our Board has directed that this appointment be submitted to our stockholders for ratification at the Annual Meeting. Although ratification of our appointment of Deloitte & Touche LLP is not required, we value the opinions of our stockholders and believe that stockholder ratification of our appointment is a good corporate governance practice.

Deloitte & Touche LLP also served as our independent registered public accounting firm for the fiscal year ended December 31, 2019. Neither the accounting firm nor any of its members has any direct or indirect financial interest in or any connection with us in any capacity other than as our auditors, providing audit and non-audit related services. A representative of Deloitte & Touche LLP is expected to attend the Annual Meeting and to have an opportunity to make a statement and be available to respond to appropriate questions from stockholders.

In the event that the appointment of Deloitte & Touche LLP is not ratified by the stockholders, the Audit Committee will consider this fact when it appoints the independent auditors for the fiscal year ending December 31, 2021. Even if the appointment of Deloitte & Touche LLP is ratified, the Audit Committee retains the discretion to appoint a different independent auditor at any time if it determines that such a change is in the interest of the Company.

**Vote Required**

This proposal requires the affirmative vote of the holders of a majority in voting power of the votes cast affirmatively or negatively. Abstentions are not considered to be votes cast and, accordingly, will have no effect on the outcome of the vote on this proposal. Because brokers have discretionary authority to vote on the ratification of the appointment of Deloitte & Touche LLP, we do not expect any broker non-votes in connection with this proposal.

**Recommendation of the Board of Directors**

 **The Board of Directors unanimously recommends a vote FOR the Ratification of the Appointment of Deloitte & Touche LLP as our Independent Registered Public Accounting Firm for the fiscal year ending December 31, 2020.**

**REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS**

The Audit Committee has reviewed Homology’s audited financial statements for the fiscal year ended December 31, 2019 and has discussed these financial statements with management and Homology’s independent registered public accounting firm. The Audit Committee has also received from, and discussed with, Homology’s independent registered public accounting firm various communications that such independent registered public accounting firm is required to provide to the Audit Committee, including the matters required to be discussed by the applicable requirements of the Public Company Accounting Oversight Board (“PCAOB”) and the Securities and Exchange Commission.

Homology’s independent registered public accounting firm also provided the Audit Committee with a formal written statement required by PCAOB Rule 3526 ( *Communications with Audit Committees Concerning Independence* ) describing all relationships between the independent registered public accounting firm and Homology, including the disclosures required by the applicable requirements of the PCAOB regarding the independent registered public accounting firm’s communications with the Audit Committee concerning independence. In addition, the Audit Committee discussed with the independent registered public accounting firm its independence from Homology.

Based on its discussions with management and the independent registered public accounting firm, and its review of the representations and information provided by management and the independent registered public accounting firm, the Audit Committee recommended to the Board of Directors that the audited financial statements be included in Homology’s Annual Report on Form 10-K for the fiscal year ended December 31, 2019.

Mary Thistle (Chair)  
Richard J. Gregory, Ph.D.  
Matthew R. Patterson

**INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FEES AND OTHER MATTERS**

The following table summarizes the fees of Deloitte & Touche LLP, our independent registered public accounting firm, billed to us for each of the last two fiscal years for audit services and billed to us in each of the last two fiscal years for other services (in thousands):

Fee Category	(in thousands)	
	2019	2018
Audit Fees	\$ 602	\$ 395
Audit-Related Fees	—	802
Tax Fees	13	12
All Other Fees	28	2
Total	<u>\$ 643</u>	<u>\$ 1,211</u>

**Audit Fees**

Audit fees consist of fees for the audit of our consolidated financial statements, the review of the unaudited interim financial statements included in our quarterly reports on Form 10-Q and other professional services provided in connection with statutory and regulatory filings or engagements and services associated with the issuance of comfort letters and the issuance of consents on registration statements.

**Audit-Related Fees**

Audit-related fees consist of fees for assurance and related services that are reasonably related to the performance of the audit or review of the registrant's financial statements, including for assurance reporting on our historical financial information included in our SEC registration statement in connection with our initial public offering.

**Tax Fees**

Tax fees consist of fees for tax compliance, tax advice, and tax planning services.

**All Other Fees**

All other fees consist of fees for services performed related to the adoption the Financial Accounting Standards Board issued Accounting Standards Update Topic 606, *Revenue from Contracts with Customers* and an annual license fee for use of accounting research software.

**Audit Committee Pre-Approval Policy and Procedures**

The Audit Committee has adopted a policy (the "Pre-Approval Policy") that sets forth the procedures and conditions pursuant to which audit and non-audit services proposed to be performed by the independent auditor may be pre-approved. The Pre-Approval Policy generally provides that we will not engage Deloitte & Touche LLP to render any audit, audit-related, tax or permissible non-audit service unless the service is either (i) explicitly approved by the Audit Committee ("specific pre-approval") or (ii) entered into pursuant to the pre-approval policies and procedures described in the Pre-Approval Policy ("general pre-approval"). Unless a type of service to be provided by Deloitte & Touche LLP has received general pre-approval under the Pre-Approval Policy, it requires specific pre-approval by the Audit Committee or by a designated member of the Audit Committee to whom the committee has delegated the authority to grant pre-approvals. Any proposed services exceeding pre-approved cost levels or budgeted amounts will also require specific pre-approval. For both types of pre-approval, the Audit Committee will consider whether such services are consistent with the SEC's rules on auditor independence. The Audit Committee will also consider whether the independent auditor is best positioned to provide the most effective and efficient service, for reasons such as its familiarity with the Company's business, people, culture, accounting systems, risk profile and other factors, and whether the service might enhance the Company's ability to manage or control risk or improve audit quality. All such factors will be considered as a whole, and no one factor should necessarily be determinative. On an annual basis, the Audit Committee reviews and generally pre-approves the services (and related fee levels or budgeted amounts) that may be provided by Deloitte & Touche LLP without first obtaining specific pre-approval from the Audit Committee. The Audit Committee may revise the list of general pre-approved services from time to time, based on subsequent determinations.

**EXECUTIVE OFFICERS**

The following table identifies our current executive officers:

<b>Name</b>	<b>Age</b>	<b>Position</b>
Arthur O. Tzianabos, Ph.D. (1)	57	President and Chief Executive Officer and Director
W. Bradford Smith (2)	64	Chief Financial Officer, Treasurer and Secretary
Albert Seymour, Ph.D. (3)	52	Chief Scientific Officer
Tim Kelly (4)	51	Chief Technical Operations Officer
Gabriel M. Cohn, M.D. (5)	61	Chief Medical Officer

- (1) See biography on page 9 of this proxy statement.
- (2) W. Bradford Smith has served as our Chief Financial Officer and Treasurer since April 2017 and our Secretary since July 2017. From March 2014 to April 2017, Mr. Smith was Chief Financial Officer of Ocular Therapeutix, Inc., a biopharmaceutical platform company. Prior to joining Ocular Therapeutix, Inc., Mr. Smith served as the Chief Financial Officer of OmniGuide, Inc., a medical device company, from July 2008 to March 2014. Mr. Smith holds a B.S. in Biology from Tufts University and an M.B.A. from the Whittemore School of Business and Economics at the University of New Hampshire.
- (3) Albert Seymour, Ph.D. has served as our Chief Scientific Officer since April 2016. Prior to joining Homology, Dr. Seymour was Senior Vice President, Head of Global Research and Nonclinical Development at Shire plc, a biotechnology company, from 2011 to 2016. Dr. Seymour received his B.A. in Biology from the University of Delaware, an M.S. from Johns Hopkins University School of Medicine and his Ph.D. in Human Genetics from the University of Pittsburgh.
- (4) Tim Kelly has served as our Chief Technical Operations Officer since April 2018, and prior to that, he served as our Senior Vice President of Technical Operations from May 2017 to April 2018. From January 2017 to May 2017, Mr. Kelly served as Head of Technical Operations at Sarepta Therapeutics, Inc., a biopharmaceutical company. Prior to that, Mr. Kelly spent eight years, from 2009 to 2017, at Shire plc, a biotechnology company, where he served most recently as Senior Vice President and Head of Biologics Operating Unit from May 2016 to January 2017, and prior to that served in roles of increasing responsibility, including Interim Head of Technical Operations from August 2015 to April 2016 and Head of Product Strategy & Planning from 2014 to July 2015. He was previously the Head of Technical Operations at UCB S.A. in Belgium. Mr. Kelly also held roles of increasing responsibility at Biogen Idec, including Senior Director of International Operations. Mr. Kelly holds a B.S. with emphasis in Engineering Mechanics from the United States Air Force Academy and an M.B.A. from Troy University.
- (5) Gabriel M. Cohn, M.D. has served as our Chief Medical Officer since December 2019. Prior to joining Homology, Dr. Cohn was Vice President, Clinical Development Lead at AVROBIO, Inc., a clinical-stage gene therapy company, from November 2017 to November 2019. Prior to AVROBIO, Dr. Cohn served as Vice President and Head of Global Clinical and Medical Affairs at OvaScience, Inc., a biotechnology company, from 2015 to July 2017. Prior to that, Dr. Cohn spent seven years at Shire Plc, a biotechnology company, including Shire Human Genetic Therapies (HGT), where he most recently held the position of Senior Medical Director, Clinical Sciences from 2012 to 2015, and prior to that served in roles of increasing responsibility including Interim Global Franchise Medical Lead, Gaucher Disease in 2011 and Medical Director, North America from 2008 to 2011. Prior to joining the biotechnology industry, Dr. Cohn served as the Chief, Division of Clinical and Reproductive Genetics and Medical Director, Genetic Services at Baystate Medical Center and as Assistant Professor at Tufts University School of Medicine. He began his academic career as the Director, Reproductive Genetics at SUNY Health Science Center (HSC) at Syracuse (now Upstate). Dr. Cohn has a B.S. in Biology from Brooklyn College, an M.D. from SUNY HSC at Syracuse School of Medicine and an M.B.A. from University of Massachusetts Amherst.

## CORPORATE GOVERNANCE

### General

Our Board of Directors has adopted Corporate Governance Guidelines, a Code of Business Conduct and Ethics, and charters for the Nominating and Corporate Governance Committee of the Board of Directors (the “Nominating and Corporate Governance Committee”), Audit Committee and the Compensation Committee of the Board of Directors (the “Compensation Committee”) to assist the Board in the exercise of its responsibilities and to serve as a framework for the effective governance of the Company. You can access our current committee charters, our Corporate Governance Guidelines, and our Code of Business Conduct and Ethics in the “Corporate Governance” section of the “Investors” page of our website located at [www.homologymedicines.com](http://www.homologymedicines.com), or by writing to our Secretary at our offices at One Patriots Park, Bedford, MA 01730.

### Board Composition

Our Board of Directors currently consists of seven members: Arthur O. Tzianabos, Ph.D., Steven Gillis, Ph.D., Richard J. Gregory, Ph.D., Kush M. Parmar, M.D., Ph.D., Matthew R. Patterson, Alise S. Reicin, M.D. and Mary Thistle. As set forth in our Restated Certificate of Incorporation, the Board of Directors is currently divided into three classes with staggered, three-year terms. At each annual meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. Our Restated Certificate of Incorporation and Amended and Restated Bylaws provide that the authorized number of directors may be changed only by resolution of the Board of Directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our Board of Directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change in control of our Company. Our directors may be removed only for cause by the affirmative vote of the holders of at least two-thirds in voting power of the outstanding shares of our capital stock entitled to vote in the election of directors.

### Director Independence

Steven Gillis, Ph.D., Richard J. Gregory, Ph.D., Kush M. Parmar, M.D., Ph.D., Matthew R. Patterson, Alise S. Reicin, M.D. and Mary Thistle each qualify as “independent” in accordance with the listing requirements of Nasdaq and Mahendra G. Shah, Ph.D. and Cameron Wheeler, Ph.D. each qualified as “independent” while they served on our Board. The Nasdaq independence definition includes a series of objective tests, including that the director is not, and has not been for at least three years, one of our employees and that neither the director nor any of his family members has engaged in various types of business dealings with us. In addition, as required by Nasdaq rules, our Board of Directors has made a subjective determination as to each independent director that no relationships exist, which, in the opinion of our Board of Directors, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In making these determinations, our Board of Directors reviewed and discussed information provided by the directors and us with regard to each director’s business and personal activities and relationships as they may relate to us and our management, including that Dr. Gillis and Dr. Parmar are affiliated with certain of our significant stockholders. Arthur O. Tzianabos, Ph.D. is not independent because he is the President and Chief Executive Officer of Homology. There are no family relationships among any of our directors or executive officers.

### Director Candidates

The Nominating and Corporate Governance Committee is primarily responsible for searching for qualified director candidates for election to the Board and filling vacancies on the Board. To facilitate the search process, the Nominating and Corporate Governance Committee may solicit current directors and executives of the Company for the names of potentially qualified candidates or ask directors and executives to pursue their own business contacts for the names of potentially qualified candidates. The Nominating and Corporate Governance Committee may also consult with outside advisors or retain search firms to assist in the search for qualified candidates, or consider director candidates recommended by our stockholders. Once potential candidates are identified, the Nominating and Corporate Governance Committee reviews the backgrounds of those candidates, evaluates candidates’ independence from the Company and potential conflicts of interest and determines if candidates meet the qualifications desired by the Nominating and Corporate Governance Committee for candidates for election as a director.

In evaluating the suitability of individual candidates (both new candidates and current Board members), the Nominating and Corporate Governance Committee, in recommending candidates for election, and the Board, in approving (and, in the case of vacancies, appointing) such candidates, may take into account many factors, including: personal and professional integrity, ethics and values; experience in corporate management, such as serving as an officer or former officer of a publicly held company; strong finance experience; experience relevant to the Company’s industry; experience as a board member or executive officer of another publicly

held company; relevant academic expertise or other proficiency in an area of the Company's operations; diversity of expertise and experience in substantive matters pertaining to the Company's business relative to other board members; diversity of background and perspective, including, but not limited to, with respect to age, gender, race, place of residence and specialized experience; practical and mature business judgment, including, but not limited to, the ability to make independent analytical inquiries; and any other relevant qualifications, attributes or skills. The Board evaluates each individual in the context of the Board as a whole, with the objective of assembling a group that can best perpetuate the success of the business and represent stockholder interests through the exercise of sound judgment using its diversity of experience in the several areas. In determining whether to recommend a director for reelection, the Nominating and Corporate Governance Committee may also consider the director's past attendance at meetings and participation in and contributions to the activities of the Board. Each of Steven Gillis, Ph.D. and Kush M. Parmar, M.D., Ph.D., two of our Class II Director nominees, was initially identified as a potential director candidate by one of our stockholders, ARCH Venture Partners and 5AM Venture Management LLC, respectively. Richard J. Gregory, Ph.D., our other Class II Director nominee, was initially identified as a potential director candidate by Kush M. Parmar, M.D., Ph.D.

Stockholders may recommend individuals to the Nominating and Corporate Governance Committee for consideration as potential director candidates by submitting the names of the recommended individuals, together with appropriate biographical information and background materials, to the Nominating and Corporate Governance Committee, c/o Secretary, Homology Medicines, Inc., One Patriots Park, Bedford, MA 01730. In the event there is a vacancy, and assuming that appropriate biographical and background material has been provided on a timely basis, the Committee will evaluate stockholder-recommended candidates by following substantially the same process, and applying substantially the same criteria, as it follows for candidates submitted by others.

### **Communications from Stockholders**

The Board will give appropriate attention to written communications that are submitted by stockholders, and will respond if and as appropriate. Our Secretary is primarily responsible for monitoring communications from stockholders and for providing copies or summaries to the directors as he considers appropriate.

Communications are forwarded to all directors if they relate to important substantive matters and include suggestions or comments that our Secretary and Chairman of the Board consider to be important for the directors to know. In general, communications relating to corporate governance and long-term corporate strategy are more likely to be forwarded than communications relating to ordinary business affairs, personal grievances and matters as to which we tend to receive repetitive or duplicative communications. Stockholders who wish to send communications on any topic to the Board should address such communications to the Board of Directors in writing: c/o Secretary, Homology Medicines, Inc., One Patriots Park, Bedford, MA 01730.

### **Board Leadership Structure and Role in Risk Oversight**

Our Amended and Restated Bylaws and Corporate Governance Guidelines provide our Board of Directors 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. We currently have an independent Chairman of the Board and, with the exception of Dr. Tzianabos, our Board is comprised of independent directors. Our Board believes that separation of the positions of Chairman and Chief Executive Officer reinforces the independence of the Board from management, creates an environment that encourages objective oversight of management's performance and enhances the effectiveness of the Board as a whole. For these reasons, our Board of Directors has concluded that our current leadership structure is appropriate at this time.

However, our Board of Directors will continue to periodically review our leadership structure and may make such changes in the future as it deems appropriate. If, in the future, the Chairman of the Board is a member of management or does not otherwise qualify as independent, our Corporate Governance Guidelines provide for the appointment by the independent directors of a Lead Director. The Lead Director's responsibilities would include, but would not be limited to, presiding over all meetings of the Board of Directors at which the Chairman of the Board is not present, including any executive sessions of the independent directors, approving the Board's meeting schedules and agendas, and acting as liaison between the independent directors of the Board and the Chief Executive Officer and the Chairman of the Board.

Risk assessment and oversight are an integral part of our governance and management processes. Our Board of Directors encourages management to promote a culture that incorporates risk management into our corporate strategy and day-to-day business operations. Management discusses strategic and operational risks at regular management meetings and conducts specific strategic planning and review sessions during the year that include a focused discussion and analysis of the risks facing us. Throughout the year, senior management reviews these risks with the Board of Directors at regular Board meetings as part of management presentations that focus on particular business functions, operations or strategies, and presents the steps taken by management to mitigate or eliminate such risks. Our Board of Directors does not have a standing risk management committee, but rather administers this oversight function

directly through the Board of Directors as a whole, as well as through various standing committees of the Board of Directors that address risks inherent in their respective areas of oversight. In particular, our Board of Directors is responsible for monitoring and assessing strategic risk exposure, including business continuity risks, such as risks relating to the COVID-19 pandemic, and our Audit Committee is responsible for overseeing our major financial and cyber-security risk exposures and the steps our management has taken to monitor and control these exposures. The Audit Committee also monitors compliance with legal and regulatory requirements and considers and approves or disapproves any related person transactions. Our Nominating and Corporate Governance Committee monitors the effectiveness of the Corporate Governance Guidelines. Our Compensation Committee assesses and monitors whether any of our compensation policies and programs has the potential to encourage excessive risk-taking. The Board does not believe that its role in the oversight of our risks affects the Board's leadership structure.

#### **Code of Ethics**

We have a written Code of Business Conduct and Ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. We have posted a current copy of the code on our website, [www.homologymedicines.com](http://www.homologymedicines.com). In addition, we intend to post on our website all disclosures that are required by law or the rules of Nasdaq concerning any amendments to, or waivers from, any provision of the code.

#### **Anti-Hedging Policy**

Our Board of Directors has adopted an Insider Trading Compliance Policy, which applies to all of our directors, officers and employees. The policy prohibits our directors, officers and employees and any entities they control from engaging in all hedging or monetization transactions, such as zero-cost collars and forward sale contracts.

#### **Attendance by Members of the Board of Directors at Meetings**

There were four meetings of the Board of Directors during the fiscal year ended December 31, 2019. During the fiscal year ended December 31, 2019, each director attended at least 75% of the aggregate of (i) all meetings of the Board of Directors and (ii) all meetings of the committees on which the director served during the period in which he or she served as a director.

Under our Corporate Governance Guidelines, which is available on our website at [www.homologymedicines.com](http://www.homologymedicines.com), a director is expected to spend the time and effort necessary to properly discharge his or her responsibilities. Accordingly, a director is expected to regularly prepare for and attend meetings of the Board and all committees on which the director sits (including separate meetings of the independent directors), with the understanding that, on occasion, a director may be unable to attend a meeting. A director who is unable to attend a meeting of the Board or a committee of the Board is expected to notify the Chairman of the Board or the Chairman of the appropriate committee in advance of such meeting, and, whenever possible, participate in such meeting via teleconference in the case of an in-person meeting. We do not maintain a formal policy regarding director attendance at the Annual Meeting; however, it is expected that absent compelling circumstances directors will attend. All of our directors then serving attended the 2019 Annual Meeting of Stockholders.

## COMMITTEES OF THE BOARD

Our Board has established three standing committees—Audit, Compensation and Nominating and Corporate Governance—each of which operates under a written charter that has been approved by our Board.

The members of each of the Board committees and committee Chairpersons are set forth in the following chart.

<u>Name</u>	<u>Audit</u>	<u>Compensation</u>	<u>Nominating and Corporate Governance</u>
Steven Gillis, Ph.D.			Chairperson
Richard J. Gregory, Ph.D.	X	X	
Kush M. Parmar, M.D., Ph.D.		Chairperson	
Matthew R. Patterson	X		
Alise Reicin, M.D.			X
Mary Thistle	Chairperson		

### Audit Committee

Our Audit Committee's responsibilities include:

- appointing, approving the compensation of, and assessing the independence of our independent registered public accounting firm;
- overseeing the work of our independent registered public accounting firm, including through the receipt and consideration of reports from such firm;
- reviewing and discussing with management and the independent registered public accounting firm our annual and quarterly financial statements and related disclosures;
- monitoring our internal control over financial reporting, disclosure controls and procedures and code of business conduct and ethics;
- discussing our risk management policies;
- establishing policies regarding hiring employees from the independent registered public accounting firm and procedures for the receipt and retention of accounting related complaints and concerns;
- meeting independently with our internal auditing staff, if any, independent registered public accounting firm and management;
- reviewing and approving or ratifying any related person transactions; and
- preparing the audit committee report required by the SEC rules (which is included on page 12 of this proxy statement).

The Audit Committee charter is available on our website at [www.homologymedicines.com](http://www.homologymedicines.com). The members of the Audit Committee are Dr. Gregory, Mr. Patterson and Ms. Thistle. Ms. Thistle serves as the Chairperson of the committee. Our Board has affirmatively determined that each of Dr. Gregory, Mr. Patterson and Ms. Thistle is independent for purposes of serving on an audit committee under Rule 10A-3 promulgated under the Exchange Act and the Nasdaq Rules, including those related to Audit Committee membership.

The members of our Audit Committee meet the requirements for financial literacy under the applicable Nasdaq rules. In addition, our Board of Directors has determined that Ms. Thistle qualifies as an "audit committee financial expert," as such term is defined in Item 407(d)(5) of Regulation S-K, and under the similar Nasdaq Rules requirement that the Audit Committee have a financially sophisticated member.

The Audit Committee met four times in 2019.

## **Compensation Committee**

Our Compensation Committee is responsible for assisting the Board in the discharge of its responsibilities relating to the compensation of our executive officers. In fulfilling its purpose, our Compensation Committee has the following principal duties:

- reviewing and approving, or recommending for approval by the Board, the compensation of our CEO and our other executive officers;
- overseeing and administering our cash and equity incentive plans;
- reviewing and making recommendations to the Board of Directors with respect to director compensation;
- reviewing and discussing annually with management our “Compensation Discussion and Analysis,” to the extent required; and
- preparing the annual compensation committee report, to the extent required by SEC rules.

The Compensation Committee generally considers the Chief Executive Officer’s recommendations when making decisions regarding the compensation of non-employee directors and executive officers (other than the Chief Executive Officer). Pursuant to the Compensation Committee’s charter, which is available on our website at [www.homologymedicines.com](http://www.homologymedicines.com), the Compensation Committee has the authority to retain or obtain the advice of compensation consultants, legal counsel and other advisors to assist in carrying out its responsibilities. In 2019, the Compensation Committee engaged Radford, a compensation consulting firm, to assist in making decisions regarding the amount and types of compensation to provide our executive officers and non-employee directors. As part of this process, the Compensation Committee reviewed a compensation assessment provided by Radford comparing our compensation to that of a group of peer companies within our industry and engaged in correspondence with Radford regarding our executive and non-employee director compensation and received input and advice. Radford reports directly to the Compensation Committee. The Compensation Committee has considered the adviser independence factors required under SEC rules as they relate to Radford and has determined that Radford’s work does not raise a conflict of interest.

The Compensation Committee may delegate its authority under its charter to one or more subcommittees as it deems appropriate from time to time. The Compensation Committee may also delegate to an officer the authority to grant equity awards to certain employees, as further described in its charter and subject to the terms of our equity plans.

The members of our Compensation Committee are Drs. Gregory and Parmar. Dr. Parmar serves as the Chairperson of the Compensation Committee. Each member of the Compensation Committee qualifies as an independent director under Nasdaq’s heightened independence standards for members of a compensation committee and as a “non-employee director” as defined in Rule 16b-3 of the Exchange Act.

The Compensation Committee did not meet in 2019.

## **Nominating and Corporate Governance Committee**

Our Nominating and Corporate Governance Committee’s responsibilities include:

- identifying individuals qualified to become board members;
- recommending to the Board of Directors the persons to be nominated for election as directors and to each board committee;
- reviewing and making recommendations to the Board of Directors with respect to management succession planning;
- developing and recommending to the Board of Directors corporate governance principles; and
- overseeing an annual evaluation of the Board of Directors.

The Nominating and Corporate Governance Committee charter is available on our website at [www.homologymedicines.com](http://www.homologymedicines.com). The members of our Nominating and Corporate Governance Committee are Drs. Gillis and Reicin. Dr. Gillis serves as the Chairperson of the Nominating and Corporate Governance Committee. The Nominating and Corporate Governance Committee has the authority to consult with outside advisors or retain search firms to assist in the search for qualified candidates, or consider director candidates recommended by our stockholders.

The Nominating and Corporate Governance Committee met one time during 2019.

EXECUTIVE AND DIRECTOR COMPENSATION

**Executive Compensation**

This section discusses the material components of our 2019 compensation program for our principal executive officer and next two most highly compensated executive officers who are named in the 2019 Summary Compensation Table below. These “named executive officers” and their positions are:

- Arthur O. Tzianabos, Ph.D., President and Chief Executive Officer;
- Albert Seymour, Ph.D., Chief Scientific Officer; and
- W. Bradford Smith, Chief Financial Officer.

**2019 Summary Compensation Table**

The following table sets forth information concerning the compensation of our named executive officers for the years ended December 31, 2018 and 2019:

Name and principal position	Fiscal Year	Salary \$	Bonus \$	Option Awards \$ (1)	Non-Equity Incentive Plan Compensation \$	All Other Compensation \$ (2)	Total \$
Arthur O. Tzianabos, Ph.D.	2019	537,600	—	4,217,097	295,680	12,500	5,062,877
<i>President and Chief Executive Officer</i>	2018	490,500	—	3,562,722	250,000	9,893	4,313,115
Albert Seymour, Ph.D.	2019	405,600	—	1,295,756	162,240	13,231	1,876,827
<i>Chief Scientific Officer</i>	2018	386,948	—	1,574,473	156,760	5,576	2,123,757
W. Bradford Smith	2019	384,200	—	1,307,536	153,680	14,880	1,860,296
<i>Chief Financial Officer</i>							

- (1) Amounts reflect the full grant date fair value of stock options granted during the applicable year computed in accordance with Accounting Standard Codification, Topic 718, Compensation— *Stock Compensation* (“ASC 718”), rather than the amounts paid to or realized by the named individual. We provide information regarding the assumptions used to calculate the value of all option awards in Note 12 to our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2019.
- (2) Amount shown represents 401(k) matching contributions. For additional information, refer to the discussion below under the heading “Narrative Disclosure to Summary Compensation Table—Other Elements of Compensation—Retirement Plans.”

**Narrative Disclosure to Summary Compensation Table**

The primary elements of compensation for our named executive officers are base salary, annual performance bonuses and long-term equity-based compensation awards. The named executive officers also generally participate in employee benefit plans and programs that we offer to our other full-time employees on the same basis.

**2019 Salaries**

The named executive officers receive a base salary to provide a fixed component of compensation reflecting the executive’s skill set, experience, role and responsibilities. The following table shows the annual base salaries for 2019 and 2020 of our named executive officers. The 2020 annual base salaries became effective January 1, 2020.

Name	2019 Annual Base Salary (\$)	2020 Annual Base Salary (\$)
Arthur O. Tzianabos, Ph.D.	537,600	563,200
Albert Seymour, Ph.D.	405,600	426,800
W. Bradford Smith	384,200	406,700

### 2019 Bonuses

We offer our named executive officers the opportunity to earn annual cash bonuses to compensate them for attaining short-term company and individual goals as approved by our Board of Directors. For 2019, bonuses were based on attaining corporate goals relating to product development, manufacturing processes, and raising equity capital and individual goals related to each named executive officer's area of responsibility within the Company. The 2019 target bonus amounts, expressed as a percentage of annual base salary, of our named executive officers were 55% for Dr. Tzianabos, 40% for Dr. Seymour and 40% for Mr. Smith.

In December 2019, our Board of Directors met to review performance against the 2019 bonus goals and approved cash bonuses for the named executive officers in the amounts set forth in the Non-Equity Incentive Plan Compensation column of the 2019 "Summary Compensation Table" above.

In December 2019, based on its determination that the corporate and individual goals had been achieved at 100% of target level, our Board of Directors approved the target bonus amounts, expressed as a percentage of annual base salary, for 2020 for our named executive officers as follows: 55% for Dr. Tzianabos, 40% for Dr. Seymour and 40% for Mr. Smith.

### Equity Compensation

We generally offer stock options to our employees, including our named executive officers, as the long-term incentive component of our compensation program. Stock options allow our employees to purchase shares of our common stock at a price equal to the fair market value of our common stock on the date of grant, as determined by the Board of Directors. Initial stock option grants to newly hired employees generally vest as to 25% of the underlying shares on either the first anniversary of the date of grant or a specified vesting commencement date and in equal monthly installments over the following 36 months, subject to the holder's continued service with us. Since 2017, stock options granted from time to time as periodic awards to existing employees generally vest in 48 equal monthly installments on the first day of each calendar month following the vesting commencement date, subject to the holder's continued service with us through the applicable vesting dates. Historically, our stock options have been intended to qualify as "incentive stock options" to the extent permitted under Internal Revenue Code of 1986, as amended, and, prior to the completion of our initial public offering, allowed "early exercise" of an unvested option in exchange for shares of restricted stock subject to the same vesting schedule as the underlying stock option.

We maintain the 2018 Incentive Award Plan to facilitate the grant of cash and equity incentives to directors, employees (including our named executive officers) and consultants of our Company and to enable our Company to obtain and retain services of these individuals.

In December 2019, our named executive officers were granted the stock options set forth in the table below under our 2018 Incentive Award Plan. These stock options were granted with exercise prices equal to the fair market value of our common stock on the date of grant, as determined under the terms of our 2018 Incentive Award Plan, and are subject to the standard vesting schedule for periodic awards described above.

<u>Named Executive Officer</u>	<u>December 11, 2019 Stock Options Granted</u>
Arthur O. Tzianabos, Ph.D.	358,000
Albert Seymour, Ph.D.	110,000
W. Bradford Smith	111,000

Please refer to our Outstanding Equity Awards at 2019 Fiscal Year End table below for additional information regarding the stock options held by our named executive officers.

**Retirement Plans**

We maintain a 401(k) retirement savings plan for our employees, including our named executive officers, who satisfy certain eligibility requirements. Our named executive officers are eligible to participate in the 401(k) plan on the same terms as other full-time employees. We provide matching contributions under the plan of 50% of each participant’s eligible compensation contributed. Employee contributions are allocated to each participant’s individual account and are then invested in selected investment alternatives according to the participants’ directions. Employees are immediately and fully vested in their own contributions. Employer contributions vest over three years according to the employees’ years of service. We believe that providing a vehicle for tax deferred retirement savings through our 401(k) plan adds to the overall desirability of our executive compensation package and further incentivizes our employees, including our named executive officers, in accordance with our compensation policies.

**Employee Benefits**

Our named executive officers are eligible to participate in our employee benefit plans and programs, which include medical, dental, and vision benefits, health spending accounts, and short- and long-term disability, accidental death and dismemberment, and life insurance, to the same extent as our other full-time employees generally, subject to the terms and eligibility requirements of those plans.

**Outstanding Equity Awards at 2019 Fiscal Year-End**

The following table summarizes the number of shares of common stock underlying outstanding equity incentive plan awards for each named executive officer as of December 31, 2019.

Name	Vesting Commencement Date	Option Awards				Per Share Option Exercise Price (\$)	Option Expiration Date	Stock Awards	
		Number of Securities Underlying Unexercised Options (#) Exercisable	(1)	Number of Securities Underlying Unexercised Options (#) Unexercisable	(1)			Number of Shares or Units of Stock That Have Not Vested (#)(2)	Market Value of Shares or Units of Stock That Have Not Vested (\$)(3)
Arthur O. Tzianabos, Ph.D.	4/1/2016	407,785	(4)	54,350	(4)	0.47	4/22/2026	—	—
	1/1/2018	246,575		268,078		6.63	12/7/2027	—	—
	3/27/2018	40,404		51,972		16.00	3/27/2028	—	—
	1/1/2019	46,520		156,480		24.28	12/14/2028	—	—
	1/1/2020	—		358,000		19.92	12/11/2029	—	—
Albert Seymour, Ph.D.	—	—		—		—	—	14,263	295,244
	1/1/2018	36,595		39,822		6.63	12/7/2027	—	—
	3/27/2018	29,085		37,416		16.00	3/27/2028	—	—
	1/1/2019	16,958		57,042		24.28	12/14/2028	—	—
	1/1/2020	—		110,000		19.92	12/11/2029	—	—
W. Bradford Smith	4/5/2017	66,931	(4)	54,473	(4)	0.63	4/6/2027	—	—
	1/1/2018	30,407		33,089		6.63	12/7/2027	—	—
	3/27/2018	21,735		27,976		16.00	3/27/2028	—	—
	1/1/2019	20,166		67,834		24.28	12/14/2028	—	—
	1/1/2020	—		111,000		19.92	12/11/2029	—	—

(1) Except as otherwise described below, stock options have a term of ten years from the grant date and vest and become exercisable in 48 equal monthly installments based upon the executive’s completion of each full month of service following the vesting commencement date, subject to the named executive officer’s continued employment with the Company through each applicable vesting date and potential accelerated vesting as described under the heading “Employment Agreements” below. In addition, stock options granted to our named executive officers prior to 2018 permitted early exercise in exchange for restricted stock. As a result, all of such options were exercisable as of December 31, 2019. The number of shares for which each such option is shown as being exercisable and unexercisable represent, respectively, the number of shares for which each such option was vested and unvested as of December 31, 2019.

- (2) Represents shares of unvested restricted stock acquired by the named executive officer upon exercise of an unvested stock option. The remaining shares of restricted stock vest in equal monthly installments ending March 28, 2020, subject to the named executive officer's continued employment with the Company through each applicable vesting date and potential accelerated vesting as described under the heading "Employment Agreements" below.
- (3) Market value calculated using the closing price per share of our common stock on December 31, 2019 of \$20.70.
- (4) Awards vest as to 25% of the underlying shares on the first anniversary of the specified vesting commencement date and in equal monthly installments over the following 36 months, subject to the named executive officer's continued employment with the Company through each applicable vesting date and potential accelerated vesting as described under the heading "Employment Agreements" below.

### **Employment Agreements**

We have entered into employment agreements with each of our named executive officers. The employment agreements are for unspecified terms. Under their respective employment agreements, if we terminate Dr. Tzianabos, Dr. Seymour or Mr. Smith without "cause" or he resigns for "good reason", subject to his timely executing a release of claims and continued compliance with a separate restrictive covenant agreement, he is entitled to receive (i) base salary continuation for a period of nine months (or, for Dr. Tzianabos, 12 months), (ii) payment of all bonuses earned but unpaid as of the date of termination and (iii) direct payment of or reimbursement for continued medical, dental or vision coverage pursuant to COBRA for up to nine months (or, for Dr. Tzianabos, 12 months), less the amount he would have had to pay to receive such coverage as an active employee based on the cost sharing levels in effect on his termination date.

If we terminate Dr. Tzianabos, Dr. Seymour or Mr. Smith without "cause" or he resigns for "good reason," in either case, on or within 12 months following a change in control, then, in lieu of the severance benefits described above, subject to his timely executing a release of claims, he is entitled to receive (i) an amount equal in cash equal to 1.0 times (or, for Dr. Tzianabos, 1.5 times) the sum of his base salary plus target annual bonus for the year of termination, (ii) payment of all bonuses earned but unpaid as of the date of termination, (iii) direct payment of or reimbursement for continued medical, dental or vision coverage pursuant to COBRA for up to 12 months (or, for Dr. Tzianabos, 18 months), less the amount he would have had to pay to receive such coverage as an active employee based on the cost sharing levels in effect on his termination date, and (iv) accelerated vesting of all unvested equity or equity-based awards that vest solely based on the passage of time, with any such awards that vest based on the attainment of performance-vesting conditions being governed by the terms of the applicable award agreement.

Each of our named executive officers has agreed to refrain from competing with us or soliciting our employees, in each case, while employed and following his termination of employment for any reason for a period of 12 months.

For purposes of the employment agreements, "cause" generally means the named executive officer's refusal to substantially perform the duties associated with his position with our Company or to carry out the reasonable and lawful instructions of the Board of Directors concerning duties or actions consistent with his position, his breach of a material provision of the employment agreement which remains uncured (to the extent capable of cure) for a period of 30 days following written notice from our Company, his conviction, plea of no contest or nolo contendere or imposition of unadjudicated probation for any felony or crime involving moral turpitude, his unlawful use (including being under the influence) or possession of illegal drugs on our premises or while performing his duties and responsibilities under the employment agreement, or his commission of any act of fraud, embezzlement, misappropriation, willful misconduct, or breach of fiduciary duty against us.

For purposes of the employment agreements, "good reason" generally means, subject to certain cure rights, the named executive officer's termination of employment due to a reduction in salary or target bonus, a material decrease in authority or areas of responsibility, our Company's breach of any one or more of the material provisions of the employment agreement, or a relocation by our Company of the named executive officer's primary office to a location more than 25 miles from the named executive officer's primary office on the date of the agreement.

### **Non-Employee Director Compensation**

The following table sets forth in summary form information concerning the compensation that was earned by or paid to each of our non-employee directors during the year that ended December 31, 2019. Dr. Tzianabos, our Chief Executive Officer, received no compensation for his service as a director during the year ended December 31, 2019.

**2019 Director Compensation Table**

Name	Fees Earned or Paid in Cash (\$)	Option Awards \$(1)	Total (\$)
Steven Gillis, Ph.D.	43,010	180,148 (2)	223,158
Richard J. Gregory, Ph.D.	46,765	180,148 (2)	226,913
Kush M. Parmar, M.D., Ph.D.	82,500	180,148 (2)	262,648
Matthew R. Patterson	43,490	180,148 (2)	223,638
Alise S. Reicin, M.D.	17,731	354,797 (3)	372,528
Mahendra G. Shah, Ph.D. (4)	19,409	—	19,409
Mary Thistle	52,500	180,148 (2)	232,648
Cameron Wheeler, Ph.D. (5)	23,515	180,148 (2)	203,663

- (1) Amounts reflect the full grant date fair value of stock options granted during the applicable year computed in accordance with ASC Topic 718, rather than the amounts paid to or realized by the named individual. We provide information regarding the assumptions used to calculate the value of all option awards in Note 13 to our consolidated financial statements included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019.
- (2) Represents the grant date fair value of an option to purchase 15,580 shares of our common stock granted to each then-current non-employee director on June 6, 2019 with an exercise price of \$19.51 per share.
- (3) Represents the grant date fair value of an initial grant of an option to purchase 31,160 shares of our common stock with an exercise price of \$19.25 per share to Dr. Reicin upon her becoming a director on July 11, 2019.
- (4) Dr. Shah resigned from our Board of Directors on June 5, 2019.
- (5) Dr. Wheeler resigned from our Board of Directors on July 9, 2019.

The table below shows the aggregate numbers of shares subject to option awards held as of December 31, 2019 by each non-employee director. None of our non-employee directors held any other outstanding equity awards as of December 31, 2019.

Name	Options Outstanding		Total
	Exercisable	Unexercisable	
Steven Gillis, Ph.D.	10,282	36,458	46,740
Richard J. Gregory, Ph.D.	10,282	36,458	46,740
Kush M. Parmar, M.D., Ph.D.	10,282	36,458	46,740
Matthew R. Patterson	14,132	33,558	47,690
Alise S. Reicin, M.D.	—	31,160	31,160
Mary Thistle	10,282	36,458	46,740

We maintain a compensation program for our non-employee directors under which each non-employee director receives the following amounts for their service on our Board of Directors:

- an option to purchase 31,160 shares of our common stock upon the director’s initial election or appointment to our Board of Directors (the “Initial Award”),
- if the director has served on our Board of Directors for at least six months as of the date of an annual meeting of stockholders, an option to purchase 15,580 shares of our common stock on the date of the annual meeting (the “Annual Award”),
- an annual director fee of \$37,500, and
- if the director serves on a committee of our Board of Directors or in the other capacities stated below, an additional annual fee as follows:
  - chairman of the board or lead independent director, \$35,000,
  - chairman of the audit committee, \$15,000,
  - audit committee member other than the chairman, \$7,500,
  - chairman of the compensation committee, \$10,000,
  - compensation committee member other than the chairman, \$5,000,

- chairman of the nominating and corporate governance committee, \$7,500, and
- nominating and corporate governance committee member other than the chairman, \$4,000.

Stock options granted to our non-employee directors under the program have an exercise price equal to the fair market value of our common stock on the date of grant and expire not later than ten years after the date of grant. Stock options granted upon a director's initial election or appointment vest in three equal installments on each of the first three anniversaries of the date of grant. Stock options granted annually to directors vest in a single installment on the earlier of the day before the next annual meeting or the first anniversary of the date of grant. In addition, all unvested stock options vest in full upon the occurrence of a change in control.

Director fees under the program are payable in arrears in four equal quarterly installments not later than the fifteenth day following the final day of each calendar quarter, provided that the amount of each payment is prorated for any portion of a quarter that a director is not serving on our board.

In December 2019, following the recommendation of our compensation committee, our Board of Directors approved amending our non-employee director compensation program, effective January 1, 2020, to (i) increase the annual director fee to \$40,000, (ii) increase the additional annual fee paid to the chairman of the nominating and corporate governance committee to \$8,000, (iii) provide that each Initial Award will cover 36,000 shares of our common stock and (iv) provide that each Annual Award will cover 18,000 shares of our common stock.

## SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

**Common Stock**

The following table sets forth certain information with respect to holdings of our Common Stock by (i) stockholders who beneficially owned more than 5% of the outstanding shares of our Common Stock, and (ii) each of our directors (which includes all nominees), each of our named executive officers and all directors and executive officers as a group as of April 17, 2020, unless otherwise indicated. The number of shares beneficially owned by each stockholder is determined under rules issued by the SEC. Under these rules, beneficial ownership includes any shares as to which a person has sole or shared voting power or investment power. Applicable percentage ownership is based on 45,213,128 shares of Common Stock outstanding as of April 17, 2020. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, shares of Common Stock subject to options, or other rights held by such person that are currently exercisable or will become exercisable within 60 days of April 17, 2020 are considered outstanding, although these shares are not considered outstanding for purposes of computing the percentage ownership of any other person.

Unless otherwise indicated, the address of each beneficial owner listed below is One Patriots Park, Bedford, MA 01730. We believe, based on information provided to us, that each of the stockholders listed below has sole voting and investment power with respect to the shares beneficially owned by the stockholder unless noted otherwise, subject to community property laws where applicable.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage
<b>5% or Greater Stockholders</b>		
Entities affiliated with ARCH Venture Fund (1)	5,768,694	12.8%
Entities affiliated with 5AM Ventures (2)	5,535,919	12.2%
RTW Investments, LP (3)	4,349,250	9.6%
TLS Beta Pte. Ltd. (4)	3,220,293	7.1%
Entities affiliated with Deerfield (5)	3,214,246	7.1%
T. Rowe Price Group, Inc. (6)	2,779,432	6.1%
<b>Named Executive Officers and Directors</b>		
Arthur O. Tzianabos, Ph.D. (7)	1,009,759	2.2%
Albert Seymour, Ph.D. (8)	273,840	*
W. Bradford Smith (9)	173,929	*
Steven Gillis, Ph.D. (1)(10)	5,804,839	12.8%
Richard J. Gregory, Ph.D. (11)	46,951	*
Kush M. Parmar, M.D., Ph.D. (2)(12)	5,572,064	12.3%
Matthew R. Patterson (13)	34,946	*
Alise S. Reicin, M.D.	—	—
Mary Thistle (14)	36,145	*
<b>All executive officers and directors as a group (11 persons) (15)</b>	<b>13,097,716</b>	<b>28.0%</b>

\* Less than one percent.

- (1) Based on a Schedule 13G filed with the SEC on February 13, 2020 and the Company's records. Consists of 4,631,031 shares of common stock held by ARCH Venture Fund VIII, L.P. ("ARCH Fund VIII") and 1,137,663 shares of common stock held by ARCH Venture Fund VIII Overage, L.P. ("ARCH Fund Overage"). The sole general partner of ARCH Fund VIII is ARCH Venture Partners VIII, L.P. ("ARCH Partners VIII"), which may be deemed to beneficially own the shares held by ARCH Fund VIII. The sole general partner of ARCH Partners VIII and ARCH Fund Overage is ARCH Venture Partners VIII, LLC ("ARCH VIII LLC"), which has shared voting and dispositive power over the shares of common stock held by each of ARCH Fund VIII and ARCH Fund Overage. ARCH Partners VIII and ARCH VIII LLC disclaim beneficial ownership of such shares, except to the extent of any pecuniary interest therein. The managing directors of ARCH VIII LLC are Keith L. Crandell, Clinton Bybee and Robert Nelsen, and they may be deemed to have shared voting and dispositive power over the shares of common stock held by ARCH Fund VIII and ARCH Fund Overage. Messrs. Crandell, Bybee and Nelsen disclaim beneficial ownership of such shares, except to the extent of any pecuniary interest therein. Steven Gillis, M.D., Ph.D., one of our directors, is a managing director at ARCH Venture Partners. Director Steven Gillis owns an interest in ARCH Partners VIII but does not have voting or investment control over the shares held by ARCH Fund VIII, and disclaims beneficial ownership of such shares, except to the extent of any pecuniary interest therein. The address of ARCH Fund VIII and ARCH Fund Overage is 8755 West Higgins Road, Suite 1025, Chicago, Illinois 60631.

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- (2) Based on a Schedule 13G filed with the SEC on February 6, 2020 and the Company's records. Consists of 5,314,484 shares of common stock held by 5AM Ventures IV, L.P. ("Ventures IV"), as to which Ventures IV has shared voting and dispositive power, and 221,435 shares of common stock held by 5AM Co-Investors IV, L.P. ("Co-Investors IV"), as to which Co-Investors IV has shared voting and dispositive power. 5AM Partners IV, LLC ("Partners IV") is the sole general partner of Ventures IV and Co-Investors IV. Dr. John Diekman, Andrew J. Schwab and Dr. Scott M. Rocklage, are the managing members of Partners IV and, along with Partners IV, have shared voting and investment power over the shares beneficially owned by Ventures IV and Co-Investors IV. Kush M. Parmar, M.D., Ph.D., one of our directors, is an affiliate of Ventures IV. Each of Partners IV, Dr. Diekman, Mr. Schwab and Dr. Rocklage disclaim beneficial ownership of such shares except to the extent of its or their recurring interest therein. The address of all entities affiliated with 5AM Ventures is 501 2nd Street, Suite 350, San Francisco, CA 94107.
- (3) Based solely on a Schedule 13G filed with the SEC on February 14, 2020, RTW Investments, LP (the "Adviser") and Roderick Wong have shared voting and dispositive power over all 4,349,250 shares, and RTW Master Fund, Ltd. has shared voting and dispositive power over 4,349,250 shares. Roderick Wong is the Managing Partner of the Adviser. The Funds and Adviser disclaim beneficial ownership of such shares, except to the extent of any pecuniary interest therein. The address of the Funds and Adviser is 412 West 15th Street, Floor 9, New York, New York 10011.
- (4) Based solely on a Schedule 13G filed with the SEC on April 11, 2018, Temasek Holdings (Private) Limited, Fullerton Management Pte Ltd and Temasek Life Sciences Private Limited each has shared voting and dispositive power over 3,220,293 shares of common stock, V-Sciences Investments Pte Ltd has shared voting and dispositive power over 625,000 shares of common stock, and TLS Beta Pte. Ltd. has shared voting and dispositive power over 2,595,293 shares of common stock. The principal business address of Temasek Holdings (Private) Limited, Fullerton Management Pte Ltd, Temasek Life Sciences Private Limited, V-Sciences Investments Pte Ltd and TLS Beta Pte. Ltd. is 60B Orchard Road #06-18 Tower 2, The Atrium@Orchard, Singapore 238891.
- (5) Based solely on a Schedule 13D/A filed with the SEC on April 20, 2020, Deerfield Mgmt III, L.P. and Deerfield Private Design Fund III, L.P. each has shared voting and dispositive power over 1,389,076 shares of common stock, Deerfield Healthcare Innovations Fund, L.P. and Deerfield Mgmt HIF, L.P. each has shared voting and dispositive power over 1,825,170 shares of common stock, and Deerfield Management Company, L.P. and James E. Flynn each has shared voting and dispositive power over 3,214,246 shares of common stock. Deerfield Mgmt III, L.P. is the general partner of Deerfield Private Design Fund III, L.P., and Deerfield Mgmt HIF, L.P. is the general partner of Deerfield Healthcare Innovations Fund, L.P. Deerfield Management Company, L.P. is the investment manager of each of Deerfield Private Design Fund III, L.P. and Deerfield Healthcare Innovations Fund, L.P. Mr. James E. Flynn is the sole member of the general partner of each of Deerfield Mgmt III, L.P., Deerfield Mgmt HIF, L.P., and Deerfield Management Company, L.P. The address of Deerfield Healthcare Innovations Fund, L.P., Deerfield Private Design Fund III, L.P., Deerfield Mgmt III, L.P., Deerfield Partners, L.P., Deerfield Mgmt, L.P., Deerfield Mgmt HIF, L.P., Deerfield Management Company, L.P. and Mr. James E. Flynn is 780 Third Avenue, 37th Floor, New York, New York.
- (6) Based solely on a Schedule 13G filed with the SEC on February 14, 2020, T. Rowe Price Associates, Inc. has sole voting power over 467,599 shares and sole voting and dispositive power over all 2,779,432 shares. The address of T. Rowe Price Associates, Inc. is 100 E. Pratt Street, Baltimore, MD 21202.
- (7) Includes options to purchase 932,254 shares of common stock that are or will be immediately exercisable by Dr. Tzianabos within 60 days of April 17, 2020.
- (8) Includes options to purchase 119,823 shares of common stock that are or will be immediately exercisable by Dr. Seymour within 60 days of April 17, 2020.
- (9) Consists of options to purchase 173,929 shares of common stock that are or will be immediately exercisable by Mr. Smith within 60 days of April 17, 2020.
- (10) Includes options to purchase 36,145 shares of common stock that are or will be immediately exercisable by Dr. Gillis within 60 days of April 17, 2020.
- (11) Includes options to purchase 36,145 shares of common stock that are or will be immediately exercisable by Dr. Gregory within 60 days of April 17, 2020.
- (12) Includes options to purchase 36,145 shares of common stock that are or will be immediately exercisable by Dr. Parmar within 60 days of April 17, 2020.
- (13) Consists of options to purchase 34,946 shares of common stock that are or will be immediately exercisable by Mr. Patterson within 60 days of April 17, 2020.
- (14) Consists of options to purchase 36,145 shares of common stock that are or will be immediately exercisable by Ms. Thistle within 60 days of April 17, 2020.
- (15) Includes options to purchase 1,550,775 shares of common stock that are or will be immediately exercisable within 60 days of April 17, 2020.

## CERTAIN RELATIONSHIPS AND RELATED PERSON TRANSACTIONS

### Policies and Procedures for Related Person Transactions

Our Board of Directors has adopted a written Related Person Transaction Policy, setting forth the policies and procedures for the review and approval or ratification of related person transactions. Under the policy, our finance department is primarily responsible for developing and implementing processes and procedures to obtain information regarding related persons with respect to potential related person transactions and then determining, based on the facts and circumstances, whether such potential related person transactions do, in fact, constitute related person transactions requiring compliance with the policy. If our finance department determines that a transaction or relationship is a related person transaction requiring compliance with the policy, our Chief Financial Officer is required to present to the audit committee all relevant facts and circumstances relating to the related person transaction. Our audit committee must review the relevant facts and circumstances of each related person transaction, including if the transaction is on terms comparable to those that could be obtained in arm's length dealings with an unrelated third party and the extent of the related person's interest in the transaction, take into account the conflicts of interest and corporate opportunity provisions of our code of business conduct and ethics, and either approve or disapprove the related person transaction. If advance audit committee approval of a related person transaction requiring the audit committee's approval is not feasible, then the transaction may be preliminarily entered into by management upon prior approval of the transaction by the chair of the audit committee subject to ratification of the transaction by the audit committee at the audit committee's next regularly scheduled meeting; provided, that if ratification is not forthcoming, management will make all reasonable efforts to cancel or annul the transaction. If a transaction was not initially recognized as a related person, then upon such recognition the transaction will be presented to the audit committee for ratification at the audit committee's next regularly scheduled meeting; provided, that if ratification is not forthcoming, management will make all reasonable efforts to cancel or annul the transaction. Our management will update the audit committee as to any material changes to any approved or ratified related person transaction and will provide a status report at least annually of all then current related person transactions. No director may participate in approval of a related person transaction for which he or she is a related person.

The following are certain transactions, arrangements and relationships with our directors, executive officers and stockholders owning 5% or more of our outstanding common stock since January 1, 2018.

### 2019 Follow-On Offering

In April 2019, we completed a registered public offering pursuant to which we issued and sold an aggregate of 6,388,889 shares of our common stock (including 833,333 shares sold pursuant to the underwriters' full exercise of their option to purchase additional shares) at a public offering price of \$22.50 per share for aggregate net proceeds to us of approximately \$134.5 million. The following table sets forth the number of shares of common stock purchased in our registered public offering by certain holders of more than 5% of our common stock:

Name (1)	Shares of Common Stock Purchased	Total Purchase Price
Entities affiliated with Deerfield (2)	533,333	\$ 11,999,993
Entities affiliated with T. Rowe Price Group, Inc.	719,464	\$ 16,187,940

(1) Additional details regarding these stockholders and their equity holdings are provided in this proxy under the caption "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters."

(2) Affiliate of Cameron Wheeler, Ph.D., who resigned from our Board of Directors in July 2019.

### Employment Agreements

We have entered into employment agreements with our executive officers. For more information regarding the employment agreements with our named executive officers, see the section in this proxy statement entitled "Executive and Director Compensation—Employment Agreements."

### Indemnification Agreements

We have entered into indemnification agreements with each of our directors and executive officers. These agreements, among other things, require us or will require us to indemnify each director (and in certain cases their related venture capital funds) and executive officer to the fullest extent permitted by Delaware law, including indemnification of expenses such as attorneys' fees, judgments, fines and settlement amounts incurred by the director or executive officer in any action or proceeding, including any action or proceeding by or in right of us, arising out of the person's services as a director or executive officer.

## DELINQUENT SEC TION 16(a) REPORTS

Section 16(a) of the Exchange Act requires our directors, officers (as defined under Rule 16a-1(f) under the Exchange Act) and stockholders who beneficially own more than 10% of any class of our equity securities registered pursuant to Section 12 of the Exchange Act (collectively, the “Reporting Persons”) to file initial statements of beneficial ownership of securities and statements of changes in beneficial ownership of securities with respect to our equity securities with the SEC. To our knowledge, based solely on our review of the copies of such forms filed with the SEC and upon written representations of the Reporting Persons received by us, we believe that there has been compliance with all Section 16(a) filing requirements applicable to such Reporting Persons with respect to the fiscal year ended December 31, 2019. There was one late Form 4 filing in January 2020 (reporting one transaction) for Richard J. Gregory, Ph.D.

## STOCKHOLDERS’ PROPOSALS

Stockholders who intend to have a proposal considered for inclusion in our proxy materials for presentation at our 2021 Annual Meeting of Stockholders pursuant to Rule 14a-8 under the Exchange Act must submit the proposal to our Secretary at our offices at One Patriots Park, Bedford, MA 01730 in writing not later than December 29, 2020.

Stockholders intending to present a proposal at the 2021 Annual Meeting of Stockholders, but not to include the proposal in our proxy statement, or to nominate a person for election as a director, must comply with the requirements set forth in our Amended and Restated Bylaws. Our Amended and Restated Bylaws require, among other things, that our Secretary receive written notice from the stockholder of record of their intent to present such proposal or nomination not earlier than the 120th day and not later than the 90th day prior to the anniversary of the preceding year’s annual meeting. Therefore, we must receive notice of such a proposal or nomination for the 2021 Annual Meeting of Stockholders no earlier than February 10, 2021 and no later than March 12, 2021. The notice must contain the information required by the Amended and Restated Bylaws, a copy of which is available upon request to our Secretary. In the event that the date of the 2021 Annual Meeting of Stockholders is more than 30 days before or more than 60 days after June 10, 2021, then our Secretary must receive such written notice not earlier than the close of business on the 120th day prior to the 2021 Annual Meeting and not later than the close of business on the 90th day prior to the 2021 Annual Meeting or, if later, the close of business on 10th day following the day on which public disclosure of the date of such meeting is first made by us.

We reserve the right to reject, rule out of order, or take other appropriate action with respect to any proposal that does not comply with these or other applicable requirements.

## OTHER MATTERS

Our Board of Directors is not aware of any matter to be presented for action at the Annual Meeting other than the matters referred to above and does not intend to bring any other matters before the Annual Meeting. However, if other matters should come before the Annual Meeting, it is intended that holders of the proxies named on the Company's proxy card will vote thereon in their discretion.

## SOLICITATION OF PROXIES

The accompanying proxy is solicited by and on behalf of our Board of Directors, whose Notice of Annual Meeting of Stockholders is attached to this proxy statement, and the entire cost of our solicitation will be borne by us. In addition to the use of mail, proxies may be solicited by personal interview, telephone, e-mail and facsimile by our directors, officers and other employees who will not be specially compensated for these services. We will also request that brokers, nominees, custodians and other fiduciaries forward soliciting materials to the beneficial owners of shares held by the brokers, nominees, custodians and other fiduciaries. We will reimburse these persons for their reasonable expenses in connection with these activities.

Certain information contained in this proxy statement relating to the occupations and security holdings of our directors and officers is based upon information received from the individual directors and officers.

## HOMOLOGY'S ANNUAL REPORT ON FORM 10-K

A copy of Homology's Annual Report on Form 10-K for the fiscal year ended December 31, 2019, including financial statements and schedules thereto but not including exhibits, as filed with the SEC, will be sent to any stockholder of record on April 17, 2020 without charge upon written request addressed to:

Homology Medicines, Inc.  
Attention: Secretary  
One Patriots Park  
Bedford, Massachusetts 01730

A reasonable fee will be charged for copies of exhibits. You also may access this proxy statement and our Annual Report on Form 10-K at [www.proxyvote.com](http://www.proxyvote.com). You also may access our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 at [www.homologymedicines.com](http://www.homologymedicines.com).

**WHETHER OR NOT YOU PLAN TO PARTICIPATE IN THE ANNUAL MEETING ELECTRONICALLY, WE URGE YOU TO VOTE YOUR SHARES VIA THE TOLL-FREE TELEPHONE NUMBER OR OVER THE INTERNET, AS DESCRIBED IN THIS PROXY STATEMENT. IF YOU RECEIVED A COPY OF THE PROXY CARD BY MAIL, YOU MAY SIGN, DATE AND MAIL THE PROXY CARD IN THE ENCLOSED RETURN ENVELOPE. PROMPTLY VOTING YOUR SHARES WILL ENSURE THE PRESENCE OF A QUORUM AT THE ANNUAL MEETING AND WILL SAVE US THE EXPENSE OF FURTHER SOLICITATION.**

By Order of the Board of Directors



W. Bradford Smith  
Chief Financial Officer, Treasurer and Secretary

Bedford, Massachusetts  
April 28, 2020

HOMOLOGY MEDICINES, INC.  
 ONE PATRIOT BLVD.  
 BEDFORD, MA 01730

**VOTE BY INTERNET**

*Before The Meeting* - Go to [www.proxyvote.com](http://www.proxyvote.com)

Use the Internet to transmit your voting instructions and for electronic delivery of information up until 11:59 P.M. Eastern Time the day before the cut-off date or meeting date. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

*During The Meeting* - Go to [www.virtualshareholdermeeting.com/FOX2020](http://www.virtualshareholdermeeting.com/FOX2020)

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

**VOTE BY PHONE - 1-800-690-6903**

Use any touch-tone telephone to transmit your voting instructions up until 11:59 P.M. Eastern Time the day before the cut-off date or meeting date. Have your proxy card in hand when you call and then follow the instructions.

**VOTE BY MAIL**

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

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

D09817-P38762

KEEP THIS PORTION FOR YOUR RECORDS  
 DETACH AND RETURN THIS PORTION ONLY

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

<b>HOMOLOGY MEDICINES, INC.</b> The Board of Directors recommends you vote FOR the following:		For All <input type="checkbox"/>	Withhold All <input type="checkbox"/>	For All Except <input type="checkbox"/>	To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.
1. Election of Class II Directors to serve until the 2023 Annual Meeting of Stockholders, and until their respective successors shall have been duly elected and qualified.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<b>Nominees:</b> 01) Steven Gillis, Ph.D. 02) Richard J. Gregory, Ph.D. 03) Kush M. Parmar, M.D., Ph.D.					
The Board of Directors recommends you vote FOR the following proposal:		For    Against    Abstain			
2. Ratification of the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>NOTE:</b> To transact such other business as may properly come before the Annual Meeting or any continuation, postponement, or adjournment of the Annual Meeting.					
For address changes and/or comments, please check this box and write them on the back where indicated.		<input type="checkbox"/>			
Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.					
<input style="width: 100%;" type="text"/> Signature (PLEASE SIGN WITHIN BOX)	<input style="width: 100%;" type="text"/> Date	<input style="width: 100%;" type="text"/> Signature (Joint Owners)		<input style="width: 100%;" type="text"/> Date	

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

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**HOMOLOGY MEDICINES, INC.**  
**Annual Meeting of Stockholders**  
**June 10, 2020 8:30 AM**  
**This proxy is solicited by the Board of Directors**

The undersigned stockholder(s) hereby appoint(s) Arthur O. Tzianabos, Ph.D. and Bradford Smith, or either of them, as proxies, each with the power to appoint his substitute, and hereby authorize(s) them to represent and to vote, as designated on the reverse side of this proxy card, all of the shares of common stock of HOMOLOGY MEDICINES, INC. that the undersigned stockholder(s) is/are entitled to vote at the Annual Meeting of Stockholders to be held via the internet at [www.virtualshareholdermeeting.com/FIXX2020](http://www.virtualshareholdermeeting.com/FIXX2020) on Wednesday, June 10, 2020, at 8:30 a.m. Eastern Time, or any continuation, adjournment or postponement thereof (the "Annual Meeting").

Such proxies are authorized to vote in their discretion (x) for the election of any person to the Board of Directors if any nominee named herein becomes unable to serve or for good cause will not serve, (y) on any matter that the Board of Directors did not know would be presented at the Annual Meeting by a reasonable time before the proxy solicitation was made, and (z) on such other business as may properly be brought before the Annual Meeting or any adjournment, continuation or postponement thereof.

**This proxy, when properly executed, will be voted in the manner directed herein. If no such direction is made, this proxy will be voted in accordance with the Board of Directors' recommendations.**

Address Changes/Comments: \_\_\_\_\_  
\_\_\_\_\_

(If you noted any Address Changes/Comments above, please mark corresponding box on the reverse side.)

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