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

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**

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

Kaleido Biosciences, 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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KALEIDO BIOSCIENCES, INC.
65 Hayden Ave
Lexington, Massachusetts 02421

NOTICE OF 2020 ANNUAL MEETING OF STOCKHOLDERS
To be held on June 17, 2020

Notice is hereby given that the 2020 Annual Meeting of Stockholders, or Annual Meeting, of Kaleido Biosciences, Inc., will be held on June 17, 2020 at 9:00 Eastern Time at 20 Custom House Street, 7th Floor, Boston, MA 02110. The purpose of the Annual Meeting is the following:

1. To elect three Class I directors to our board of directors, to serve until the 2023 annual meeting of stockholders and until his or her successor has been duly elected and qualified, or until his or her earlier death, resignation or removal;
2. To ratify the appointment of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020; and
3. To transact any other business properly brought before the Annual Meeting or any adjournment or postponement of the Annual Meeting.

The proposal for the election of directors relates solely to the election of Class I directors nominated by the board of directors.

Only Kaleido Biosciences, Inc. stockholders of record at the close of business on April 20, 2020, will be entitled to vote at the Annual Meeting and any adjournment or postponement thereof.

We are pleased to take advantage of Securities and Exchange Commission rules that allow companies to furnish their proxy materials over the Internet. We are mailing to our stockholders a Notice of Internet Availability of Proxy Materials, or Notice, instead of a paper copy of our proxy materials and our 2019 Annual Report to Stockholders, or 2019 Annual Report. The Notice contains instructions on how to access those documents and to cast your vote via the Internet. The Notice also contains instructions on how to request a paper copy of our proxy materials and our 2019 Annual Report. This process allows us to provide our stockholders with the information they need on a more timely basis, while reducing the environmental impact and lowering the costs of printing and distributing our proxy materials.

Your vote is important. Whether or not you are able to attend the meeting in person, it is important that your shares be represented. To ensure that your vote is recorded promptly, please vote as soon as possible, even if you plan to attend the meeting, by submitting your proxy via the Internet at the address listed on the proxy card or by signing, dating and returning the proxy card.

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We intend to hold our annual meeting in person. However, we are actively monitoring COVID-19 and are sensitive to the public health and travel concerns our shareholders may have and the protocols that federal, state, and local governments may impose. In the event it is not possible or advisable to hold our annual meeting in person, we will announce alternative arrangements for the meeting as promptly as practicable, which may include holding the meeting solely by means of remote communication. Please monitor our annual meeting website at www.proxydocs.com/KLDO for updated information. If you are planning to attend our annual meeting, please check the website one week prior to the meeting date. As always, we encourage you to vote your shares prior to the annual meeting.

By order of the board of directors,

/s/ Alison Lawton

Alison Lawton

President and Chief Executive Officer

Lexington, Massachusetts
May 8, 2020

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KALEIDO BIOSCIENCES, INC.
65 Hayden Ave
Lexington, Massachusetts 02421

**PROXY STATEMENT
FOR THE 2020 ANNUAL MEETING OF STOCKHOLDERS
TO BE HELD JUNE 17, 2020**

This proxy statement contains information about the 2020 Annual Meeting of Stockholders, or the Annual Meeting, of Kaleido Biosciences, Inc., which will be held on June 17, 2020 at 9:00 Eastern Time. The board of directors of Kaleido Biosciences, Inc. is using this proxy statement to solicit proxies for use at the Annual Meeting. In this proxy statement, the terms “Kaleido,” “we,” “us,” and “our” refer to Kaleido Biosciences, Inc. The mailing address of our principal executive office is Kaleido Biosciences, Inc., 65 Hayden Ave, Lexington, Massachusetts 02421.

All properly submitted proxies will be voted in accordance with the instructions contained in those proxies. If no instructions are specified, the proxies will be voted in accordance with the recommendation of our board of directors with respect to each of the matters set forth in the accompanying Notice of Meeting. You may revoke your proxy at any time before it is exercised at the meeting by giving our corporate secretary written notice to that effect.

We made this proxy statement and our Annual Report to Stockholders for the fiscal year ended December 31, 2019 available to stockholders on or about May 6, 2020.

We are an “emerging growth company” under applicable federal securities laws and therefore permitted to conform with certain reduced public company reporting requirements. As an emerging growth company, we provide in this proxy statement the scaled disclosure permitted under the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, including the compensation disclosures required of a “smaller reporting company,” as that term is defined in Rule 12b-2 promulgated under the Securities Exchange Act of 1934, as amended, or the Exchange Act. In addition, as an emerging growth company, we are not required to conduct votes seeking approval, on an advisory basis, of the compensation of our named executive officers or the frequency with which such votes must be conducted. We will remain an “emerging growth company” until the earliest of (i) the last day of the fiscal year following the fifth anniversary of our initial public offering; (ii) the last day of the fiscal year in which our total annual gross revenue is equal to or more than \$1.07 billion; (iii) the date on which we have issued more than \$1 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission. Even after we are no longer an “emerging growth company,” we may remain a “smaller reporting company.”

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting of Stockholders to be Held on June 17, 2020:

This proxy statement and our 2019 Annual Report to Stockholders are available for viewing, printing and downloading at www.proxydocs.com/KLDO.

A copy of our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, as filed with the Securities and Exchange Commission (SEC), except for exhibits, will be furnished without charge to any stockholder upon written request to Kaleido Biosciences, Inc., 65 Hayden Ave, Lexington, Massachusetts 02421, Attention: Corporate Secretary. This proxy statement and our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 are also available on the SEC’s website at www.sec.gov.

**KALEIDO BIOSCIENCES, INC.
PROXY STATEMENT
FOR THE 2020 ANNUAL MEETING OF STOCKHOLDERS**

GENERAL INFORMATION

When are this proxy statement and the accompanying materials scheduled to be sent to stockholders?

We have elected to provide access to our proxy materials to our stockholders via the Internet. Accordingly, on or about May 6, 2020, we will begin mailing a Notice of Internet Availability of Proxy Materials, or Notice. Our proxy materials, including the Notice of the 2020 Annual Meeting of Stockholders, this proxy statement and the accompanying proxy card or, for shares held in street name (i.e., held for your account by a broker or other nominee), a voting instruction form, and the 2019 Annual Report to Stockholders, or 2019 Annual Report, will be mailed or made available to stockholders on the Internet on or about the same date.

Why did I receive a Notice of Internet Availability of Proxy Materials instead of a full set of proxy materials?

Pursuant to rules adopted by the Securities and Exchange Commission, or SEC, for most stockholders, we are providing access to our proxy materials over the Internet rather than printing and mailing our proxy materials. We believe following this process will expedite the receipt of such materials and will help lower our costs and reduce the environmental impact of our annual meeting materials. Therefore, the Notice was mailed to holders of record and beneficial owners of our common stock starting on or about May 6, 2020. The Notice provides instructions as to how stockholders may access and review our proxy materials, including the Notice of the 2020 Annual Meeting of Stockholders, this proxy statement, the proxy card and our 2019 Annual Report, on the website referred to in the Notice or, alternatively, how to request that a copy of the proxy materials, including a proxy card, be sent to them by mail. The Notice also provides voting instructions. In addition, stockholders of record may request to receive the proxy materials in printed form by mail or electronically by e-mail on an ongoing basis for future stockholder meetings. Please note that, while our proxy materials are available at the website referenced in the Notice, and our Notice of the 2020 Annual Meeting of Stockholders, this proxy statement and our 2019 Annual Report are available on our website, no other information contained on either website is incorporated by reference in or considered to be a part of this proxy statement.

Who is soliciting my vote?

Our board of directors is soliciting your vote for the Annual Meeting.

When is the record date for the Annual Meeting?

The record date for determination of stockholders entitled to vote at the Annual Meeting is the close of business on April 20, 2020.

How many votes can be cast by all stockholders?

There were 30,490,290 shares of our common stock, par value \$0.0001 per share, outstanding on April 20, 2020, all of which are entitled to vote with respect to all matters to be acted upon at the Annual Meeting of the Stockholders on June 17, 2020, or the Annual Meeting. Each stockholder of record is entitled to one vote for each share of our common stock held by such stockholder. None of our shares of undesignated preferred stock were outstanding as of April 20, 2020.

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How do I vote?

In Person

If you are a stockholder of record, you may vote in person at the Annual Meeting. We will give you a ballot when you arrive. If you hold your shares through a bank or broker and wish to vote in person at the meeting, you must obtain a valid proxy from the firm that holds your shares.

By Proxy

If you do not wish to vote in person or will not be attending the Annual Meeting, you may vote by proxy. You can vote by proxy over the Internet by following the instructions provided in the Notice, or, if you requested printed copies of the proxy materials by mail, you can vote by mailing your proxy as described in the proxy materials. In order to be counted, proxies submitted by Internet must be received by the cutoff time of 11:59 p.m. Eastern Time on June 14, 2020. Proxies submitted by mail must be received before the start of the Annual Meeting. If you complete and submit your proxy before the Annual Meeting, the persons named as proxies will vote the shares represented by your proxy in accordance with your instructions. If you submit a proxy without giving voting instructions, your shares will be voted in the manner recommended by the board of directors on all matters presented in this proxy statement, and as the persons named as proxies may determine in their discretion with respect to any other matters properly presented at the Annual Meeting. You may also authorize another person or persons to act for you as proxy in a writing, signed by you or your authorized representative, specifying the details of those proxies' authority. The original writing must be given to each of the named proxies, although it may be sent to them by electronic transmission if, from that transmission, it can be determined that the transmission was authorized by you.

If any other matters are properly presented for consideration at the Annual Meeting, including, among other things, consideration of a motion to adjourn the Annual Meeting to another time or place (including, without limitation, for the purpose of soliciting additional proxies), the persons named in your proxy and acting thereunder will have discretion to vote on those matters in accordance with their best judgment. We do not currently anticipate that any other matters will be raised at the Annual Meeting.

How do I revoke my proxy?

You may revoke your proxy by (1) following the instructions on the Notice and entering a new vote by mail that we receive before the start of the Annual Meeting or over the Internet by the cutoff time of 11:59 p.m. Eastern Time on June 14, 2020, (2) attending and voting at the Annual Meeting (although attendance at the Annual Meeting will not in and of itself revoke a proxy), or (3) by filing an instrument in writing revoking the proxy or another duly executed proxy bearing a later date with our Corporate Secretary. Any written notice of revocation or subsequent proxy card must be received by our Corporate Secretary prior to the taking of the vote at the Annual Meeting. Such written notice of revocation or subsequent proxy card should be hand delivered to our Corporate Secretary or sent to our principal executive offices at Kaleido Biosciences, Inc., 65 Hayden Ave, Lexington, Massachusetts 02421, Attention: Corporate Secretary.

If a broker, bank, or other nominee holds your shares, you must contact such broker, bank, or nominee in order to find out how to change your vote.

How is a quorum reached?

Our Amended and Restated Bylaws, or bylaws, provide that a majority of the shares entitled to vote, present in person or represented by proxy, will constitute a quorum for the transaction of business at the Annual Meeting.

Under the General Corporation Law of the State of Delaware, or DGCL, shares that are voted "abstain" or "withheld" and broker "non-votes" are counted as present for purposes of determining whether a quorum is present at the Annual Meeting. If a quorum is not present, the meeting may be adjourned until a quorum is obtained.

How is the vote counted?

Under our bylaws, any proposal other than an election of directors is decided by a majority of the votes properly cast for and against such proposal, except where a larger vote is required by law or by our Fifth Amended and Restated Certificate of Incorporation, or certificate of incorporation, or bylaws. Abstentions and broker “non-votes” are not included in the tabulation of the voting results on any such proposal and, therefore, do not have an impact on such proposals. A broker “non-vote” occurs when a nominee holding shares for a beneficial owner does not vote on a particular proposal because the nominee does not have discretionary voting power with respect to that item and has not received instructions from the beneficial owner.

If your shares are held in “street name” by a brokerage firm, your brokerage firm is required to vote your shares according to your instructions. If you do not give instructions to your brokerage firm, the brokerage firm will still be able to vote your shares with respect to certain “discretionary” items, but will not be allowed to vote your shares with respect to “non-discretionary” items. Proposal No. 1 is a “non-discretionary” item. If you do not instruct your broker how to vote with respect to this proposal, your broker may not vote for this proposal, and those votes will be counted as broker “non-votes.” Proposal No. 2 is considered to be a discretionary item, and your brokerage firm will be able to vote on this proposal even if it does not receive instructions from you.

To be elected, the directors nominated via Proposal No. 1 must receive a plurality of the votes cast and entitled to vote on the proposal, meaning that the director nominees receiving the most votes will be elected. Shares voting “withheld” have no effect on the election of directors.

Who pays the cost for soliciting proxies?

We are making this solicitation and will pay the entire cost of preparing and distributing the Notice and our proxy materials and soliciting votes. If you choose to access the proxy materials or vote over the Internet, you are responsible for any Internet access charges that you may incur. Our officers and employees may, without compensation other than their regular compensation, solicit proxies through further mailings, personal conversations, facsimile transmissions, e-mails, or otherwise. We have hired Mediant Communications, Inc. to assist us in the distribution of proxy materials and the solicitation of votes described above. Proxy solicitation expenses that we will pay include those for preparation, mailing, returning, and tabulating the proxies.

How may stockholders submit matters for consideration at an annual meeting?

The required notice must be in writing and received by our corporate secretary at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year’s annual meeting. However, in the event that the date of the annual meeting is advanced by more than 30 days, or delayed by more than 60 days, from the first anniversary of the preceding year’s annual meeting, or if no annual meeting were held in the preceding year, a stockholder’s notice must be so received no earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of (A) the 90th day prior to such annual meeting and (B) the tenth day following the day on which notice of the date of such annual meeting was mailed or public disclosure of the date of such annual meeting was made, whichever first occurs.

In addition, any stockholder proposal intended to be included in the proxy statement for the next annual meeting of our stockholders in 2021 must also satisfy the requirements of SEC Rule 14a-8 under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and be received not later than February 15, 2021. If the date of the annual meeting is moved by more than 30 days from the date contemplated at the time of the previous year’s proxy statement, then notice must be received within a reasonable time before we begin to print and send proxy materials. If that happens, we will publicly announce the deadline for submitting a proposal in a press release or in a document filed with the SEC.

How can I know the voting results?

We plan to announce preliminary voting results at the Annual Meeting and will publish final results in a Current Report on Form 8-K to be filed with the SEC within four business days following the Annual Meeting.

PROPOSAL NO. 1 – ELECTION OF CLASS I DIRECTORS

Our board of directors currently consists of eight members. In accordance with the terms of our certificate of incorporation and bylaws, our board of directors is divided into three classes, Class I, Class II and Class III, with members of each class serving staggered three-year terms. The members of the classes are divided as follows:

- the Class I directors are Michael Bonney, Bonnie L. Bassler and Geoffrey von Maltzahn, and their terms will expire at the Annual Meeting;
- the Class II directors are Alison Lawton, Jean Mixer and Anthony Quinn, and their terms will expire at the annual meeting of stockholders to be held in 2021; and
- the Class III directors are Grady Burnett, Theo Melas-Kyriazi and Anne Prener, and their terms will expire at the annual meeting of stockholders to be held in 2022.

Upon the expiration of the term of a class of directors, directors in that class will be eligible to be elected for a new three-year term at the annual meeting of stockholders in the year in which their term expires.

Our certificate of incorporation and bylaws provide that the authorized number of directors may be changed only by resolution of our board of directors. Our certificate of incorporation also provides that our directors may be removed only for cause by the affirmative vote of the holders of at least two-thirds (2/3) of the outstanding shares then entitled to vote in an annual election of directors, and that any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office, subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock to elect directors and to fill vacancies in the board of directors relating thereto.

Our board of directors has nominated Michael Bonney, Bonnie L. Bassler and Geoffrey von Maltzahn for election as the Class I directors at the Annual Meeting. The nominees are presently directors and have indicated a willingness to continue to serve as directors, if elected. If the nominees become unable or unwilling to serve, however, the proxies may be voted for a substitute nominee selected by our board of directors.

We have no formal policy regarding board diversity. Our priority in selection of board members is identification of members who will further the interests of our stockholders through their established record of professional accomplishment, their ability to contribute positively to the collaborative culture among board members, and their knowledge of our business and understanding of the competitive landscape.

Nominees for Election as Class I Directors

The following table identifies our director nominees, sets forth their principal occupation and business experience during the last five years and provides their ages as of May 1, 2020.

Name	Positions and Offices Held with Kaleido	Director Since	Age
Michael Bonney	Chairman of the Board of Directors, Chief Executive Officer	2017	61
Bonnie L. Bassler	Director	2018	58
Geoffrey von Maltzahn	Director	2015	39

Michael Bonney has served as the Executive Chair of the Board of Directors since August 2018. Mr. Bonney has also served as Managing Director of Sasanoa Advisory Group Enterprises, LLC, a CEO advisory firm, since June 2019. Previously, Mr. Bonney served as our Chief Executive Officer and Chair of the Board of Directors from June 2017 until August 2018. Mr. Bonney has also served as Chairman of the board of directors of Magenta Therapeutics, Inc., a biotechnology company, since June 2018, and he previously served as Executive Chairman from November 2016 until June 2018. Prior to that, he served as Partner at Third Rock

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Ventures, LLC, a venture capital firm, from January 2016 to July 2016. Before joining Third Rock Ventures, LLC, Mr. Bonney served as CEO and Director at Cubist Pharmaceuticals, Inc., a biopharmaceutical company, from 2003 until 2015, when it was acquired by Merck. In addition to his role as Chairman of the board of Magenta, Mr. Bonney chairs the board of directors of Alnylam Pharmaceuticals, Inc. and serves as a board member of Bristol-Myers Squibb, since the acquisition of Celgene in November 2019. Mr. Bonney previously served on the boards of Global Blood Therapeutics from 2016 to 2017, Revolution Medicines from 2016 to 2017, NPS Pharmaceuticals, Inc. from 2005 to 2015, Sarepta Therapeutics, Inc. from 2017 to 2020 and Syros Therapeutics since from 2018 to 2020. He received a B.A. in economics from Bates College. We believe that Mr. Bonney is qualified to serve on our board of directors based on our review of his experience, qualifications, attributes and skills, including his extensive experience in leadership roles at other biotech ventures.

Bonnie L. Bassler, Ph.D. has served as a Director of our company since December 2018. Dr. Bassler currently serves in several roles at Princeton University, including, Chair of the Department of Molecular Biology since 2013, associated faculty member of the Department of Chemistry since 2010, Director for Recruiting and Diversity in the Sciences since 2008, investigator at the Howard Hughes Medical Institute since 2005, professor in the Department of Molecular Biology since 1994 and associate faculty member of the Princeton Environmental Institute since 1996. Previously, Dr. Bassler served as the Director of the Council on Science and Technology at Princeton University from July 2008 to June 2013. Dr. Bassler has served as a board member of Regeneron Pharmaceuticals, Inc. since 2016 and as a Trustee of the Alfred P. Sloan Foundation since 2014, and previously served as a board member of Sanofi from November 2014 to September 2016. Dr. Bassler served as a board member of the American Association for the Advancement of Science from January 2012 to December 2016. She was a member of the National Science Board from January 2010 until May 2016. She received a B.S. in biochemistry from the University of California-Davis and a Ph.D. in biochemistry from John Hopkins University. We believe that Dr. Bassler is qualified to serve on our board of directors based on our review of her experience, qualifications, attributes and skills, including her extensive experience in scientific research roles at elite universities.

Geoffrey von Maltzahn, Ph.D. has served as a Director for our company since August 2015, and also acts as an advisor on new innovation opportunities for our product platform, technology and approach to targeting the microbiome organ. He is a General Partner at Flagship Pioneering focused on company origination and has been with Flagship since 2009. Dr. von Maltzahn was founder of our company and served as our Chief Executive Officer from January 2015 to June 2017 and as Chief Innovation Officer from June 2017 to September 2018. Dr. von Maltzahn also serves as the Chief Innovation Officer of Indigo Agriculture, Inc., an agriculture biotechnology company he co-founded in 2013 as part of Flagship Pioneering's Flagship Labs innovation foundry. Dr. von Maltzahn was also a member of the Flagship Pioneering founding team for Seres Therapeutics, Inc. in 2010, and he subsequently served as Chief Technology Officer at Seres in 2012. Prior to working on Seres, Dr. von Maltzahn worked on the Flagship Pioneering founding team for Axcella Health, Inc., a biotechnology company, in 2009, and he served as Vice President of Discovery at Axcella from 2009 until 2013. Dr. von Maltzahn was awarded a Ph.D. in biomedical engineering and medical physics from MIT, a M.S. in bioengineering from the University of California, San Diego, and an S.B. in chemical engineering from MIT. We believe that Dr. von Maltzahn's significant experience co-founding and leading numerous biotechnology companies makes him qualified to serve on our board of directors.

The proxies will be voted in favor of the above nominees unless a contrary specification is made in the proxy. The nominees have consented to serve as our directors if elected. However, if the nominees are unable to serve or for good cause will not serve as a director, the proxies will be voted for the election of such substitute nominee as our board of directors may designate.

The board of directors recommends voting "FOR" the election of Michael Bonney, Bonnie L. Bassler and Geoffrey von Maltzahn as the Class I directors, to serve for a three-year term ending at the annual meeting of stockholders to be held in 2023.

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Directors Continuing in Office

The following table identifies our continuing directors, sets forth their principal occupation and business experience during the last five years and provides their ages as of May 1, 2020.

Name	Position and Officers Held with Kaleido	Director Since	Class and Year in Which Term Will Expire	Age
Alison Lawton	Director, President and Chief Executive Officer	2018	Class II - 2021	58
Jean Mixer	Director	2019	Class II - 2021	53
Anthony Quinn	Director	2016	Class II - 2021	58
Theo Melas-Kyriazi	Director	2019	Class III - 2022	60
Grady Burnett	Director	2018	Class III - 2022	47
Anne Prener	Director	2020	Class III - 2022	62

Class II Directors (Term Expires at 2021 Annual Meeting)

Alison Lawton has served as our Chief Executive Officer and President and as a Director since August 2018. Prior to becoming Chief Executive Officer, Ms. Lawton served as our President and Chief Operating Officer from December 2017 to August 2018. Prior to joining us, Ms. Lawton was Chief Operating Officer at Aura Biosciences, Inc., an oncology therapeutics company, from January 2015 until December 2017, and, prior to joining Aura, served as a consultant to Aura from March 2014 to December 2014. Before that, Ms. Lawton served as Chief Operating Officer at OvaScience Inc., a life sciences company, from January 2013 to January 2014. In addition, from 2014 to 2017, Ms. Lawton served as a biotech consultant for various companies, including as Chief Operating Officer consultant at X4 Pharmaceuticals. Prior to that, Ms. Lawton spent more than 20 years in various positions of increasing responsibility at Genzyme Corporation, a global biopharmaceutical company, and subsequently at Sanofi S.A., also a global biopharmaceutical company, following the acquisition of Genzyme by Sanofi in 2011. Ms. Lawton currently serves as a member of the board of directors of ProQR Therapeutics N.V. and Verastem, Inc. and has served on those boards since September 2014 and November 2012, respectively. Ms. Lawton previously served as a director at CoLucid Pharmaceuticals, Inc. from 2016 until its acquisition by Eli Lilly in 2017, as a director at Cubist Pharmaceuticals, Inc. from February 2012 to December 2014 until its acquisition by Merck, and as a director at Magenta Therapeutics, Inc. from May 2017 to March 2018. She holds a B.Sc. in pharmacology from Kings College, University of London. We believe that Ms. Lawton is qualified to serve on our board of directors based on our review of her experience, qualifications, attributes and skills, including experience in operations management and executive leadership.

Jean Mixer has served as a Director of our company since October 2019. Ms. Mixer is the Chief Digital Transformation Officer and Vice President of Strategy at Boston Children's Hospital, which she joined in January 2014. From 2005 to January 2014, she served as Chief Executive Officer of mixerconsulting, which has helped organizations grow through strategic and organizational work. From 1992 to 2004, she was at the Boston Consulting Group, where she was partner in the Boston office. Before that, Ms. Mixer was an officer at J.P. Morgan in New York. From 2006 to February 2019, Ms. Mixer was a director on the board of NxStage Medical, Inc. where she served on the audit and compensation committees. From 2006 to January 2014, Ms. Mixer was a director on the board of the Cambridge Trust Company, a commercial bank, where she also served as a member of the board's executive committee and chair of its compensation committee. She is also an overseer at the Boys and Girls Clubs of Boston. Formerly, she served on the Business Roundtable Committee on National Health Care Reform. She has worked broadly across the restructuring healthcare market, including providers, payers, pharmaceuticals, medical devices, pharmacies and pharmacy benefit managers. She has a masters from Kellogg School of Management, Northwestern. We believe Ms. Mixer's extensive experience with respect to strategy, mergers and acquisitions, finance, leadership, and governance qualifies her to serve on our board of directors.

Anthony G. Quinn, M.D., Ph.D. has served as a Director for our company since February 2016. Currently Dr. Quinn is President and Chief Executive Officer of Aeglea BioTherapeutics, Inc., a biotechnology company where he has served as a Director since March 2016 and as CEO since July 2018. Prior to that, from

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October 2015 to July 2017 he worked as a private consultant for IDBioPharm Consulting LLC, a consulting firm. From August 2009 to June 2015, Dr. Quinn served as Head of Research & Development and Chief Medical Officer (initially at the Senior Vice President level and subsequently at the Executive Vice President level) for Synageva BioPharma Corp., a publicly traded biopharmaceutical company that was acquired by Alexion Pharmaceuticals, Inc. in June 2015. Following the acquisition, Dr. Quinn worked for Alexion Pharmaceuticals, Inc., a pharmaceutical company, from June 2015 to September 2015. Dr. Quinn received his BMSc. in general pathology and his MB ChB (M.D.) from the University of Dundee, UK. and his Ph.D. in cancer research from the University of Newcastle in Tyne, UK. He completed a postdoctoral fellowship at University of California, San Francisco before being appointed Professor of Dermatology at Barts & The London School of Medicine, UK. He is a fellow of the Royal College of Physicians London. He also currently serves as a member of the board of directors for Generation Bio. We believe Dr. Quinn is qualified to serve on our board of directors because of his medical and clinical experience in the biopharmaceutical industry, including the development of therapeutics for rare diseases.

Class III Directors (Term Expires at 2022 Annual Meeting)

Theo Melas-Kyriazi has served as a Director for our company since July 2019. Mr. Melas-Kyriazi has served as Chief Financial Officer of Levitronix Technologies Inc. and its predecessor companies since 2006. Levitronix Technologies Inc. manufactures and sells magnetically-levitated pumps primarily to microelectronics and life sciences customers. Mr. Melas-Kyriazi also serves as an Executive Partner at Flagship Pioneering, an innovation enterprise that conceives, creates, resources and grows first-in-category life sciences companies, which he joined in April 2019. Mr. Melas-Kyriazi served as a director at Evelo Biosciences, Inc. a role he has held since February 2017. He also served as a director at Valeant Pharmaceuticals International, Inc from 2003 to 2016. From 1986 to 2004, Mr. Melas-Kyriazi served in a variety of management roles at Thermo Fisher Scientific. Mr. Melas-Kyriazi received his M.B.A. from Harvard Business School. We believe Mr. Melas-Kyriazi's extensive financial and business experience in life sciences companies qualifies him to serve on our board of directors.

Grady Burnett has served as a Director of our company since September 2018. Mr. Burnett currently serves as the General Partner at Bow Capital, an early stage venture capital firm, a position he has held since co-founding the company in July 2016. Previously, he served as the President and Chief Operating Officer of HackerRank, a technology company, from September 2015 until July 2016. Before that, from September 2013 until October 2014, Mr. Burnett served as the Chief Operating Officer of Flurry, Inc., a mobile analytics, monetization and advertising company. Mr. Burnett has also served as Vice President of Global Sales and Operations at Facebook, Inc. from 2009 to 2013 and was also previously the Director of North American Sales and Operations for Google LLC's AdWords team. Mr. Burnett is a member of the board of directors of East Palo Alto Tennis & Tutoring, Menlo School and Kenshoo, Ltd. He has an M.B.A. from the Harvard Business School and a bachelor's degree from the University of Michigan. We believe that Mr. Burnett is qualified to serve on our board of directors based on our review of his experience, qualifications, attributes and skills, including his experience in scaling companies and driving revenue growth.

Anne Prener, M.D., Ph.D. has served as a Director of our company since April 2020. Dr. Prener was the CEO of Freeline from 2017 to 2019. Freeline is a liver-directed gene therapy company and during her time as CEO, the company progressed from preclinical stage to a fully integrated biotechnology organization. Prior to joining Freeline, Dr. Prener served as CEO of Gyroscope Therapeutics Ltd., a gene therapy company focused on eye diseases, from 2016 to 2017. Before that, Dr. Prener was an executive at Baxalta from 2014 to 2016, including as Global Therapeutic Area Head of Hematology. From 1995 to 2013, Dr. Prener held positions of increasing responsibility at Novo Nordisk, most recently as Senior Vice President, Hemophilia R&D Portfolio. Dr. Prener has served as a member of the board of directors of SwanBio Therapeutics since 2018 and Gyroscope Therapeutics since 2017 and is also a council member of the Novo Nordisk Haemophilia Foundation. Dr. Prener received her M.D. and Ph.D. from the University of Copenhagen. We believe that Dr. Prener is qualified to serve on our board of directors because of her medical and clinical experience in the biopharmaceutical industry,

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including her experience in clinical development and in scaling companies from preclinical stage to fully integrated biotechnology organizations.

There are no family relationships between or among any of our directors or executive officers. The principal occupation and employment during the past five years of each of our directors was carried on, in each case except as specifically identified in this proxy statement, with a corporation or organization that is not a parent, subsidiary or other affiliate of us. There is no arrangement or understanding between any of our directors and any other person or persons pursuant to which he or she is to be selected as a director.

There are no material legal proceedings to which any of our directors is a party adverse to us or any of our subsidiaries or in which any such person has a material interest adverse to us or our subsidiary.

Executive Officers Who Are Not Directors

The following table identifies our executive officers who are not directors, sets forth their current positions at Kaleido and provides their ages as of April 20, 2020.

Name	Position Held with Kaleido	Officer Since	Age
Katharine Knobil, M.D.	Chief Medical Officer and Head of Research and Development	2018	56
William Duke, Jr.	Chief Financial Officer	2019	47
Jerald Korn	General Counsel	2019	41

Katharine Knobil, M.D. has served as our Chief Medical Officer and Head of Research and Development since December 2018. Prior to joining us, Dr. Knobil served in various roles at GlaxoSmithKline plc, a pharmaceutical company, from January 1997 until December 2018, including Chief Medical Officer, Senior Vice President of Value Evidence and Outcomes, Vice President of Medicines Development, Global Vice President of Respiratory Clinical Development at the Respiratory and Immunoinflammation Medicines Development Centre and Global Vice President of COPD and NCEs at the Respiratory Medicines Development Centre. Dr. Knobil was on the board of directors of the National Health Council from January 2017 to December 2018 and was a member of the National Academies of Sciences Engineering and Medicine's Drug Forum. She received a B.A. in biology from Cornell University and an M.D. from The University of Texas Southwestern Medical School.

William Duke, Jr. has served as our Chief Financial Officer since November 2019. Prior to joining us, Mr. Duke served as the chief financial officer for Pulmatrix, Inc from June 2015 to November 2019. Prior to Pulmatrix, Mr. Duke served as the Chief Financial Officer of Valeritas, a medical technology company, from January 2014 until June 2015 and from July 2011 until January 2014, he served as Valeritas' Vice President and Corporate Controller. At Valeritas, Mr. Duke led the controller relationship, financial planning and analysis, investor relations and information technology functions. Prior to joining Valeritas, Mr. Duke was Senior Director, Finance for Genzyme Corporation, a biopharmaceutical company, from January 2010 to July 2011, where he had oversight responsibility for external reporting to the Securities and Exchange Commission, internal management reporting and worldwide financial consolidation. Prior to Genzyme, he was the Director of Finance and Accounting of Haemonetics Corporation, a medical device company, from May 2008 to January 2010 and held various senior financial roles with consulting services and emerging growth organizations. Mr. Duke holds a B.S. in Accounting from Stonehill College and a M.B.A. with a concentration in Finance from Bentley University and is a Certified Public Accountant.

Jerald Korn has served as our General Counsel and Corporate Secretary since July 2019. Prior to joining us, Mr. Korn served in various roles at TESARO, Inc. from April 2015 to July 2019, including General Counsel and Chief Administrative Officer, Global Chief Compliance Officer and Deputy General Counsel, and Assistant General Counsel and Compliance Officer. Prior to TESARO, Mr. Korn served as Associate General

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Counsel at Cubist Pharmaceuticals from August 2013 to March 2015, as Deputy Chief Compliance Officer at Millennium Pharmaceuticals from July 2011 to August 2013 and as Associate General Counsel and Compliance Officer at AMAG Pharmaceuticals from August 2008 to July 2011. Prior to AMAG Pharmaceuticals, he was an associate in the law firm of Ropes & Gray LLP. Mr. Korn holds a bachelor's degree from Harvard University and J.D. from Boston University School of Law.

The principal occupation and employment during the past five years of each of our executive officers was carried on, in each case except as specifically identified in this proxy statement, with a corporation or organization that is not a parent, subsidiary or other affiliate of us. There is no arrangement or understanding between any of our executive officers and any other person or persons pursuant to which he was or is to be selected as an executive officer.

There are no material legal proceedings to which any of our executive officers is a party adverse to us or our subsidiary or in which any such person has a material interest adverse to us or our subsidiary.

**PROPOSAL NO. 2 – RATIFICATION OF THE APPOINTMENT OF DELOITTE & TOUCHE LLP
AS KALEIDO’S INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE
FISCAL YEAR ENDING DECEMBER 31, 2020**

Kaleido’s stockholders are being asked to ratify the appointment by the audit committee of the board of directors of Deloitte & Touche LLP as the Company’s independent registered public accounting firm for the fiscal year ending December 31, 2020. Deloitte & Touche LLP has served as Kaleido’s independent registered public accounting firm since 2017.

The audit committee is solely responsible for selecting Kaleido’s independent registered public accounting firm for the fiscal year ending December 31, 2020. Stockholder approval is not required to appoint Deloitte & Touche LLP as Kaleido’s independent registered public accounting firm. However, the board of directors believes that submitting the appointment of Deloitte & Touche LLP to the stockholders for ratification is good corporate governance. If the stockholders do not ratify this appointment, the audit committee will reconsider whether to retain Deloitte & Touche LLP. If the selection of Deloitte & Touche LLP is ratified, the audit committee, at its discretion, may direct the appointment of a different independent registered public accounting firm at any time it decides that such a change would be in the best interest of Kaleido and its stockholders.

A representative of Deloitte & Touche LLP is expected to be present at the Annual Meeting and will have an opportunity to make a statement if he or she desires to do so and to respond to appropriate questions from our stockholders.

Kaleido incurred the following fees from Deloitte & Touche LLP for the audit of the consolidated financial statements and for other services provided during the years ended December 31, 2019 and 2018.

<u>Fee Category</u>	<u>Fiscal Year 2019 (\$)</u>	<u>Fiscal Year 2018 (\$)</u>
Audit Fees(1)	\$357,419	\$202,326
Audit-Related Fees(2)	\$133,778	\$380,904
Tax Fees(3)	—	—
All Other Fees(4)	\$ 1,895	\$ 1,895
Total Fees	<u>\$493,092</u>	<u>\$585,125</u>

- (1) Audit fees consist of fees for professional services rendered in connection with the audit of our annual consolidated financial statements, the review of the interim consolidated financial statements included in quarterly reports and services that are normally provided by Deloitte & Touche LLP, such as comfort letters, in connection with statutory and regulatory filings or engagements.
- (2) Audit-related fees consist of fees for accounting consultations and other services that were reasonable related to the performance of audits or reviews of our financial statements and were not reported above under “Audit Fees”.
- (3) Tax Fees consist of fees for tax compliance, advice and tax services. There were no tax fees in fiscal years 2019 and 2018.
- (4) All Other Fees consist of fees billed for products and services provided by the independent registered public accounting firm other than those disclosed above.

Audit Committee Pre-approval Policy and Procedures

Our audit committee has adopted policies and procedures relating to the approval of all audit and non-audit services that are to be performed by our independent registered public accounting firm. This policy provides that we will not engage our independent registered public accounting firm to render audit or non-audit services unless the service is specifically approved in advance by our audit committee or the engagement is entered into pursuant to the pre-approval procedure described below.

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From time to time, our audit committee may pre-approve specified types of services that are expected to be provided to us by our independent registered public accounting firm during the next 12 months. Any such pre-approval details the particular service or type of services to be provided and is also generally subject to a maximum dollar amount.

During our 2019 and 2018 fiscal years, no services were provided to us by Deloitte & Touche LLP other than in accordance with the pre-approval policies and procedures described above.

The board of directors recommends voting “FOR” Proposal No. 2 to ratify the appointment of Deloitte & Touche LLP as Kaleido’s independent registered public accounting firm for the fiscal year ending December 31, 2020.

CORPORATE GOVERNANCE

Director Nomination Process

Our nominating and corporate governance committee is responsible for identifying individuals qualified to serve as directors, consistent with criteria approved by our board of directors, and recommending such persons to be nominated for election as directors, except where we are legally required by contract, law or otherwise to provide third parties with the right to nominate.

The process followed by our nominating and corporate governance committee to identify and evaluate director candidates includes requests to board members and others for recommendations, meetings from time to time to evaluate biographical information and background material relating to potential candidates, and interviews of selected candidates by management, recruiters, members of the committee and our board. The qualifications, qualities and skills that our nominating and corporate governance committee believes must be met by a committee recommended nominee for a position on our board of directors are as follows:

- Nominees should demonstrate high standards of personal and professional ethics and integrity.
- Nominees should have proven achievement and competence in the nominee's field and the ability to exercise sound business judgment.
- Nominees should have skills that are complementary to those of the existing board of directors.
- Nominees should have the ability to assist and support management and make significant contributions to the Company's success.
- Nominees should have an understanding of the fiduciary responsibilities that is required of a member of the board of directors and the commitment of time and energy necessary to diligently carry out those responsibilities.

Stockholders may recommend individuals to the nominating and corporate governance committee for consideration as potential director candidates. Any such proposals should be submitted to our corporate secretary at our principal executive offices no later than the close of business on the 90th day nor earlier than the close of business on the 120th day prior to the one-year anniversary of the date of the preceding year's annual meeting and should include appropriate biographical and background material to allow the nominating and corporate governance committee to properly evaluate the potential director candidate and the number of shares of our stock beneficially owned by the stockholder proposing the candidate. Stockholder proposals should be addressed to Kaleido Biosciences, Inc., 65 Hayden Ave, Lexington, Massachusetts 02421, Attention: Corporate Secretary. Assuming that biographical and background material has been provided on a timely basis in accordance with our bylaws, any recommendations received from stockholders will be evaluated in the same manner as potential nominees proposed by the nominating and corporate governance committee. If our board of directors determines to nominate a stockholder recommended candidate and recommends his or her election, then his or her name will be included on our proxy card for the next annual meeting of stockholders. See "Stockholder Proposals" for a discussion of submitting stockholder proposals.

Director Independence

Applicable Nasdaq Stock Market LLC, or Nasdaq, rules require a majority of a listed company's board of directors to be comprised of independent directors within one year of listing. In addition, the Nasdaq rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent and that audit committee members also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act and that compensation committee members satisfy independence criteria set forth in Rule 10C-1 under the Exchange Act. Under applicable Nasdaq rules, a director will only qualify as an "independent director" if, in the opinion of the listed company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment

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in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries. In addition, in affirmatively determining the independence of any director who will serve on a company's compensation committee, Rule 10C-1 under the Exchange Act requires that a company's board of directors must consider all factors specifically relevant to determining whether a director has a relationship to such company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including: the source of compensation to the director, including any consulting, advisory or other compensatory fee paid by such company to the director, and whether the director is affiliated with the company or any of its subsidiaries or affiliates.

In February 2019, our board of directors undertook a review of the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that all members of the board of directors, except Michael Bonney, Allison Lawton and Geoffrey von Maltzahn, are independent directors, including for purposes of the rules of Nasdaq and the SEC. In making such independence determination, our board of directors considered the relationships that each non-employee director has with us and all other facts and circumstances that our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director. In considering the independence of the directors listed above, our board of directors considered the association of our directors with the holders of more than 5% of our common stock. There are no family relationships among any of our directors or executive officers. Ms. Lawton is not an independent director under these rules because she is an executive officer of the Company. Mr. Bonney and Dr. von Maltzahn are not independent directors under these rules because each of them has served as an executive officer of the Company within the last three years.

Board Committees

Our board of directors has established an audit committee, a compensation committee, and a nominating and corporate governance committee. Each of the audit committee, compensation committee, and nominating and corporate governance committee operates under a charter that satisfies the applicable standards of the SEC and Nasdaq. Each such committee reviews its respective charter at least annually. A current copy of the charter for each of the audit committee, compensation committee, and nominating and corporate governance committee is posted on the corporate governance section of our website, <https://investors.kaleido.com/corporate-governance/documents-charters>.

Audit Committee

Theo Melas-Kyriazi, Jean Mixer and Grady Burnett serve on the audit committee, which is chaired by Theo Melas-Kyriazi. Our board of directors has determined that each member of the audit committee is "independent" for audit committee purposes as that term is defined in the rules of the SEC and the applicable Nasdaq rules, and each has sufficient knowledge in financial and auditing matters to serve on the audit committee. Our board of directors has designated each of Theo Melas-Kyriazi and Grady Burnett as an "audit committee financial expert," as defined under the applicable rules of the SEC. During the fiscal year ended December 31, 2019, the audit committee met three times. The report of the audit committee is included in this proxy statement under "Report of the Audit Committee." The functions of the audit committee include:

- appointing, approving the compensation of and assessing the independence of our independent registered public accounting firm;
- pre-approving auditing and permissible non-audit services, and the terms of such services, to be provided by our independent registered public accounting firm;

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- reviewing the overall audit plan with our independent registered public accounting firm and members of management responsible for preparing our financial statements;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures as well as critical accounting policies and practices used by us;
- coordinating the oversight and reviewing the adequacy of our internal control over financial reporting;
- establishing policies and procedures for the receipt and retention of accounting-related complaints and concerns;
- recommending based upon the audit committee's review and discussions with management and our independent registered public accounting firm whether our audited financial statements shall be included in our Annual Report on Form 10-K;
- monitoring the integrity of our financial statements and our compliance with legal and regulatory requirements as they relate to our financial statements and accounting matters;
- preparing the audit committee report required by SEC rules to be included in our annual proxy statement;
- reviewing all related person transactions for potential conflict of interest situations and approving all such transactions; and
- reviewing quarterly earnings releases.

All audit and non-audit services, other than *de minimis* non-audit services, to be provided to us by our independent registered public accounting firm must be approved in advance by our audit committee.

Compensation Committee

Jean Mixer, Theo Melas-Kyriazi and Anthony Quinn serve on the compensation committee, which is chaired by Anthony Quinn. Our board of directors has determined that each member of the compensation committee is "independent" as defined in the applicable Nasdaq rules. During the fiscal year ended December 31, 2019, the compensation committee met four times. The functions of the nominating and corporate governance committee include:

- annually reviewing and recommending to the board of directors the corporate goals and objectives relevant to the compensation of our Chief Executive Officer;
- evaluating the performance of our Chief Executive Officer in light of such corporate goals and objectives and based on such evaluation (i) recommending to the board of directors the cash compensation of our Chief Executive Officer and (ii) recommending grants and awards to our Chief Executive Officer under equity-based plans;
- reviewing and approving or recommending to the board of directors the cash compensation of our other executive officers;
- reviewing and establishing our overall management compensation, philosophy and policy;
- overseeing and administering our compensation and similar plans;
- evaluating and assessing potential and current compensation advisors in accordance with the independence standards identified in the applicable Nasdaq rules;
- reviewing and approving our policies and procedures for the grant of equity-based awards;
- reviewing and recommending to the board of directors the compensation of our directors;

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- preparing the compensation committee report required by SEC rules, if and when required, to be included in our annual proxy statement; and
- reviewing and approving the retention, termination or compensation of any consulting firm or outside advisor to assist in the evaluation of compensation matters.

Nominating and Corporate Governance Committee

Bonnie L. Bassler, Grady Burnett and Anne Prener serve on the nominating and corporate governance committee, which is chaired by Bonnie L. Bassler. Our board of directors has determined that each member of the nominating and corporate governance committee is “independent” as defined in the applicable Nasdaq rules. During the fiscal year ended December 31, 2019, the nominating and corporate governance committee met one time. The functions of the nominating and corporate governance committee include:

- developing and recommending to the board of directors criteria for board and committee membership;
- establishing procedures for identifying and evaluating board of director candidates, including nominees recommended by stockholders;
- reviewing the composition of the board of directors to ensure that it is composed of members containing the appropriate skills and expertise to advise us;
- identifying individuals qualified to become members of the board of directors;
- recommending to the board of directors the persons to be nominated for election as directors and to each of the board’s committees;
- developing and recommending to the board of directors a code of business conduct and ethics and a set of corporate governance guidelines; and
- overseeing the evaluation of our board of directors and management.

The nominating and corporate governance committee considers candidates for Board of Director membership suggested by its members and the Chief Executive Officer. Additionally, in selecting nominees for directors, the nominating and corporate governance committee will review candidates recommended by stockholders in the same manner and using the same general criteria as candidates recruited by the committee and/or recommended by our board of directors. Any stockholder who wishes to recommend a candidate for consideration by the committee as a nominee for director should follow the procedures described later in this proxy statement under the heading “Stockholder Proposals.” The nominating and corporate governance committee will also consider whether to nominate any person proposed by a stockholder in accordance with the provisions of our bylaws relating to stockholder nominations as described later in this proxy statement under the heading “Stockholder Proposals.”

Identifying and Evaluating Director Nominees. Our board of directors is responsible for filling vacancies on our board of directors and for nominating candidates for election by our stockholders each year in the class of directors whose term expires at the relevant annual meeting. The board of directors delegates the selection and nomination process to the nominating and corporate governance committee, with the expectation that other members of the board of directors, and of management, will be requested to take part in the process as appropriate.

Generally, the nominating and corporate governance committee identifies candidates for director nominees in consultation with management, through the use of search firms or other advisors, through the recommendations submitted by stockholders or through such other methods as the nominating and corporate governance committee deems to be helpful to identify candidates. Once candidates have been identified, the nominating and corporate governance committee confirms that the candidates meet all of the minimum

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qualifications for director nominees established by the nominating and corporate governance committee. The nominating and corporate governance committee may gather information about the candidates through interviews, detailed questionnaires, comprehensive background checks or any other means that the nominating and corporate governance committee deems to be appropriate in the evaluation process. The nominating and corporate governance committee then meets as a group to discuss and evaluate the qualities and skills of each candidate, both on an individual basis and taking into account the overall composition and needs of our board of directors. based on the results of the evaluation process, the nominating and corporate governance committee recommends candidates for the board of directors' approval to fill a vacancy or as director nominees for election to the board of directors by our stockholders each year in the class of directors whose term expires at the relevant annual meeting.

Board and Committee Meetings Attendance

The full board of directors met seven times during 2019. During 2019, each member of the board of directors attended in person or participated in 75% or more of the aggregate of (i) the total number of meetings of the board of directors (held during the period for which such person has been a director), and (ii) the total number of meetings held by all committees of the board of directors on which such person served (during the periods that such person served).

Director Attendance at Annual Meeting of Stockholders

Directors are responsible for attending the annual meeting of stockholders to the extent practicable. We did not hold an annual meeting of stockholders in 2019.

Policy on Trading, Pledging and Hedging of Company Stock

Certain transactions in our securities (such as purchases and sales of publicly traded put and call options, and short sales) create a heightened compliance risk or could create the appearance of misalignment between management and stockholders. In addition, securities held in a margin account or pledged as collateral may be sold without consent if the owner fails to meet a margin call or defaults on the loan, thus creating the risk that a sale may occur at a time when an officer or director is aware of material, non-public information or otherwise is not permitted to trade in Company securities. Our insider trading policy expressly prohibits derivative transactions of our stock by our executive officers, directors and employees. Our insider trading policy expressly prohibits purchases of any derivative securities that provide the economic equivalent of ownership.

Code of Business Conduct and Ethics

We have adopted 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. A current copy of the code is posted on the corporate governance section of our website, which is located at <https://investors.kaleido.com/corporate-governance/documents-charters>. If we make any substantive amendments to, or grant any waivers from, the code of business conduct and ethics for any officer or director, we will disclose the nature of such amendment or waiver on our website or in a current report on Form 8-K.

Board Leadership Structure and Board's Role in Risk Oversight

Currently, the role of chairman of the board is separated from the role of chief executive officer, and we plan to keep these roles separate. We believe that separating these positions allows our chief executive officer to focus on our day-to-day business, while allowing the chairman of the board to lead the board of directors in its fundamental role of providing advice to and independent oversight of management. Our board of directors recognizes the time, effort, and energy that the chief executive officer is required to devote to her position in the

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current business environment, as well as the commitment required to serve as our chairman, particularly as the board of directors' oversight responsibilities continue to grow. While our bylaws and our corporate governance guidelines do not require that our chairman of the board and chief executive officer positions be separate, our board of directors believes that having separate positions is the appropriate leadership structure for us at this time and demonstrates our commitment to good corporate governance.

Risk is inherent to every business, and how well a business manages risk can ultimately determine its success. We face a number of risks, including risks relating to our financial condition, development and commercialization activities, operations, strategic direction, and intellectual property. Management is responsible for the day-to-day management of risks we face, while our board of directors, as a whole and through its committees, has responsibility for the oversight of risk management. In its risk oversight role, our board of directors has the responsibility to satisfy itself that the risk management processes designed and implemented by management are adequate and functioning as designed.

The role of the board of directors in overseeing the management of our risks is conducted primarily through committees of the board of directors, as disclosed in the descriptions of each of the committees above and in the charters of each of the committees. The full board of directors (or the appropriate board committee in the case of risks that are under the purview of a particular committee) discusses with management our major risk exposures, their potential impact on us, and the steps we take to manage them. When a board committee is responsible for evaluating and overseeing the management of a particular risk or risks, the chairman of the relevant committee reports on the discussion to the full board of directors during the committee reports portion of the next board meeting. This enables the board of directors and its committees to coordinate the risk oversight role, particularly with respect to risk interrelationships.

Communication with the Directors of Kaleido

Any interested party with concerns about our company may report such concerns to the board of directors or the chairman of our board of directors and nominating and corporate governance committee, by submitting a written communication to the attention of such director at the following address:

c/o Kaleido Biosciences, Inc.
65 Hayden Ave
Lexington, Massachusetts 02421
United States

You may submit your concern anonymously or confidentially by postal mail. You may also indicate whether you are a stockholder, customer, supplier, or other interested party.

A copy of any such written communication may also be forwarded to Kaleido's legal counsel and a copy of such communication may be retained for a reasonable period of time. The director may discuss the matter with Kaleido's legal counsel, with independent advisors, with non-management directors, or with Kaleido's management, or may take other action or no action as the director determines in good faith, using reasonable judgment, and applying his or her own discretion.

Communications may be forwarded to other directors if they relate to important substantive matters and include suggestions or comments that may be important for other 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.

The audit committee oversees the procedures for the receipt, retention, and treatment of complaints received by Kaleido regarding accounting, internal accounting controls, or audit matters, and the confidential,

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anonymous submission by employees of concerns regarding questionable accounting, internal accounting controls or auditing matters. Kaleido has also established a toll-free telephone number for the reporting of such activity, which is 866-290-6353.

Director Compensation

The table below shows all compensation earned by or paid to our non-employee directors during 2019. We also do not, and do not expect to, provide separate compensation to our directors who are also our employees, such as Ms. Lawton, our Chief Executive Officer and President, and consequently is not included in this table. The compensation received by Ms. Lawton during 2019 is set forth in the section of this proxy statement captioned "Executive Compensation—Summary Compensation Table."

<u>Name</u>	<u>Fees Paid</u>	<u>Option</u>	<u>Total(\$)</u>
	<u>Cash(\$)(1)</u>	<u>Awards(\$)</u>	
Michael Bonney ⁽³⁾	397,503	—	397,503
Bonnie Bassler, Ph.D. ⁽⁴⁾	39,000	—	39,000
Grady Burnett ⁽⁵⁾	46,250	—	46,250
Theo Melas-Kyriazi ⁽⁶⁾	27,500	440,531	468,031
Jean Mixer ⁽⁷⁾	11,875	519,304	531,179
Anthony G. Quinn, M.D. Ph.D. ⁽⁸⁾	48,750	—	48,750
Geoffrey von Maltzahn, Ph.D. ⁽⁹⁾	35,000	—	35,000

- (1) Amounts represent cash compensation for services rendered by each member of the board of directors.
- (2) Amounts shown reflect the grant date fair value of stock option awards granted during 2019. The grant date fair value was computed in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718, or ASC Topic 718, *Compensation — Stock Compensation*, disregarding the effect of estimated forfeitures related to service-based vesting. These amounts reflect the accounting cost for the stock options and do not correspond to the actual economic value that may be received by the director upon exercise of the stock options. See Note 8 to the financial statements in our Annual Report on Form 10-K for the year ended December 31, 2019 regarding assumptions we made in determining the fair value of option awards.
- (3) As of December 31, 2019, Mr. Bonney held 234,252 unexercised options.
- (4) As of December 31, 2019, Dr. Bassler held 12,500 unexercised options.
- (5) As of December 31, 2019, Mr. Burnett held 15,625 unexercised options.
- (6) As of December 31, 2019, Mr. Melas-Kyriazi held no unexercised options.
- (7) As of December 31, 2019, Ms. Mixer held no unexercised options.
- (8) As of December 31, 2019, Dr. Quinn held 28,125 unexercised options.
- (9) As of December 31, 2019, Dr. von Maltzahn held no unexercised options.

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Under our director compensation program, we pay our non-employee directors a cash retainer for service on the board of directors and for service on each committee on which the director is a member. The chairman of each committee receives a higher retainer for such service. These fees are payable in arrears in four equal quarterly installments on the last day of each quarter, provided that the amount of such payment is prorated for any portion of such quarter that the director is not serving on our board of directors. The fees paid to non-employee directors for service on the board of directors and for service on each committee of the board of directors on which the director is a member are as follows:

	Member Annual Fee	Chairperson Additional Annual Fee
Board of Directors	\$35,000	\$ 30,000
Audit Committee	7,500	7,500
Compensation Committee	5,000	5,000
Nominating and Corporate Governance Committee	4,000	3,500

We also reimburse our non-employee directors for reasonable travel and out-of-pocket expenses incurred by our non-employee directors in connection with attending our meetings of the board of directors and committees thereof.

In addition, subject to the discretion of our board of directors, each non-employee director elected or appointed to our board of directors following the completion of our initial public offering and during 2019 received an option to purchase a number of shares, with a value equivalent to \$440,000, with value determined in accordance with the reasonable assumptions and methodologies for calculating the fair value of options under ASC 718, on the date of such director's election or appointment to the board of directors, which will vest annually over three years, subject to continued service through such vesting dates.

On the date of each annual meeting of stockholders of our company, each non-employee director will also receive an option to purchase a number of shares that will be determined based on external benchmarking and with input from a compensation consultant, which will vest in full of the earlier to occur of the first anniversary of the date of grant or the next annual meeting, subject to continued service as a director through such vesting date.

This program is intended to provide a total compensation package that enables us to attract and retain qualified and experienced individuals to serve as directors and to align our directors' interests with those of our stockholders.

Executive Compensation

Our named executive officers for the year ended December 31, 2019 include our principal executive officer, our chief medical officer and head of research & development, our general counsel and corporate secretary and our former chief operating officer and chief financial officer:

- Alison Lawton, our President and Chief Executive Officer;
- Katharine Knobil, M.D., our Chief Medical Officer and Head of Research & Development.
- Jerald Korn, our General Counsel and Corporate Secretary; and.
- Joshua Brumm, our former Chief Operating Officer and Chief Financial Officer

Summary Compensation Table

The following table presents the compensation awarded to, earned by or paid to each of our named executive officers for the years indicated, as well as for our former Chief Operating Officer and Chief Financial

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Officer who would have been one of our most highly compensated executive officers but for the fact that such individual was not serving as an executive officer of our company as of December 31, 2019. On February 19, 2019, we effected a reverse stock split of shares of our common stock at a ratio of one-for-two, pursuant to an amendment to our amended and restated certificate of incorporation approved by our board of directors and stockholders. All issued and outstanding common shares and per share amounts have been retroactively adjusted to reflect this reverse stock split for all periods presented.

<u>Name and Principal Position</u>	<u>Year</u>	<u>Salary (\$)</u>	<u>Cash Bonus (\$)</u>	<u>Option Awards (\$)(1)</u>	<u>Non-Equity Incentive Plan Compensation (\$)</u>	<u>All Other Compensation (\$)</u>	<u>Total (\$)</u>
Alison Lawton	2019	500,000	—	2,101,475	276,563(2)	11,196(3)	2,889,234
<i>President and Chief Executive Officer (principal executive officer)</i>	2018	437,500	—	5,947,117(4)	250,000	9,512(5)	6,644,129
Katharine Knobil, M.D.	2019	450,000	—	583,729	170,252(2)	47,783(6)	1,251,764
<i>Chief Medical Officer and Head of Research & Development</i>	2018	37,500(7)	—	3,900,060	—	200,389(8)	4,137,949
Jerald Korn (7)	2019	170,026(9)	50,000	1,210,638	70,526(2)	4,234(10)	1,505,424
<i>General Counsel and Corporate Secretary</i>							
Joshua Brumm	2019	349,916	—	747,200	—	764(11)	1,097,880
<i>Chief Operating Officer and Chief Financial Officer (former principal financial officer)(12)</i>	2018	296,891(13)	—	2,107,576(14)	126,138	320,586(15)	2,851,191

- (1) The amounts reported in the “Option Awards” column reflects the aggregate grant date fair value of share-based compensation awarded during the indicated year computed in accordance with the provisions of Financial Accounting Standards Board Accounting Standards Codification (ASC) Topic 718. The assumptions used in calculating the grant-date fair value are set forth in Note 8 to our audited consolidated financial statements appearing elsewhere in this Annual Report.
- (2) The amounts reported represent cash incentive compensation based upon the Board’s assessment of the achievement of company and individual performance objectives for the year indicated. Cash incentive compensation for the year ended December 31, 2019, made in February 2020. A portion of the bonuses (\$276,563, \$75,668, and \$31,345 for each of Ms. Lawton, Dr. Knobil, and Mr. Korn, respectively) were paid in the form of a restricted stock unit granted on February 28, 2020 vesting in full on February 28, 2022.
- (3) The amount reported represents \$8,000 for matching contributions made in February 2020 by the Company under its 401(k) plan, \$320 in long-term disability insurance premiums, \$2,322 in group term life insurance premiums in excess of statutory limits, and \$554 Massachusetts Paid Family and Medical Leave Act.
- (4) A portion of the amount reported represents a one-time non-cash compensation amount based on the September 2018 modification of certain performance-based stock option awards whereby the shares underlying this option will now be subject to time-based vesting. The amount related to the modification is equal to the modification date fair value of \$1,628,349.
- (5) The amount reported represents \$8,000 for matching contributions made in February 2019 by the Company under its 401(k) plan, \$480 in long-term disability insurance premiums and \$1,032 in group term life insurance premiums in excess of statutory limits.
- (6) The amount reported represents \$8,000 for matching contributions made in February 2020 by the Company under its 401(k) plan, \$320 in long-term disability insurance premiums, \$2,322 in group term life insurance premiums in excess of statutory limits, and \$499 Massachusetts Paid Family and Medical Leave Act, \$6,915 in company paid relocation services, and \$29,567 in commuting expense reimbursements.
- (7) Dr. Knobil commenced employment with us in December 2018. Her annual base salary for 2018 was \$450,000.

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- (8) The amount reported represents \$40 in long-term disability insurance premiums and \$46 in group term life insurance premiums in excess of statutory limits, \$200,000 in a bonus paid to Dr. Knobil due upon the commencement of her employment with us, and \$303 in commuting expense reimbursements.
- (9) Mr. Korn commenced employment with us in July 2019. His annual base salary for 2019 was \$380,000.
- (10) The amount reported represents \$3,345 for matching contributions made in February 2020 by the Company under its 401(k) plan, \$220 in long-term disability insurance premiums, \$247 in group term life insurance premiums in excess of statutory limits, and \$419 Massachusetts Paid Family and Medical Leave Act.
- (11) The amount reported represents \$220 in long-term disability insurance premiums, \$427 in group term life insurance premiums in excess of statutory limits, and \$117 Massachusetts Paid Family and Medical Leave Act.
- (12) Mr. Brumm ceased to be an officer of the Company upon his resignation in September 2019. Mr. Brumm continued to serve as a consultant until December 31, 2019 pursuant to a consulting agreement he entered into with us upon his resignation. Pursuant to such agreement Mr. Brumm's outstanding equity awards continued to vest, however he received no additional compensation.
- (13) Mr. Brumm commenced employment with us in April 2018. His annual base salary for 2018 was \$435,000.
- (14) A portion of the amount reported represents a one-time non-cash compensation amount based on the September 2018 modification of certain performance-based stock option awards whereby the shares underlying this option will now be subject to time-based vesting. The amount related to the modification is equal to the modification date fair value of \$1,006,886.
- (15) The amount reported represents \$8,000 for matching contributions made in February 2019 by the Company under its 401(k) plan, \$150,000 in a bonus paid to Mr. Brumm upon the commencement of his employment with us, \$150,000 in company paid relocation expenses, \$12,900 in commuting expense reimbursements, \$331 in long-term disability insurance premiums and \$165 in group term life insurance premiums in excess of statutory limits.

Narrative to Summary Compensation Table

Our board of directors and compensation committee review compensation annually for our executives. In setting executive base salaries and bonuses and granting equity incentive awards, we consider compensation for comparable positions in the market, the historical compensation levels of our executives, individual performance as compared to our expectations and objectives, our desire to motivate our employees to achieve short- and long-term results that are in the best interests of our stockholders, and a long-term commitment to our company. We target a general competitive position, based on independent third-party benchmark analytics to inform the mix of compensation of base salary, bonus or long-term incentives.

Our board of directors has historically determined our executives' compensation. Our compensation committee typically reviews and discusses management's proposed compensation with the chief executive officer for all executives other than the chief executive officer. Based on those discussions and its discretion, taking into account the factors noted above, the compensation committee then recommends the compensation for each executive officer. Our board of directors discusses the compensation committee's recommendations and ultimately approves the compensation of our executive officers without members of management present. In 2019, the compensation committee retained the services of Pearl Meyers as its external compensation consultant and the board of directors and the compensation committee considered Pearl Meyer's input on certain compensation matters as they deemed appropriate. Pearl Meyers served at the discretion of the compensation committee and did not provide any other services to the Company during fiscal year 2019 other than those for which they were engaged by the compensation committee

Our executive compensation program has reflected our growth and development-oriented corporate culture. Compensation of our named executive officers has primarily consisted of a combination of base salary, bonuses and long-term incentive compensation. Our named executive officers, like all of our full-time employees, are eligible to participate in our health and welfare benefit plans. We currently evaluate our compensation values and philosophy and compensation plans and arrangements as circumstances require and

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review executive compensation annually with input from a compensation consultant. As part of this review process, our board of directors and the compensation committee apply our values and philosophy, while considering the compensation levels needed to ensure our executive compensation program remains competitive. We also review whether we are meeting our retention objectives and the potential cost of replacing key employees.

Annual base salary

Each named executive officer's base salary is a fixed component of annual compensation for performing specific duties and functions that has been established by our board of directors taking into account each individual's role, responsibilities, skills, and experience. Base salaries for our named executive officers are reviewed annually by our compensation committee, typically in connection with our annual performance review process, and adjusted from time to time, based on the recommendation of the compensation committee, to realign salaries with market levels after taking into account individual responsibilities, performance and experience.

For the year ended December 31, 2019, the annual base salaries for each of Ms. Lawton, Dr. Knobil and Mr. Korn were \$500,000, \$450,000 and \$380,000, respectively. Effective as of January 1, 2020, the annual base salaries for each of Ms. Lawton, Dr. Knobil and Mr. Korn were increased to \$515,000, \$463,500 and \$385,903, respectively.

Cash bonus

Our annual bonus program is intended to reward our named executive officers for meeting objective or subjective performance goals for a fiscal year. With respect to performance in fiscal year 2019, the target bonus opportunity as a percentage of base salary for each of Ms. Lawton, Dr. Knobil and Mr. Korn was 50%, 40% and 40%, respectively.

Based on the Company's achievement of certain performance goals and metrics related to our corporate objectives, the compensation committee (and in the case of our Chief Executive Officer the board of directors approved compensation committee recommendation) determined that the bonuses for each named executive officer and paid in the amounts as set forth above in the Summary Compensation Table.

Equity Compensation

Although we do not have a formal policy with respect to the grant of equity incentive awards to our executive officers, or any formal equity ownership guidelines applicable to them, we believe that equity grants provide our executive officers with a strong link to our long-term performance, create an ownership culture and help to align the interests of our executive officers and our stockholders. In addition, we believe that equity grants with a time-based vesting feature promote executive retention because this feature incentivizes our executive officers to remain in our employment during the vesting period. Accordingly, our board of directors periodically reviews the equity incentive compensation of our executives, including our named executive officers, and from time to time may grant equity incentive awards to them in the form of stock options.

We typically grant stock option awards at the start of employment to each executive officer and our other employees as well as on a twice annual basis for retention purposes. We set the option exercise price equal to the fair market value of our common stock on the date of grant.

During the fiscal year ended December 31, 2019, we granted stock options to each of our named executive officers, as shown in more detail in the "Outstanding Equity Awards at Fiscal Year End" table below.

2019 Stock Option and Incentive Plan

Our 2019 Stock Option and Incentive Plan, or 2019 Plan, was adopted by our board of directors on January 23, 2019, and approved by our stockholders on February 19, 2019. The 2019 Plan replaced our 2015

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Stock Incentive Plan, or 2015 Plan, as our board of directors determined not to make additional awards under that plan following the consummation of our initial public offering. The 2019 Plan allows the board of directors' compensation committee to make equity-based incentive awards to our officers, employees, directors and other key persons (including consultants).

We have initially reserved 2,168,976 shares of our common stock for the issuance of awards under the 2019 Plan, or the Initial Limit. The 2019 Plan provides that the number of shares reserved and available for issuance under the plan will automatically increase each January 1, beginning on January 1, 2020, by 4% of the outstanding number of shares of our common stock on the immediately preceding December 31 or such lesser number of shares as determined by our compensation committee, or the Annual Increase. These limits are subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization.

The shares of common stock underlying any awards that are forfeited, cancelled, held back upon exercise or settlement of an award to satisfy the exercise price or tax withholding, reacquired by us prior to vesting, satisfied without the issuance of stock, expire or are otherwise terminated (other than by exercise) under the 2019 Plan and 2015 Plan will be added back to the shares of common stock available for issuance under the 2019 Plan.

The maximum aggregate number of shares that may be issued in the form of incentive stock options shall not exceed the Initial Limit cumulatively increased on January 1, 2020 and on each January 1 thereafter by the lesser of the Annual Increase for such year plus shares added back as provided for above with respect to the 2015 Plan or 4,337,952 shares of common stock.

2015 Stock Incentive Plan

Our 2015 Plan, was approved and adopted by our board of directors on July 14, 2015, and approved by our stockholders on July 14, 2015. Under the 2015 Plan we initially reserved for issuance an aggregate of 1,000,000 shares of our common stock, and most recently increased the shares reserved and available for issuance to 8,395,974 shares of our common stock on December 4, 2018. The number of shares of common stock reserved for issuance under the 2015 Plan is subject to adjustment in the event of a stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off, or other similar change in our capitalization.

The shares of common stock underlying awards that are forfeited, cancelled, terminated, reacquired prior to vesting, satisfied without the issuance of shares of common stock, or withheld to cover the exercise price or tax withholding are added back to the shares of common stock available for issuance under the 2019 Plan.

The shares of common stock underlying awards that are forfeited, cancelled, terminated, reacquired prior to vesting, satisfied without the issuance of shares of common stock, or withheld to cover the exercise price or tax withholding are added back to the shares of common stock available for issuance under the 2019 Plan.

2019 Employee Stock Purchase Plan

On January 23, 2019, our board of directors adopted the 2019 Employee Stock Purchase Plan, or 2019 ESPP, and on February 19, 2019, our stockholders approved the 2019 ESPP, but the 2019 ESPP has not yet been implemented. The 2019 ESPP is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Code. The 2019 ESPP initially reserves and authorizes the issuance of up to a total of 180,748 shares of common stock to participating employees. The 2019 ESPP provides that the number of shares reserved and available for issuance will automatically increase each January 1, beginning on January 1, 2020, by the least of (i) 542,244 shares of Common Stock, (ii) 1% of the outstanding number of shares of our common stock on the immediately preceding December 31 or (iii) such lesser number of shares as determined by the 2019 ESPP administrator. The number of shares reserved under the 2019 ESPP is subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization.

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All employees whose customary employment is for more than 20 hours per week are eligible to participate in the 2019 ESPP. However, any participating employee who would own 5% or more of the total combined voting power or value of all classes of stock after an option were granted under the 2019 ESPP would not be eligible to purchase shares under the 2019 ESPP.

We will make one or more offerings each year to our employees to purchase shares under the 2019 ESPP. Offerings will usually begin on each May 1 and November 1 and will continue for six-month periods, referred to as offering periods. Each eligible employee may elect to participate in any offering by submitting an enrollment form at least 15 business days before the relevant offering date.

Each employee who is a participant in the 2019 ESPP may purchase shares by authorizing payroll deductions of up to a specified percentage of his or her base compensation during an offering period. Unless the participating employee has previously withdrawn from the offering, his or her accumulated payroll deductions will be used to purchase shares on the last business day of the offering period at a price equal to 85% of the fair market value of the shares on the first business day or the last business day of the offering period, whichever is lower. Under applicable tax rules, an employee may purchase no more than \$25,000 worth of shares of common stock, valued at the start of the purchase period, under the 2019 ESPP in any calendar year.

The accumulated payroll deductions of any employee who is not a participant on the last day of an offering period will be refunded. An employee's rights under the 2019 ESPP terminate upon voluntary withdrawal from the plan or when the employee ceases employment with us for any reason.

The 2019 ESPP may be terminated or amended by our board of directors at any time. An amendment that increases the number of shares of common stock authorized under the 2019 ESPP and certain other amendments require the approval of our stockholders.

Senior Executive Cash Incentive Bonus Plan

In October 2018, our board of directors adopted the Senior Executive Cash Incentive Bonus Plan, or the Bonus Plan, but the Bonus Plan has not yet been implemented. The Bonus Plan provides for cash bonus payments based upon the attainment of performance targets established by our compensation committee. The payment targets are related to financial and operational measures or objectives with respect to our company, or Corporate Performance Goals, as well as individual performance objectives.

Our compensation committee may select Corporate Performance Goals from among the following: cash flow (including, but not limited to, operating cash flow and free cash flow); sales or revenue; corporate revenue; earnings before interest, taxes, depreciation and amortization; net income (loss) (either before or after interest, taxes, depreciation and/or amortization); changes in the market price of our common stock; economic value-added; development, clinical, regulatory or commercial milestones; acquisitions or strategic transactions, partnerships or joint ventures; operating income (loss); return on capital, assets, equity, or investment; stockholder returns; return on sales; gross or net profit levels; productivity; expense efficiency; margins; operating efficiency; customer satisfaction; working capital; earnings (loss) per share of our common stock; sales or market shares; number of customers; operating income and/or other strategic, financial or operational objectives, any of which may be measured in absolute terms, as compared to any incremental increase, in terms of growth, as compared to results of a peer group, against the market as a whole, compared to applicable market indices and/or measured on a pre-tax or post-tax basis.

Each executive officer who is selected to participate in the Bonus Plan will have a target bonus opportunity set for each performance period. The bonus formulas will be adopted in each performance period by the compensation committee and communicated to each executive. The Corporate Performance Goals will be measured at the end of each performance period after our financial reports have been published or such other appropriate time as the compensation committee determines. If the Corporate Performance Goals and individual

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performance objectives are met, payments will be made as soon as practicable following the end of each performance period. The Bonus Plan also permits the compensation committee to approve additional bonuses to executive officers in its sole discretion.

401(k) Savings Plan.

Effective as of January 1, 2017, we adopted a tax-qualified retirement plan that provides eligible employees with an opportunity to save for retirement on a tax-advantaged basis. All participants' interests in their contributions are 100% vested when contributed. During the first half of 2018, a matching contribution of 50% of employee contributions up to 6%, with a maximum of \$8,000 per year was approved. Matching contributions vest 25% each year, 100% vested after 4 years of service. At the end of the year, contributions are allocated to each participant's individual account and are then invested in selected investment alternatives according to the participants' directions. The retirement plan is intended to qualify under Section 401(a) of the Code.

Health and Welfare Benefits.

All of our full-time employees, including our named executive officers, are eligible to participate in our health and welfare plans, including medical and dental benefits, short-term and long-term disability insurance, and life insurance. We believe these perquisites are necessary and appropriate to provide a competitive compensation package to our named executive officers.

Outstanding Equity Awards at 2019 Fiscal Year End Table

The following table presents information regarding all outstanding stock options and stock awards held by each of our named executive officers on December 31, 2019.

<u>Name</u>	<u>Option Awards</u>				<u>Stock Awards</u>	
	<u>Number of Securities Underlying Unexercised Options (#) Exercisable</u>	<u>Number of Securities Underlying Unexercised Options (#) Unexercisable</u>	<u>Option Exercise Price (\$)</u>	<u>Option Expiration Date</u>	<u>Number of Shares or Units of Stock that have not Vested (#)(1)</u>	<u>Market Value of Shares or Units of Stock that have not Vested (\$)</u>
Alison Lawton <i>President and Chief Executive Officer (principal executive officer)</i>	—	162,500 ⁽²⁾	2.22	12/5/2027 ⁽²⁾	1,250	6,275
	255,609 ⁽³⁾	562,339 ⁽³⁾	10.28	8/15/2028	—	—
	—	150,000 ⁽⁴⁾	15.00	2/26/2029	—	—
	—	150,000 ⁽⁵⁾	6.56	11/14/2029	— (4)	—
Katharine Knobil, M.D. <i>Chief Medical Officer and Head of Research & Development</i>	115,250 ⁽⁶⁾	345,750 ⁽⁶⁾	17.40	12/3/2028	—	—
	—	125,000 ⁽⁷⁾	6.56	11/14/2029	—	—
	—	—	—	—	50,000 ⁽⁸⁾	251,000
Jerald Korn ⁽⁷⁾ <i>General Counsel and Corporate Secretary</i>	—	180,000 ⁽⁹⁾	7.67	7/31/2029	—	—
	—	75,000 ⁽¹⁰⁾	6.56	11/14/2029	—	—
Joshua Brumm <i>Chief Operating Officer and Chief Financial Officer (former principal financial officer)⁽¹²⁾</i>	98,438 ⁽¹¹⁾	—	5.90	12/31/2020	—	—
	38,778 ⁽¹¹⁾	—	10.28	12/31/2020	—	—

Unless otherwise specified, all option awards vest over four years, with 25% vesting on the first anniversary of the vesting commencement date, and the remainder vesting in 12 equal quarterly installments thereafter, subject to continued employment with us.

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- (1) The amount represents the number of shares of restricted stock or unvested restricted stock units multiplied by the market value of a share of our common stock based on the closing price on December 31, 2019, which was \$5.02. Unless otherwise specified, all stock awards listed in the table are restricted stock awards.
- (2) Represents total original grant of 327,500 shares underlying a stock option. In November 2017, 165,000 shares were acquired upon the exercise of the early exercise feature. The aggregate shares from this arrangement vested 25% on November 16, 2018, then in 12 equal quarterly installments thereafter with all shares under the early-exercise stock award vesting in their entirety before any vesting will occur under the option award.
- (3) The shares underlying this option vest 25% on August 16, 2019, then in 12 equal quarterly installments thereafter.
- (4) The shares underlying this option vest 25% on February 26, 2020, then in 12 equal quarterly installments thereafter.
- (5) The shares underlying this option vest 25% on November 15, 2020, then in 12 equal quarterly installments thereafter.
- (6) The shares underlying this option vest 25% on December 3, 2019, then in 12 equal quarterly installments thereafter.
- (7) The shares underlying this option vest 25% on November 15, 2020, then in 12 equal quarterly installments thereafter.
- (8) Represents shares of restricted stock granted on November 15, 2019, with 50% vesting on November 15, 2020, and the remainder vesting on November 15, 2021.
- (9) The shares underlying this option vest 25% on July 22, 2020, then in 12 equal quarterly installments thereafter.
- (10) The shares underlying this option vest 25% on November 15, 2020, then in 12 equal quarterly installments thereafter.
- (11) The shares underlying this option are fully vested and, pursuant to Mr. Brumm's consulting agreement, are available for exercise until December 31, 2020.

Employment Arrangements with Our Named Executive Officers

We have entered into employment agreements with each of our named executive officers that provide for specified payments and benefits in connection with a termination of employment in certain circumstances. Our goal in providing these severance and change in control payments and benefits is to offer sufficient cash continuity protection such that the named executive officers who are our employees will focus their full time and attention on the requirements of the business rather than the potential implications for their respective positions. We prefer to have certainty regarding the potential severance amounts payable to the named executive officers, rather than negotiating severance at the time that a named executive officer's employment terminates. We have also determined that accelerated vesting provisions with respect to outstanding equity awards in connection with a qualifying termination of employment in certain circumstances are appropriate because they encourage our named executive officers to stay focused on the business in those circumstances, rather than focusing on the potential implications for them personally. The employment agreements with our named executive officers require the named executive officers to execute a separation agreement containing a general release of claims in favor of us to receive any severance payments and benefits.

Alison Lawton

On January 24, 2019, we entered into an employment agreement with Ms. Lawton, or the Lawton Employment Agreement. Pursuant to the terms of the Lawton Employment Agreement, Ms. Lawton serves as our Chief Executive Officer and President on an at-will basis. Ms. Lawton's Employment Agreement provides her with a base salary, which is subject to periodic review and adjustment by our board of directors, and eligibility to receive cash incentive compensation as determined by our board of directors or compensation committee from time to time. Ms. Lawton's current base salary is \$515,000, and Ms. Lawton is eligible for an annual performance bonus currently targeted at 50% of her base salary. Ms. Lawton is also eligible to participate in the employee benefit plans generally available to our employees, subject to the terms of those plans.

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The Lawton Employment Agreement further provides that if Ms. Lawton's employment is terminated by us without Cause (as defined in the Lawton Employment Agreement) or Ms. Lawton resigns for Good Reason (as defined in the Lawton Employment Agreement), then, subject to the timely execution and effectiveness of a separation agreement, including a general release of claims in our favor, Ms. Lawton will be entitled to receive: (i) an amount equal to 12 months of base salary plus an amount equal to the incentive compensation paid to Ms. Lawton in the year prior to the year of termination, payable in substantially equal monthly installments over 12 months following termination, (ii) if Ms. Lawton was enrolled in our health care program immediately prior to the date of termination and properly elects to receive COBRA benefits, a monthly cash payment for 12 months of COBRA premiums at our normal rate of contribution for employees for coverage at the level in effect immediately prior to the date of termination and (iii) extension of the period during which Ms. Lawton can exercise any of her vested options to purchase our stock until the anniversary of Ms. Lawton's date of termination.

In lieu of the severance payments and benefits set forth in the prior paragraph, in the event that Ms. Lawton is terminated by us without Cause or she resigns for Good Reason, in each case within 15 months following a Change in Control (as defined in the Lawton Employment Agreement), subject to the timely execution and effectiveness of a separation agreement, including a general release of claims in our favor, she will be entitled to receive: (i) a lump sum cash amount equal to 1.5 times the sum of (A) her current base salary (or her base salary in effect prior to the Change in Control, if higher) plus (B) her target annual cash incentive compensation for the year of termination, (ii) if Ms. Lawton is enrolled in our health care program immediately prior to the date of termination and properly elects to receive COBRA benefits, a monthly cash payment for 18 months of COBRA premiums at our normal rate of contribution for employees for coverage at the level in effect immediately prior to the date of termination, and (iii) notwithstanding anything to the contrary in any applicable award agreement, accelerated vesting of 100% of all Equity Awards (as defined in the Lawton Agreement) held by Ms. Lawton.

Other Employment Agreements with Executive Officers

In addition to the Lawton Agreement, we have also entered into employment agreements with each of our other executive officers, Dr. Katherine Knobil and Messrs. William Duke, Jr. and Jerald Korn. We refer to these agreements collectively as the Executive Employment Agreements.

The current base salaries and discretionary cash incentive bonus amounts for the executives under the Executive Employment Agreements are as follows:

<u>Executive</u>	<u>Title</u>	<u>Base Salary</u>	<u>Target Incentive Discretionary Bonus (%)</u>
Katharine Knobil, M.D.	Chief Medical Officer and Head of Research and Development	\$463,500	40%
William Duke, Jr.	Chief Financial Officer	420,000	40%
Jerald Korn	General Counsel	385,903	40%

Under the Executive Employment Agreements, each of the executives will continue to serve on an at-will basis. The above base salaries are subject to periodic review and adjustment by our board of directors, and eligibility to receive cash incentive compensation as determined by our board of directors or compensation committee from time to time. The executives are also eligible to participate in the employee benefit plans generally available to our employees, subject to the terms of those plans.

The Executive Employment Agreements further provides that if the executive's employment is terminated by us without Cause (as defined in the relevant Executive Employment Agreement) or the executive resigns for Good Reason (as defined in the relevant Executive Employment Agreement), then, subject to the timely execution and effectiveness of a separation agreement, including a general release of claims in our favor,

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the executive will be entitled to receive: (i) an amount equal to 12 months of base salary plus an amount equal to the incentive compensation paid to the executive in the year prior to the year of termination, payable in substantially equal monthly installments over 12 months following termination, (ii) if the executive was enrolled in our health care program immediately prior to the date of termination and properly elects to receive COBRA benefits, a monthly cash payment for 12 months of COBRA premiums at our normal rate of contribution for employees for coverage at the level in effect immediately prior to the date of termination and (iii) extension of the period during which the executive can exercise any of his or her vested options to purchase our stock until the anniversary of the executive's date of termination.

In lieu of the severance payments and benefits set forth in the prior paragraph, in the event that the executive is terminated by us without Cause or he or she resigns for Good Reason, in each case within 15 months following a Change in Control (as defined in the relevant Executive Employment Agreement), subject to the timely execution and effectiveness of a separation agreement, including a general release of claims in our favor, the executive will be entitled to receive: (i) a lump sum cash amount equal to 1.5 times the sum of (A) his or her current base salary (or his or her base salary in effect prior to the Change in Control, if higher) plus (B) his or her target annual cash incentive compensation for the year of termination, (ii) if the executive is enrolled in our health care program immediately prior to the date of termination and properly elects to receive COBRA benefits, a monthly cash payment for 18 months of COBRA premiums at our normal rate of contribution for employees for coverage at the level in effect immediately prior to the date of termination, and (iii) notwithstanding anything to the contrary in any applicable award agreement, accelerated vesting of 100% of all Equity Awards (as defined in the relevant Executive Employment Agreement) held by the executive.

Each of the Lawton Employment Agreement and the Executive Employment Agreements also contains a Section 280G better-off cutback provision, which provides that, in the event that the payments or benefits provided to the named executive officer pursuant to his or her employment agreement or otherwise constitute parachute payments with the meaning of Section 280G of the Code, the payments or benefits to such executive will either be delivered in full or reduced to the extent necessary to avoid an excise tax under Section 4999 of the Code, whichever would result in the executive receiving the largest amount of payments or benefits on an after-tax basis. None of the employment agreements with our named executive officers requires us to provide any tax gross-up payments.

Other agreements

We have also entered into employee confidentiality, inventions, non-solicitation and non-competition agreements with each of our named executive officers. Under such agreements, each named executive officer has agreed (1) not to compete with us during his or her employment and for a period of one year after the termination of such employment, (2) not to solicit our employees during his or her employment and for a period of one year after the termination of such employment, (3) to protect our confidential and proprietary information and (4) to assign to us related intellectual property developed during the course of his or her employment.

Compensation Risk Assessment

We believe that although a portion of the compensation provided to our executive officers and other employees is performance-based, our executive compensation program does not encourage excessive or unnecessary risk taking.

This is primarily due to the fact that our compensation programs are designed to encourage our executive officers and other employees to remain focused on both short-term and long-term strategic goals. As a result, we do not believe that our compensation programs are reasonably likely to have a material adverse effect on us.

[Table of Contents](#)**Equity Compensation Plan Information**

The following table provides information as of December 31, 2019 with respect to the shares of our common stock that may be issued under our existing equity compensation plans.

<u>Plan Category</u>	<u>Equity Compensation Plan Information</u>		
	<u>Number of securities to be issued upon exercise of outstanding options, warrants and rights</u>	<u>Weighted average exercise price of outstanding options, warrants and rights</u>	<u>Number of securities remaining available for future issuance under equity compensation plans (excluding securities in first column)</u>
Equity compensation plans approved by security holders	7,285,581	\$ 8.15	1,305,250
Equity compensation plans not approved by security holders	—	—	—
Total	7,285,581	\$ 8.15	1,305,250

Includes the following plans: our 2015 Stock Incentive Plan, our 2019 Stock Option and Incentive Plan and our 2019 Employee Stock Purchase Plan.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS**Certain Relationships and Transactions**

Other than the compensation agreements and other arrangements described under “Executive Compensation” and “Director Compensation” in this proxy statement and the transactions described below, since January 1, 2018, there has not been and there is not currently proposed, any transaction or series of similar transactions to which we were, or will be, a party in which the amount involved exceeded, or will exceed, \$120,000 (or, if less, 1% of the average of our total assets amounts at December 31, 2018 and 2019) and in which any director, executive officer, holder of five percent or more of any class of our capital stock or any member of the immediate family of, or entities affiliated with, any of the foregoing persons, had, or will have, a direct or indirect material interest.

Professional Services

We receive professional services from our principal investor, Flagship Pioneering, from time to time as needed. We reported general and administrative expense totaling \$0 and \$0.2 million related to these services for the twelve months ended December 31, 2019 and December 31, 2018, respectively.

Private Placement of Securities

<u>Stockholder</u>	<u>Shares of Series C Preferred Stock</u>	<u>Total Purchase Price</u>
Flagship Pioneering Funds (1)	2,502,502	\$ 24,999,995

- (1) Flagship of Pioneering Funds consists of Flagship Ventures Fund IV, L.P., Flagship Ventures Fund V, L.P., Nutritional Health Disruptive Innovation Fund, L.P., and Flagship Ventures Opportunities Fund I, L.P.

Series C preferred stock financing

At closings held from February 21, 2018 through June 8, 2018, we sold an aggregate of 10,107,404 shares of Series C Preferred Stock at a purchase price of \$9.99 per share, pursuant to a stock purchase agreement entered into with certain of our investors. The table above summarizes purchases of Series C Preferred Stock by holders of 5% or more of our capital stock.

Participation in our IPO

Certain of our directors, executive officers and our 5% stockholders purchased shares of our common stock in our IPO at the initial public offering price. The following table sets forth the number of shares of our common stock purchased by directors, executive officers and 5% stockholders and their affiliates and the aggregate purchase price paid for such shares.

<u>Name</u>	<u>Shares of Common Stock Purchased(#)</u>	<u>Aggregate Cash Purchase Price(\$)</u>
Flagship Pioneering Funds (1)	933,333	13,999,995
Michael Bonney	71,250	1,072,800
Total	1,004,583	15,072,795

- (1) Flagship Pioneering Funds consists of Flagship Ventures Fund V, L.P., Nutritional Health Disruptive Innovation Fund, L.P., and Flagship Ventures Opportunities Fund I, L.P.

Sublease agreement with VL45, Inc.

In January 2018, we entered into a sublease with VL45, Inc., or VL45, a company affiliated with our majority stockholder, for a portion of laboratory and office space in Cambridge, Massachusetts. The term of the sublease commenced on January 18, 2018 and terminated on October 31, 2018. In September 2018, we entered into a termination agreement with the landlord to terminate the lease for a payment of \$100 effective October 31, 2018.

Amended and Restated Investors' Rights Agreement

We are a party to an amended and restated investors' rights agreement, or the Investors' Rights Agreement, dated as of February 21, 2018, with certain holders of our previously-outstanding preferred stock, including certain of our 5% stockholders and their affiliates and entities affiliated with certain of our officers and directors. The Investors' Rights Agreement provides these holders the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we are otherwise filing.

Limitation of Liability and Indemnification of Officers and Directors

Our certificate of incorporation contains provisions that limit the liability of our directors for monetary damages to the fullest extent permitted by the DGCL. Consequently, our directors are not personally liable to us or our stockholders for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of their duty of loyalty to our company or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the DGCL; or
- any transaction from which they derived an improper personal benefit.

Our bylaws require us to indemnify our directors and officers to the maximum extent not prohibited by the DGCL and allow us to indemnify other employees and agents as set forth in the DGCL. Subject to certain limitations, our bylaws also require us to advance expenses incurred by our directors and officers for the defense of any action for which indemnification is required or permitted.

We have entered, and intend to continue to enter, into separate indemnification agreements with our directors, officers and certain of our key employees, in addition to the indemnification provided for in our certificate of incorporation and bylaws. These agreements, among other things, require us to indemnify our directors, officers and key employees for certain expenses, including attorneys' fees, judgments, penalties, fines and settlement amounts actually incurred by these individuals in any action or proceeding arising out of their service to us or any of our subsidiaries or any other company or enterprise to which these individuals provide services at our request. Subject to certain limitations, our indemnification agreements also require us to advance expenses incurred by our directors, officers and key employees for the defense of any action for which indemnification is required or permitted.

We believe that provisions of our certificate of incorporation, bylaws and indemnification agreements are necessary to attract and retain qualified directors, officers and key employees. We also maintain directors' and officers' liability insurance.

This description of the indemnification provisions of our certificate of incorporation, our bylaws and our indemnification agreements is qualified in its entirety by reference to these documents, each of which is attached as an exhibit to our Annual Report on Form 10-K.

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At present, there is no pending litigation or proceeding involving any of our directors or executive officers as to which indemnification is required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for indemnification.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, executive officers or persons controlling us, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Related Person Transaction Policy

Our board of directors adopted a written related person transactions policy providing that transactions with our directors, officers and holders of five percent or more of our voting securities and their affiliates, each a related person, must be approved by our audit committee. Pursuant to this policy, the audit committee has the primary responsibility for reviewing and approving or disapproving “related person transactions,” which are transactions between us and related persons in which a related person has or will have a direct or indirect material interest. For purposes of this policy, a related person is defined as a director, executive officer, nominee for director, or greater than 5% beneficial owner of our common stock, in each case since the beginning of the most recently completed year, and their immediate family members.

As appropriate for the circumstances, the audit committee will review and consider:

- the related person’s interest in the related person transaction;
- whether the transaction was undertaken in the ordinary course of our business; and
- whether the terms of the transaction are no less favorable to us than terms that could have been reached with an unrelated third party.

PRINCIPAL STOCKHOLDERS¹

The following table sets forth information, to the extent known by us or ascertainable from public filings, with respect to the beneficial ownership of our common stock as of April 20, 2020 by:

- each person, or group of affiliated persons, who is known by us to be the beneficial owner of five percent or more of our outstanding common stock
- each of our directors;
- each of our named executive officers; and
- all of our directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Under those rules, beneficial ownership includes any shares as to which the individual or entity has sole or shared voting power or investment power, and includes securities that the individual or entity has the right to acquire, such as through the exercise of stock options, within 60 days of April 20, 2020. Except as noted by footnote, and subject to community property laws where applicable, we believe, based on the information provided to us, that the persons and entities named in the table below have sole voting and investment power with respect to all common stock shown as beneficially owned by them, subject to community property laws, where applicable.

Each individual or entity shown on the table has furnished information with respect to beneficial ownership. Except as otherwise indicated below, the address of each officer, director and five percent stockholder listed below is c/o Kaleido Biosciences, Inc., 65 Hayden Avenue, Lexington, MA 02421.

The percentage of beneficial ownership in the table below is based on a total of 30,490,290 shares of our common stock outstanding as of April 20, 2020.

	COMMON STOCK BENEFICIALLY OWNED	
	SHARES	PERCENTAGE
5% or Greater Shareholders		
Flagship Pioneering Funds (1)	17,360,710	57%
FMR LCC (3)	2,086,907	7%
Directors, Named Executive Officers and Other Executive Officer		
Alison Lawton (4)	609,416	2%
Katharine Knobil, M.D. (5)	172,875	*
William Duke, Jr.	—	—
Jerald Korn	—	—
Michael Bonney (6)	2,048,179	7%
Bonnie Bassler, Ph.D (7)	18,750	*
Grady Burnett (8)	21,875	*
Theo Melas-Kyriazi	—	—
Jean Mixer	—	—
Anthony G. Quinn, M.D., Ph. D (9)	62,853	*
Geoffrey von Maltzahn, Ph. D (10)	342,466	1%
All executive officers and directors as a group (11 persons)	3,276,414	10%

* Represents beneficial ownership of less than one percent.

¹ NTD: Company to update table as of record date.

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- (1) Consists of (a) 2,244,305 shares of common stock held by Flagship Ventures Opportunities Fund I LP, (b) 6,560,523 shares of common stock held by Nutritional Health Disruptive Innovation Fund LP, (c) 2,500,000 shares of common stock held by Flagship VentureLabs V, LLC, (d) 216,451 shares of common stock held by Flagship Ventures Fund 2007 LP, (e) 947,111 shares of common stock held by Flagship Ventures Fund IV, LP, (f) 2,560,096 shares of common stock held by Flagship Ventures Fund V, LP, (g) 639,360 shares of common stock held by Nutritional Health Side Fund, LP, (h) 42,865 shares of common stock held by VenturesLabs IV, LLC, and (i) 1,649,999 shares of common stock held by Cadena LLC.
- (2) The information in the table above concerning the number of shares beneficially owned by FMR LLC was obtained from a Schedule 13G filed with the SEC by FMR LLC on February 7, 2020 reporting beneficial ownership at February 6, 2020.
- (3) Consists of (i) 165,000 shares of common stock and (ii) 444,416 shares of common stock underlying options exercisable within 60 days of April 20, 2020.
- (4) Consists of 172,875 shares of common stock underlying options exercisable within 60 days of April 20, 2020.
- (5) Consists of (i) 1,354,676 shares of common stock held directly by Mr. Bonney, (ii) 468,503 shares of common stock underlying options exercisable within 60 days of April 20, 2020 and (iii) 225,000 shares held in the Michael and Alison Bonney 2016 Irrevocable Trust, which has an independent trustee. Michael Bonney is a holder of 5% or more of our capital stock.
- (6) Consists of 18,750 shares of common stock underlying options exercisable within 60 days of April 20, 2020.
- (7) Consists of 21,875 shares of common stock underlying options exercisable within 60 days of April 20, 2020.
- (8) Consists of 31,603 shares of common stock held directly by Dr. Quinn and (ii) 31,250 shares of common stock underlying options exercisable within 60 days of April 20, 2020.
- (9) Consists of 342,466 shares of common stock held directly by Dr. von Maltzahn.

REPORT OF THE AUDIT COMMITTEE

The audit committee is appointed by the board of directors to assist the board of directors in fulfilling its oversight responsibilities with respect to (1) the integrity of Kaleido's financial statements and financial reporting process and systems of internal controls regarding finance, accounting, and compliance with legal and regulatory requirements, (2) the qualifications, independence, and performance of Kaleido's independent registered public accounting firm, (3) the performance of Kaleido's internal audit function, if any, and (4) other matters as set forth in the charter of the audit committee approved by the board of directors.

Management is responsible for the preparation of Kaleido's financial statements and the financial reporting process, including its system of internal control over financial reporting and its disclosure controls and procedures. The independent registered public accounting firm is responsible for performing an audit of Kaleido's financial statements in accordance with the standards of the Public Company Accounting Oversight Board (PCAOB) and issuing a report thereon. The audit committee's responsibility is to monitor and oversee these processes.

In connection with these responsibilities, the audit committee reviewed and discussed with management and the independent registered public accounting firm the audited consolidated financial statements of Kaleido for the fiscal year ended December 31, 2019. The audit committee also discussed with the independent registered public accounting firm the matters required to be discussed by the PCAOB's Auditing Standard No. 1301, *Communication with Audit Committees*. In addition, the audit committee received written communications from the independent registered public accounting firm confirming their independence as required by the applicable requirements of the PCAOB and has discussed with the independent registered public accounting firm their independence.

Based on the reviews and discussions referred to above, the audit committee recommended to the board of directors that the audited consolidated financial statements of Kaleido be included in Kaleido's Annual Report on Form 10-K for the fiscal year ended December 31, 2019, that was filed with the SEC. The information contained in this report shall not be deemed to be (1) "soliciting material," (2) "filed" with the SEC, (3) subject to Regulations 14A or 14C of the Exchange Act, or (4) subject to the liabilities of Section 18 of the Exchange Act. This report shall not be deemed incorporated by reference into any of our other filings under the Exchange Act or the Securities Act, except to the extent that we specifically incorporate it by reference into such filing.

THE AUDIT COMMITTEE OF THE BOARD OF
DIRECTORS OF KALEIDO BIOSCIENCES, INC.

Theo Melas-Kyriazi, Chairperson

Jean Mixer

Grady Burnett

April 24, 2020

HOUSEHOLDING

Some banks, brokers and other nominee record holders may be participating in the practice of “householding” proxy statements and annual reports. This means that only one copy of our documents, including the annual report to stockholders and proxy statement, may have been sent to multiple stockholders in your household. We will promptly deliver a separate copy of either document to you upon written or oral request to Kaleido Biosciences, Inc., 65 Hayden Avenue, Lexington, MA 02421, Attention: Corporate Secretary, telephone: (617) 674-9000. If you want to receive separate copies of the proxy statement or annual report to stockholders in the future, or if you are receiving multiple copies and would like to receive only one copy per household, you should contact your bank, broker or other nominee record holder, or you may contact us at the above address and phone number.

STOCKHOLDER PROPOSALS

A stockholder who would like to have a proposal considered for inclusion in our 2021 proxy statement must submit the proposal in accordance with the procedures outlined in Rule 14a-8 of the Exchange Act so that it is received by us no later than January 6, 2020. However, if the date of the 2021 Annual Meeting of Stockholders is changed by more than 30 days from the date of the previous year’s meeting, then the deadline is a reasonable time before we begin to print and send our proxy statement for the 2021 Annual Meeting of Stockholders. SEC rules set standards for eligibility and specify the types of stockholder proposals that may be excluded from a proxy statement. Stockholder proposals should be addressed to Kaleido Biosciences, Inc., 65 Hayden Avenue, Lexington, MA 02421, Attention: Corporate Secretary.

If a stockholder wishes to propose a nomination of persons for election to our board of directors or present a proposal at an annual meeting but does not wish to have the proposal considered for inclusion in our proxy statement and proxy card, our bylaws establish an advance notice procedure for such nominations and proposals. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of the board of directors or by a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has delivered timely notice in proper form to our corporate secretary of the stockholder’s intention to bring such business before the meeting.

The required notice must be in writing and received by our corporate secretary at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year’s annual meeting. However, in the event that the date of the annual meeting is advanced by more than 30 days, or delayed by more than 60 days, from the first anniversary of the preceding year’s annual meeting, a stockholder’s notice must be so received no earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of (A) the 90th day prior to such annual meeting and (B) the tenth day following the day on which notice of the date of such annual meeting was mailed or public disclosure of the date of such annual meeting was made, whichever first occurs. For stockholder proposals to be brought before the 2021 Annual Meeting of Stockholders, the required notice must be received by our corporate secretary at our principal executive offices no earlier than February 15, 2021 and no later than March 17, 2021. Stockholder proposals and the required notice should be addressed to Kaleido Biosciences, Inc., 65 Hayden Avenue, Lexington, MA 02421, Attention: Investor Relations / Corporate Secretary.

OTHER MATTERS

Our board of directors does not know of any other matters to be brought before the Annual Meeting. If any other matters not mentioned in this proxy statement are properly brought before the meeting, the individuals named in the enclosed proxy intend to use their discretionary voting authority under the proxy to vote the proxy in accordance with their best judgment on those matters.



ANNUAL MEETING OF KALEIDO BIOSCIENCES, INC.

Date: Wednesday, June 17, 2020
Time: 9:00 A.M. (Eastern Time)
Place: 20 Custom House Street, 7th Floor, Boston, MA 02110

Please make your marks like this: Use dark black pencil or pen only

The Board of Directors Recommends a Vote **FOR** the director nominees listed in Proposal 1 and **FOR** Proposal 2.

1: To elect three Class I directors to our board of directors, to serve until the 2023 annual meeting of stockholders.

Nominee:

- (1) Michael Bonney
- (2) Bonnie L. Bassler
- (3) Geoffrey von Maltzahn

Vote For All Nominees	Withhold Vote From All Nominees	Vote For All Except
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

INSTRUCTIONS: To withhold authority to vote for any nominee, mark the "Exception" box and write the number(s) in the space provided to the right

	For	Against	Abstain
2: To ratify 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"/>

To transact such other business as may properly come before the Annual Meeting or at any adjournments or postponements thereof

To attend the meeting and vote your shares in person, please mark this box.

Authorized Signatures - This section must be completed for your Instructions to be executed.

Please Sign Here	Please Date Above
Please Sign Here	Please Date Above

Please sign exactly as your name(s) appears on your stock certificate. If held in joint tenancy, all persons should sign. Trustees, administrators, etc., should include title and authority. Corporations should provide full name of corporation and title of authorized officer signing the proxy.

↑ Please separate carefully at the perforation and return just this portion in the envelope provided. ↑



**Annual Meeting of Kaleido Biosciences, Inc.
to be held on Wednesday, June 17, 2020
for Holders as of April 20, 2020**

This proxy is being solicited on behalf of the Board of Directors

VOTE BY:


INTERNET

Go To
www.proxypush.com/KLDO

- Cast your vote online 24 hours a day/7 days a week.
- Have your Proxy Card/Voting Instructions Form ready.
- View Meeting Documents.

OR


MAIL

OR

- Mark, sign and date your Proxy Card/Voting Instruction Form.
- Detach your Proxy Card/Voting Instruction Form.
- Return your Proxy Card/Voting Instruction Form in the postage-paid envelope provided.


TELEPHONE

Call
866-390-5421

- Use any touch-tone telephone toll-free 24 hours a day/7 days a week.
- **Have your Proxy Card/Voting Instruction Form ready.**
- Follow the simple recorded instructions.

The undersigned hereby appoints Alison Frances Lawton and Jerald Korn, and each or either of them, as the true and lawful attorneys of the undersigned, with full power of substitution and revocation, and authorizes them, and each of them, to vote all the shares of common stock of Kaleido Biosciences, Inc. which the undersigned is entitled to vote at said meeting and any adjournment thereof upon the matters specified and upon such other matters as may be properly brought before the meeting or any adjournment thereof, conferring authority upon such true and lawful attorneys to vote in their discretion on such other matters as may properly come before the meeting and revoking any proxy heretofore given.

THE SHARES REPRESENTED BY THIS PROXY WILL BE VOTED AS DIRECTED OR, IF NO DIRECTION IS GIVEN, SHARES WILL BE VOTED FOR THE ELECTION OF THE DIRECTORS IN PROPOSAL 1 AND FOR PROPOSAL 2. THE PROXIES WILL VOTE IN THEIR DISCRETION ON ANY OTHER BUSINESS AS MAY PROPERLY COME BEFORE THE MEETING AND ANY ADJOURNMENT THEREOF.

**PROXY TABULATOR FOR
KALEIDO BIOSCIENCES, INC.
c/o MEDIANT COMMUNICATIONS
P.O. BOX 8016
CARY, NC 27512-9903**



↑ Please separate carefully at the perforation and return just this portion in the envelope provided. ↑



**Proxy for Annual Meeting of Stockholders to be held
on Wednesday, June 17**

This proxy is being solicited on behalf of the Board of Directors

Please vote, date and sign this Proxy on the other side and return it in the enclosed envelope.

The Stockholder signing on the reverse side (the “undersigned”), having received the Annual Report and Proxy Statement, hereby appoint(s) Alison Frances Lawton and Jerald Korn and each of them, Proxies of the undersigned (with full power of substitution) to attend the Annual Meeting of Kaleido Biosciences, Inc. (the “Company”) to be held on Wednesday, June 17, 2020, and all adjournments and postponements thereof (the “Meeting”), and to vote all shares of Common Stock of the Company that the undersigned would be entitled to vote, if personally present, in regard to all matters that may properly come before the Meeting.

The undersigned hereby confer(s) upon the Proxies, and each of them, discretionary authority to consider and act upon such business, matters or proposals as may properly come before the Meeting. **The Proxy, when properly executed, will be voted in the manner specified herein. If no specification is made, the Proxies intend to vote FOR all nominees for director in Proposal 1 and FOR Proposal 2.**