

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

SCHEDULE 14A

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

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

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

Bionano Genomics, 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.

Title of each class of securities to which transaction applies:

Aggregate number of securities to which transaction applies:

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- Fee paid previously with preliminary materials.
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Amount Previously Paid:

Form, Schedule or Registration Statement No.:

Filing Party:

Date Filed:

BIONANO GENOMICS, INC.

9540 Towne Centre Drive, Suite 100
San Diego, CA 92121



NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

To Be Held On June 30, 2020

Dear Stockholders:

You are cordially invited to attend the 2020 Annual Meeting of Stockholders (the "Annual Meeting") of Bionano Genomics, Inc., a Delaware corporation (the "Company"), to be held on Thursday, June 30, 2020, at 10:00 a.m. Pacific Time. In light of the COVID-19 pandemic, to support the health and well-being of our stockholders, employees and directors, and taking into account recent federal, state and local guidance, the Annual Meeting will be held in a virtual meeting format only, via live webcast on the Internet, with no physical in-person meeting. You will be able to attend and participate in the Annual Meeting online by visiting www.virtualshareholdermeeting.com/BNGO2020, where you will be able to listen to the meeting live, submit questions and vote. As always, we encourage you to vote your shares prior to the Annual Meeting.

You are being asked to vote on the following matters:

1. To approve a series of alternate amendments to the Company's Amended and Restated Certificate of Incorporation, to effect, at the discretion of the Company's Board of Directors: (i) a reverse split of the Company's common stock, whereby each outstanding 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20 shares of common stock would be combined and converted into one share of common stock; and (ii) for reverse splits in the range of 1-for-10 to 1-for-20, a reduction in the number of authorized shares of common stock from 200,000,000 to 40,000,000, 36,363,636, 33,333,334, 30,769,230, 28,571,428, 26,666,667, 25,000,000, 23,529,412, 22,222,222, 21,052,632 and 20,000,000 shares, respectively. We refer to this proposal as the "Reverse Stock Split Proposal" or "Proposal 1."
2. To approve an amendment to the Company's 2018 Equity Incentive Plan, or the 2018 Plan, to, among other things, increase the number of shares of common stock authorized for issuance under the 2018 Plan by 4,658,803 shares (before any adjustment for any reverse stock split). We refer to this proposal as the "Equity Incentive Plan Proposal" or "Proposal 2."
3. To elect the three nominees for Class II director named in the accompanying proxy statement, each to hold office until the 2023 Annual Meeting of Stockholders or until a successor is duly elected and qualified or until the director's earlier death, resignation or removal. We refer to this proposal as the "Director Election Proposal" or "Proposal 3."
4. To ratify the selection of BDO USA, LLP by the Audit Committee of the Board of Directors to serve as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2020. We refer to this proposal as the "Auditor Ratification Proposal" or "Proposal 4."
5. To conduct any other business properly brought before the meeting.

These items of business are more fully described in the Proxy Statement accompanying this Notice.

The Annual Meeting will be a completely virtual meeting of stockholders. To participate, vote or submit questions during the Annual Meeting via live webcast, please visit www.virtualshareholdermeeting.com/BNGO2020. **You will not be able to attend the Annual Meeting in person.**

The record date for the Annual Meeting is May 15, 2020. Only stockholders of record at the close of business on that date may vote at the meeting or any adjournment thereof.

Important Notice Regarding the Availability of Proxy Materials for the Shareholders' Meeting to Be Held on Thursday, June 30, 2020 at 10:00 a.m., Pacific Time via live webcast at www.virtualshareholdermeeting.com/BNGO2020.

The proxy statement and annual report to shareholders are available at www.proxyvote.com.

By Order of the Board of Directors,

/s/ Heather Adams

Heather Adams

Secretary

San Diego, California

May 19, 2020

You are cordially invited to attend the virtual Annual Meeting. Whether or not you expect to attend the Annual Meeting, PLEASE VOTE YOUR SHARES. As an alternative to voting online at the Annual Meeting, you may vote via the internet, by telephone or, if you receive a paper proxy card by mailing the completed proxy card. Voting instructions are provided in the Notice of Internet Availability of Proxy Materials, or, if you receive a paper proxy card by mail, the instructions are printed on your proxy card.

Even if you have voted by proxy, you may still vote online at the Annual Meeting. Please note, however, that if your shares are held of record by a broker, bank or other agent and you wish to vote at the Annual Meeting, you must follow the instructions from such organization and will need to obtain a proxy issued in your name from that record holder.

**BIONANO GENOMICS, INC.
9540 Towne Centre Drive, Suite 100
San Diego, CA 92121**

**PROXY STATEMENT
FOR THE 2020 ANNUAL MEETING OF STOCKHOLDERS**

To Be Held on June 30, 2020

Our Board of Directors (sometimes referred to as the “Board”) is soliciting your proxy to vote at the 2020 Annual Meeting of Stockholders (the “Annual Meeting”) of Bionano Genomics, Inc., a Delaware corporation (sometimes referred to as “we,” “us,” the “Company” or “Bionano”) to be held virtually, via live webcast at www.virtualshareholdermeeting.com/BNGO2020, on Thursday, June 30, 2020, at 10:00 a.m. Pacific Time, and any adjournment or postponement thereof. Stockholders attending the virtual meeting will be afforded the same rights and opportunities to participate as they would at an in-person meeting.

For the Annual Meeting, we have elected to furnish our proxy materials, including this proxy statement and our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 (the “Annual Report”), to our stockholders primarily via the internet. On or about May , 2020, we expect to mail to our stockholders a *Notice of Internet Availability of Proxy Materials* (the “Notice”) that contains notice of the Annual Meeting and instructions on how to access our proxy materials on the internet, how to vote at the Annual Meeting and how to request printed copies of the proxy materials.

Only stockholders of record at the close of business on May 15, 2020 (the “Record Date”) will be entitled to vote at the Annual Meeting. On the Record Date, there were 68,746,070 shares of common stock outstanding and entitled to vote. A list of stockholders entitled to vote at the Annual Meeting will be available for examination by stockholders for any purpose germane to the Annual Meeting for ten days before the Annual Meeting during normal business hours at our address above. The stockholder list will also be available online during the Annual Meeting at www.virtualshareholdermeeting.com/BNGO2020.

The 2019 Annual Report, which contains consolidated financial statements as of and for the fiscal year ended December 31, 2019, accompanies this proxy statement. You also may obtain a copy of the Annual Report that was filed with the Securities and Exchange Commission (the “SEC”), without charge, by writing to our Secretary at 9540 Towne Centre Drive, Suite 100, San Diego, CA 92121, Attention: Secretary.

QUESTIONS AND ANSWERS ABOUT THESE PROXY MATERIALS AND VOTING

Why did I receive a notice regarding the availability of proxy materials on the internet?

Pursuant to rules adopted by the SEC, we have elected to provide access to our proxy materials over the internet. Accordingly, we have sent you the Notice because the Board is soliciting your proxy to vote at the Annual Meeting, including at any adjournments or postponements of the Annual Meeting. All stockholders will have the ability to access the proxy materials on the website referred to in the Notice or request to receive a printed set of the proxy materials. Instructions on how to access the proxy materials over the internet or to request a printed copy may be found in the Notice.

We intend to mail the Notice on or about May 19, 2020 to all stockholders of record entitled to vote at the Annual Meeting.

Will I receive any other proxy materials by mail?

We may send you a proxy card, along with a second Notice, on or after May 29, 2020.

Where and when is the Annual Meeting?

The Annual Meeting will be held on Thursday, June 30, 2020, at 10:00 a.m. Pacific Time. In light of the COVID-19 pandemic, to support the health and well-being of our stockholders, employees and directors, and taking into account recent federal, state and local guidance, the Annual Meeting will be held in a virtual meeting format only, via live webcast on the Internet, with no physical in-person meeting. A summary of the information you need to attend the Annual Meeting online is provided below:

- Any stockholder may listen to the Annual Meeting and participate live via webcast at www.virtualshareholdermeeting.com/BNGO2020. The webcast will begin at 10:00 a.m. Pacific Time.
- Stockholders may vote and submit questions during the Annual Meeting via live webcast.
- Stockholders may also submit questions no earlier than 15 minutes prior to the beginning of the webcast for the Annual Meeting by logging in to www.virtualshareholdermeeting.com/BNGO2020 and entering the 16-digit control number included on the Notice or proxy card.
- To enter the meeting, please have your 16-digit control number, which is available on your proxy card. If you do not have your 16-digit control number, you will be able to listen to the meeting only and you will not be able to vote or submit questions during the meeting.
- Instructions on how to connect to and participate in the Annual Meeting via the internet, including how to demonstrate proof of stock ownership, are posted at www.virtualshareholdermeeting.com/BNGO2020.

We recommend that you log in a few minutes before 10:00 a.m. Pacific Time to ensure you are logged in when the Annual Meeting starts. The information on our website is not incorporated by reference into this proxy statement or our Annual Report for fiscal year 2019.

If you plan to vote during the Annual Meeting, you may still do so even if you have already returned your proxy.

What do I need in order to be able to participate in the Annual Meeting online?

You will need the 16-digit control number included on your Notice or your proxy card in order to be able to vote your shares or submit questions during the Annual Meeting. If you do not have your 16-digit control number, you will be able to listen to the meeting only—you will not be able to vote or submit questions during the meeting. **Instructions on how to connect and participate in the Annual Meeting via the internet, including how to demonstrate proof of stock ownership, are posted at www.virtualshareholdermeeting.com/BNGO2020.**

What if during the Annual Meeting I have technical difficulties or trouble accessing the live webcast of the Annual Meeting?

On the day of the Annual Meeting, if you encounter any difficulties accessing the live webcast of the Annual Meeting or during the Annual Meeting, please call the technical support number that will be posted on the log-in page for our virtual Annual Meeting for assistance.

Who can vote at the Annual Meeting?

Only stockholders of record at the close of business on May 15, 2020 will be entitled to vote at the Annual Meeting. On this record date, there were 68,746,070 shares of common stock outstanding and entitled to vote.

Stockholder of Record: Shares Registered in Your Name

If on May 15, 2020 your shares were registered directly in your name with our transfer agent, American Stock Transfer & Trust Company, LLC, then you are a stockholder of record. As a stockholder of record, you may vote at the Annual Meeting or vote by proxy. Whether or not you plan to attend the Annual Meeting virtually, we urge you to fill out and return the proxy card that may be mailed to you, or vote by proxy over the telephone or on the internet as instructed below to ensure your vote is counted.

Beneficial Owner: Shares Registered in the Name of a Broker or Bank

If on May 15, 2020 your shares were held, not in your name, but rather in an account at a brokerage firm, bank, dealer or other similar organization, then you are the beneficial owner of shares held in “street name” and the Notice is being forwarded to you by that organization. The organization holding your account is considered to be the stockholder of record for purposes of voting at the Annual Meeting. As a beneficial owner, you have the right to direct your broker, bank or other agent regarding how to vote the shares in your account. You are also invited to attend the Annual Meeting virtually. However, since you are not the stockholder of record, you may not vote your shares online during the Annual Meeting unless you request and obtain a valid proxy issued in your name from your broker, bank or other agent.

What am I voting on?

There are four matters scheduled for a vote:

- Proposal 1: Approval of a series of alternate amendments to the Company’s Amended and Restated Certificate of Incorporation, to effect, at the discretion of the Board: (i) a reverse split of the Company’s common stock, whereby each outstanding 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20 shares of common stock would be combined and converted into one share of common stock; and (ii) for reverse splits in the range of 1-for-10 to 1-for-20, a reduction in the number of authorized shares of common stock from 200,000,000 to 40,000,000, 36,363,636, 33,333,334, 30,769,230, 28,571,428, 26,666,667, 25,000,000, 23,529,412, 22,222,222, 21,052,632 and 20,000,000 shares, respectively;
- Proposal 2: Approval of an amendment to the Company’s 2018 Equity Incentive Plan, or the 2018 Plan, to, among other things, increase the number of shares of common stock authorized for issuance under the 2018 Plan by 4,658,803 shares (before any adjustment for any reverse stock split);
- Proposal 3: Election of the three Class II directors named herein, each to hold office until the 2023 annual meeting of stockholders or until a successor is duly elected and qualified or until the director’s earlier death, resignation or removal; and
- Proposal 4: Ratification of the selection of BDO USA, LLP by the Audit Committee of the Board of Directors (the “Audit Committee”) to serve as the Company’s independent registered public accounting firm for the fiscal year ending December 31, 2020.

What if another matter is properly brought before the Annual Meeting?

The Board knows of no other matters that will be presented for consideration at the Annual Meeting. If any other matters are properly brought before the Annual Meeting, it is the intention of the persons named in the accompanying proxy to vote on those matters in accordance with their best judgment.

How do I vote?

The procedures for voting are as follows:

Stockholder of Record: Shares Registered in Your Name

If you are a stockholder of record, you may vote at the Annual Meeting, vote by proxy over the telephone, vote by proxy through the internet or vote by proxy using a proxy card that you may request or that we may

elect to deliver at a later time. Whether or not you plan to attend the Annual Meeting, we urge you to vote by proxy to ensure your vote is counted. You may still attend the Annual Meeting and vote online during the meeting even if you have already voted by proxy.

- **VOTE BY INTERNET:** To vote through the internet, go to www.proxyvote.com to complete an electronic proxy card. You will be asked to provide the company number and control number from the Notice. Your internet vote must be received by 11:59 p.m., Eastern Time on June 29, 2020 to be counted.
- **VOTE BY PHONE:** To vote over the telephone, dial toll-free 800-690-6903 using a touch-tone phone and follow the recorded instructions. You will be asked to provide the company number and control number from the Notice. Your telephone vote must be received by 11:59 p.m., Eastern Time on June 29, 2020 to be counted.
- **VOTE BY PROXY CARD:** To vote using the proxy card, simply complete, sign and date the proxy card that may be delivered to you and return it promptly in the envelope provided. If you return your signed proxy card to us before the Annual Meeting, we will vote your shares as you direct.
- **VOTE DURING MEETING:** To vote online during the Annual Meeting, follow the provided instructions to join the Annual Meeting at www.virtualshareholdermeeting.com/BNGO2020, starting at 10:00 a.m. Pacific Time on Thursday, June 30, 2020.

Beneficial Owner: Shares Registered in the Name of Broker or Bank

If you are a beneficial owner of shares registered in the name of your brokerage firm, bank, dealer or other agent, you should have received the Notice containing voting instructions from that organization rather than from Bionano. Simply follow the voting instructions in the Notice to ensure that your vote is counted. Alternatively, you may vote by telephone or over the internet as instructed by your broker or bank. To vote online during the Annual Meeting, you must obtain a valid proxy from your brokerage firm, bank, dealer or other agent. Follow the instructions from your broker, bank or other agent, or contact that organization to request a proxy form.

Internet proxy voting may be provided to allow you to vote your shares online, with procedures designed to ensure the authenticity and correctness of your proxy vote instructions. However, please be aware that you must bear any costs associated with your internet access, such as usage charges from internet access providers and telephone companies.

Can I vote my shares by filling out and returning the Notice?

No. The Notice identifies the items to be voted on at the Annual Meeting, but you cannot vote by marking the Notice and returning it. The Notice provides instructions on how to vote through the internet, by telephone, by using a printed proxy card or by submitting a ballot online during the Annual Meeting.

How many votes do I have?

On each matter to be voted upon, you have one vote for each share of common stock you own as of May 15, 2020.

If I am a stockholder of record and I do not vote, or if I return a proxy card or otherwise vote without giving specific voting instructions, what happens?

If you are a stockholder of record and do not vote by completing your proxy card, by telephone, through the internet or online during the Annual Meeting, your shares will not be voted.

If you return a signed and dated proxy card or otherwise vote without marking voting selections, your shares will be voted, as applicable, "For" the Reverse Split Proposal, "For" the Equity Incentive Plan Proposal, "For" the Director Election Proposal and "For" the Auditor Ratification Proposal. If any other matter is properly presented at the Annual Meeting, your proxyholder (one of the individuals named on your proxy card) will vote your shares using his or her best judgment.

If I am a beneficial owner of shares held in street name and I do not provide my broker or bank with voting instructions, what happens?

If you are a beneficial owner and do not instruct your brokerage firm, bank, dealer or other agent how to vote your shares, the question of whether your broker or nominee will still be able to vote your shares depends on whether the particular proposal is considered to be a routine matter under applicable rules. Brokers and nominees can use their discretion to vote uninstructed shares with respect to matters that are considered to be routine under applicable rules, but not with respect to non-routine matters. Under applicable rules and interpretations, non-routine matters are matters that may substantially affect the rights or privileges of stockholders, such as mergers, stockholder proposals, elections of directors (even if not contested), executive compensation (including any advisory stockholder votes on executive compensation and on the frequency of stockholder votes on executive compensation), and certain corporate governance proposals, even if management-supported. Accordingly, without your instructions your broker or nominee may not vote your shares on Proposal 2 or Proposal 3, but may vote your shares on Proposal 1 and Proposal 4.

If you are a beneficial owner of shares held in street name, in order to ensure your shares are voted in the way you would prefer, you must provide voting instructions to your broker, bank or other agent by the deadline provided in the materials you receive from your broker, bank or other agent.

Who is paying for this proxy solicitation?

Bionano will pay for the entire cost of soliciting proxies. In addition to these proxy materials, our directors and employees may also solicit proxies in person, by telephone, or by other means of communication. Directors and employees will not be paid any additional compensation for soliciting proxies. We may also reimburse brokerage firms, banks, dealers or other agents for the cost of forwarding proxy materials to beneficial owners.

What does it mean if I receive more than one Notice?

If you receive more than one Notice, your shares may be registered in more than one name or in different accounts. Please follow the voting instructions on each Notice to ensure that all of your shares are voted.

Can I change my vote after submitting my proxy?

Stockholder of Record: Shares Registered in Your Name

Yes. You can revoke your proxy at any time before the final vote at the Annual Meeting. If you are the record holder of your shares, you may revoke your proxy in any one of the following ways:

- You may submit another properly completed proxy card with a later date.
- You may grant a subsequent proxy by telephone or through the internet.
- You may send a timely written notice that you are revoking your proxy to: Secretary of Bionano Genomics, Inc., 9540 Towne Centre Drive, Suite 100, San Diego, CA 92121.
- You may vote during the Annual Meeting which will be hosted via the Internet. Simply attending the Annual Meeting online will not, by itself, revoke your proxy. Even if you plan to attend the Annual Meeting online, we recommend that you also submit your proxy or voting instructions or vote by telephone or through the internet so that your vote will be counted if you later decide not to attend the Annual Meeting online.

Your most recent proxy card or telephone or internet proxy is the one that is counted.

Beneficial Owner: Shares Registered in the Name of Broker or Bank

If your shares are held by your brokerage firm, bank, dealer or other agent as a nominee, you should follow the instructions provided by your broker, bank or other agent.

When are stockholder proposals and director nominations due for next year's Annual Meeting?

To be considered for inclusion in the Company's proxy materials for next year's annual meeting, your proposal must be submitted in writing by January 19, 2021, to: Secretary of Bionano Genomics, Inc., 9540 Towne Centre Drive, Suite 100, San Diego, CA 92121. If you wish to submit a proposal (including a

director nomination) that is not to be included in the Company's proxy materials for next year's annual meeting, you must do so between March 2, 2021 and April 1, 2021. You are also advised to review the Company's amended and restated bylaws, which contain additional requirements relating to advance notice of stockholder proposals and director nominations.

What are "broker non-votes"?

When a beneficial owner of shares held in "street name" does not give instructions to the brokerage firm, bank, dealer or other agent holding the shares as to how to vote on matters deemed to be non-routine under applicable rules, the broker or nominee cannot vote the shares. These unvoted shares are counted as "broker non-votes."

As a reminder, if you are a beneficial owner of shares held in street name, in order to ensure your shares are voted in the way you would prefer, you must provide voting instructions to your brokerage firm, bank, dealer or other agent by the deadline provided in the materials you receive from your brokerage firm, bank, dealer or other agent.

How are votes counted?

Each share of our common stock you own entitles you to one vote. The Notice and proxy card indicates the number of shares of our common stock you owned at the close of business on May 15, 2020. The inspector of elections will count votes for the meeting and will separately count "For" and "Against" votes, abstentions, and broker non-votes.

With respect to Proposal 3, the Director Election Proposal, stockholders do not affirmatively vote "Against" nominees. Instead, if you do not want to elect a particular nominee, you should choose to "Withhold" a vote in favor of the applicable nominee for Director and the inspector of elections will count each "Withhold" for each nominee.

Abstentions will be counted towards the vote total for Proposal 1, Proposal 2 and Proposal 4 and will have the same effect as "Against" votes. Abstentions will have no effect on Proposal 3. For Proposal 1, broker non-votes will have the same effect as "Against" votes. For Proposal 2, Proposal 3 and Proposal 4, broker non-votes will be counted towards the presence of a quorum but will not be counted towards the vote total.

How many votes are needed to approve each proposal?

- The approval of the Reverse Stock Split Proposal will require "For" votes from a majority of outstanding shares of our common stock. Abstentions and broker non-votes will have the same effect as "Against" votes.
- The approval of the Equity Incentive Plan Proposal will require "For" votes from the holders of a majority of shares present by virtual attendance at the Annual Meeting or represented by proxy and entitled to vote on the subject matter. Abstentions will have the same effect as "Against" votes. Broker non-votes will have no effect on this proposal.
- For the Director Election Proposal, the three nominees receiving the most "For" votes from the holders of shares present by virtual attendance at the Annual Meeting or represented by proxy and entitled to vote on the matter will be elected. Only votes "For" or "Withhold" will affect the outcome.
- The Auditor Ratification Proposal must receive "For" votes from the holders of a majority of shares present by virtual attendance at the Annual Meeting or represented by proxy and entitled to vote on the matter. If you "Abstain" from voting, it will have the same effect as an "Against" vote. Broker non-votes, if any, will have no effect.

What is the quorum requirement?

A quorum of stockholders is necessary to hold the Annual Meeting. A quorum will be present if stockholders holding at least a majority of the outstanding shares entitled to vote are present by virtual attendance at the Annual Meeting or represented by proxy. On the record date, there were 68,746,070 shares outstanding and entitled to vote. **Thus, the holders of 34,373,036 shares must be present by virtual attendance or represented by proxy at the Annual Meeting to have a quorum.**

Your shares will be counted towards the quorum only if you submit a valid proxy (or one is submitted on your behalf by your brokerage firm, bank, dealer or other agent) or if you vote online during the Annual Meeting. Abstentions and broker non-votes will be counted towards the quorum requirement. If there is no quorum, the holders of a majority of shares present by virtual attendance at the Annual Meeting or represented by proxy may adjourn the Annual Meeting to another date.

How can I find out the results of the voting at the Annual Meeting?

Preliminary voting results will be announced at the Annual Meeting. In addition, final voting results will be published in a current report on Form 8-K that we expect to file with the SEC within four business days after the Annual Meeting. If final voting results are not available to us in time to file a Form 8-K within four business days after the Annual Meeting, we intend to file a Form 8-K to publish preliminary results and, within four business days after the final results are known to us, file an additional Form 8-K to publish the final results.

PROPOSAL 1:

APPROVAL OF THE REVERSE STOCK SPLIT PROPOSAL

General

The Board has approved a series of proposed amendments to the Company's Amended and Restated Certificate of Incorporation, or the Certificate of Incorporation, that would effect:

- a reverse stock split of the Company's common stock, whereby each outstanding 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20 shares would be combined and converted into one share of the Company's common stock (each of which is referred to in this proxy statement as a Reverse Stock Split); and
- for Reverse Stock Splits in the range of 1-for-10 to 1-for-20, a reduction in the number of authorized shares of common stock from 200,000,000 to 40,000,000, 36,363,636, 33,333,334, 30,769,230, 28,571,428, 26,666,667, 25,000,000, 23,529,412, 22,222,222, 21,052,632 and 20,000,000 shares, respectively.

The combined effect of each of the alternative amendments (each of which is referred to in this proxy statement as a Reverse Split Amendment) is illustrated in the table below:

	Amendment No.1 (see Appendix 1)	Amendment No.2 (see Appendix 2)	Amendment No.3 (see Appendix 3)	Amendment No.4 (see Appendix 4)	Amendment No.5 (see Appendix 5)	Amendment No.6 (see Appendix 6)
Reverse Stock Split ratio	10:1	11:1	12:1	13:1	14:1	15:1
Number of authorized shares of common stock	40,000,000	36,363,636	33,333,334	30,769,230	28,571,428	26,666,667
	Amendment No.7 (see Appendix 7)	Amendment No.8 (see Appendix 8)	Amendment No.9 (see Appendix 9)	Amendment No.10 (see Appendix 10)	Amendment No.11 (see Appendix 11)	
Reverse Stock Split ratio	16:1	17:1	18:1	19:1	20:1	
Number of authorized shares of common stock	25,000,000	23,529,412	22,222,222	21,052,632	20,000,000	

The effectiveness of any one of these amendments and the abandonment of the other amendments, or the abandonment of all of these amendments, will be determined by the Board following the Annual Meeting and prior to July 31, 2020. The Board has recommended that these proposed amendments be presented to the Company's stockholders for approval.

Upon receiving stockholder approval of this Proposal 1, the Board will have the sole discretion, until July 31, 2020, to select, as it determines to be in the best interests of the Company and its stockholders, any Reverse Split Amendment. The Board believes that stockholder approval of these reverse split ratios (as opposed to approval of a single reverse split ratio) provides the Board with maximum flexibility to achieve the purposes of a Reverse Stock Split and, therefore, is in the best interests of the Company and its stockholders. The corresponding alternative reductions in the authorized common stock for reverse stock split ratios in the range of 1-for-10 to 1-for-20 are designed to ensure that the Company does not have what some stockholders might view as an unreasonably high number of authorized shares of common stock that are unissued or reserved for issuance.

If the Board determines to effect one of the alternative Reverse Stock Splits by filing the applicable Reverse Split Amendment with the Secretary of State of the State of Delaware, the Certificate of Incorporation would be amended accordingly, and all other Reverse Split Amendments will be abandoned. The text of the form of each Reverse Split Amendment, one of which would be filed with the Secretary of State of the State of Delaware to effect the Reverse Stock Split, are set forth in Appendices 1 through 11 to this proxy statement. However, such text is subject to amendment to include such changes as may be required by the office of the Secretary of State of the State of Delaware or as the Board deems necessary and advisable.

If the Board elects to effect a Reverse Stock Split following stockholder approval, for Reverse Stock Splits in the range of 1-for-10 to 1-for-20, the number of issued and outstanding shares of common stock would be reduced in accordance with a reverse split ratio selected by the Board from among those set forth in this Proposal 1. Except for adjustments that may result from the treatment of fractional shares as described below, each stockholder will hold the same percentage of outstanding common stock immediately following the Reverse Stock Split as such stockholder held immediately prior to the Reverse Stock Split.

If the Board does not implement any of the Reverse Stock Splits before July 31, 2020, further stockholder approval would be required prior to implementing any reverse stock split.

Purposes and Effect of the Reverse Stock Split

Although the proposed Reverse Stock Split will not have the effect of increasing the Company's equity market capitalization, implementing the Reverse Stock Split will provide benefits to the Company and our existing stockholders in a number of ways, including:

Compliance with Nasdaq Listing Requirements. Our common stock is listed on the Nasdaq Capital Market, which has as one of its continued listing requirements a minimum bid price of at least \$1.00 per share, or the Minimum Bid Price Requirement. On April 22, 2020, we received a letter, or the Letter, from The Nasdaq Stock Market LLC, or Nasdaq, indicating that we failed to comply with the Minimum Bid Price Requirement for the 30 consecutive business days preceding the date of the Letter. We are required to regain compliance by December 28, 2020. To regain compliance, the closing big price of our common stock must be at least \$1.00 for a minimum of 10 consecutive business days.

If we do not regain compliance with this requirement by December 28, 2020, we may be afforded an additional 180 calendar days to regain compliance if, on such date, we are in compliance with the continued listing requirement for the market value of publicly held shares as well as all other applicable standards for initial listing of our common stock on The Nasdaq Capital Market, provided that we notify Nasdaq of our intent to cure the deficiency, and Nasdaq does not determine that it is not possible for us to cure the deficiency.

If we do not regain compliance with this minimum bid price requirement, our common stock will be subject to delisting. The delisting of our common stock by Nasdaq could adversely affect the liquidity of our common stock, create increased volatility in our common stock, and result in a loss of current or future coverage by certain sell-side analysts and/or a diminution of institutional investor interest. Delisting could also cause a loss of confidence of our collaborators, vendors and employees, which could harm our business and future prospects. If our common stock is delisted by Nasdaq, our common stock may be eligible to trade on the OTC Bulletin Board, OTC-QB or another over-the-counter market. Any such alternative would likely result in it being more difficult for us to raise additional capital through the public or private sale of equity securities and for investors to dispose of or obtain accurate quotations as to the market value of, our common stock. Moreover, if our common stock is delisted, it may come within the definition of "penny stock" under the Securities Exchange Act of 1934, as amended, which imposes additional sales practice requirements on broker-dealers who sell securities to persons other than established customers and accredited investors. These requirements may reduce trading activity in the secondary market for our common stock and may impact the ability or willingness of broker-dealers to sell our securities which could limit the ability of stockholders to sell their securities in the public market and limit our ability to attract and retain qualified employees or raise additional capital in the future.

The Reverse Stock Split would decrease the total number of shares of our common stock outstanding and should, absent other factors, proportionately increase the market price of our common stock above \$1.00 per share. Therefore, the Board believes that the Reverse Stock Split is an effective means for us to regain compliance with the Minimum Bid Price Requirement.

Increasing Authorized but Unissued Shares of Common Stock. A second purpose of the Reverse Stock Split is to increase the percentage of authorized but unissued shares of common stock. In addition to the 68,746,070 shares of common stock outstanding as of May 15, 2020, we have also reserved 103,099,050 shares for issuance upon the exercise of outstanding warrants, 2,907,182 shares for issuance upon the exercise of outstanding stock options and 1,143,488 shares for issuance pursuant to our equity incentive and employee stock purchase plans, meaning that we presently have 24,104,210 authorized shares available for issuance (in each case these amounts are before any adjustment for any Reverse Stock Split), which is insufficient to meet our needs in connection with future financings and properly incentivizing our key personnel.

The Board believes that an increase in the percentage of authorized but unissued shares of common stock is necessary in order to provide us with the ability to issue additional shares in the future on a timely basis in connection with potential financings, business combinations or other corporate purposes, enabling us to take advantage of market conditions, the availability of more favorable financing, and opportunities for business combinations and other strategic transactions, without the potential delay and expense associated with convening a special stockholders' meeting. In addition, our success also depends in part on our continued ability to attract, retain and motivate highly qualified management and key personnel. If this proposal is not approved by our stockholders, the lack of sufficient unissued and unreserved authorized shares of common stock to provide future equity incentive opportunities could adversely impact our ability to achieve this objective.

Stock Price Volatility. We have been advised that a higher stock price may increase the acceptability of our common stock to a number of long-term investors who may not find our shares attractive at their current prices due to the trading volatility often associated with stocks below certain prices.

Stock Price Requirements. We understand that many brokerage houses and institutional investors have internal policies and practices that either prohibit them from investing in low-priced stocks or tend to discourage individual brokers from recommending low-priced stocks to their customers or by restricting or limiting the ability to purchase such stocks on margin.

Transaction Costs. Investors also may be dissuaded from purchasing stocks below certain prices because the brokerage commissions, as a percentage of the total transaction value, tend to be higher for such low-priced stocks.

In summary, if our stockholders do not approve this Proposal 1, we will likely not be able to access the capital markets, complete corporate collaborations or partnerships, attract, retain and motivate employees, and pursue other business opportunities integral to our growth and success.

Reasons for the Decrease in Authorized Shares

As a matter of Delaware law, implementation of any of the Reverse Stock Split does not require a change in the total number of shares of our common stock authorized under our Certificate of Incorporation. However, for Reverse Stock Splits in the range of 1-for-10 to 1-for-20, the proposed corresponding alternative reductions in the authorized common stock are designed to ensure that the Company does not have what some stockholders might view as an unreasonably high number of authorized but unissued shares of common stock.

Board Discretion to Implement the Reverse Split Amendments

The Board believes that stockholder approval of a range of Reverse Stock Split ratios (rather than a single ratio) is in the best interests of our stockholders because it provides the Board with the flexibility to achieve the desired results of the Reverse Stock Split and because it is not possible to predict market conditions at the time the Reverse Stock Split would be implemented. If stockholders approve this Proposal 1, the Board would carry out a Reverse Stock Split only upon the Board's determination that a Reverse Stock Split would be in the best interests of our stockholders at that time. The Board would then select one Reverse Stock Split approved by stockholders as it determines to be advisable and in the best interests of the stockholders considering relevant market conditions at the time the Reverse Stock Split is to be implemented. In determining the Reverse Stock Split ratio, following receipt of stockholder approval, the Board may consider numerous factors including:

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

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

Certain Risks Associated with the Reverse Stock Split

Before voting on this Proposal 1, stockholders should consider the following risks associated with effecting a Reverse Stock Split:

- Although we expect that a Reverse Stock Split will result in an increase in the market price of our common stock, we cannot assure you that a Reverse Stock Split, if effected, will increase the market price of our common stock in proportion to the reduction in the number of shares of our common stock outstanding or result in a permanent increase in the market price. The effect that a Reverse Stock Split may have upon the market price of our common stock cannot be predicted with any certainty, and the history of similar reverse stock splits for companies in similar circumstances to ours is varied. The market price of our common stock is dependent on many factors, including our business and financial performance, general market conditions, prospects for future growth and other factors detailed from time to time in the reports we file with the SEC. Accordingly, the total market capitalization of our common stock after a Reverse Stock Split may be lower than the total market capitalization before a Reverse Stock Split and, in the future, the market price of our common stock following a Reverse Stock Split may not exceed or remain higher than the market price prior to a Reverse Stock Split.
- Even if our stockholders approve a Reverse Stock Split and the Reverse Stock Split is effected, we cannot assure you that we will continue to meet the continued listing requirements of the Nasdaq Capital Market.
- A Reverse Stock Split may result in some stockholders owning “odd lots” of less than 100 shares of common stock on a post-split basis. These odd lots may be more difficult to sell, or require greater transaction costs per share to sell, than shares in “round lots” of even multiples of 100 shares.
- Although the Board believes that the decrease in the number of shares of common stock outstanding as a consequence of a Reverse Stock Split and the anticipated increase in the market price of common stock could encourage interest in our common stock and possibly promote greater liquidity for stockholders, such liquidity could also be adversely affected by the reduced number of shares outstanding after the Reverse Stock Split.

Principal Effects of the Reverse Stock Split Amendment

If this Proposal 1 is approved and a Reverse Stock Split Amendment is effected, each holder of common stock outstanding immediately prior to the effectiveness of the Reverse Stock Split will own a reduced number of shares of common stock upon effectiveness of the Reverse Stock Split. The Reverse Stock Split would be effected simultaneously for all outstanding shares of common stock at the same ratio. Except for adjustments that may result from the treatment of fractional shares (as described below), the Reverse Stock Split would affect all stockholders uniformly and would not change any stockholder’s percentage ownership interest in the Company. The relative voting rights and other rights and preferences that accompany the shares of common stock will not be affected by the Reverse Stock Split. Shares of common stock issued pursuant to the Reverse Stock Split will remain fully paid and nonassessable.

Because no fractional shares will be issued, holders of our common stock could be eliminated in the event that the proposed Reverse Stock Split is implemented. However, we are not proposing the Reverse Stock Split as the first step in a “going private” transaction.

The proposed increase in the relative number of authorized but unissued shares of common stock by way of the Reverse Stock Split will not, by itself, have an immediate dilutive effect on our current stockholders. However, the future issuance of additional shares of common stock or securities convertible into our common stock may occur at times or under circumstances that could result in a dilutive effect on the earnings per share, book value per share, voting power and percentage interest of the present holders of our common stock, some of whom have preemptive rights to subscribe for additional shares that we may issue.

Effect on Stock Awards, Equity Compensation Plans and Warrants

Under the terms of our outstanding equity awards and warrants, the proposed Reverse Stock Split would adjust and proportionately reduce the number of shares of common stock issuable upon exercise or vesting of such awards and warrants in the same ratio of the Reverse Stock Split (which may include rounding the number

of shares of common stock issuable down to the nearest whole share) and, correspondingly, would proportionately increase the per share exercise or purchase price, if any, of all such awards and warrants. The Reverse Stock Split would also reduce the number of shares of common stock available for issuance under the Company's equity compensation plan in proportion to the reverse split ratio of the Reverse Stock Split selected by the Board.

The following table contains approximate information relating to our common stock under certain of the Reverse Split Amendments, based on share information as of May 15, 2020, without giving effect to the treatment of fractional shares.

	<u>May 15, 2020</u>	<u>1-for-10</u>	<u>1-for-15</u>	<u>1-for-20</u>
Number of authorized shares of common stock	200,000,000	40,000,000	26,666,667	20,000,000
Number of outstanding shares of common stock	68,746,070	6,874,607	4,583,071	3,437,303
Number of shares of common stock reserved for issuance upon exercise of outstanding warrants	103,099,050	10,309,905	6,873,270	5,154,952
Number of shares of common stock reserved for issuance upon exercise of outstanding stock options	2,907,182	290,718	193,812	145,359
Number of shares of common stock reserved for issuance in connection with future awards under our equity compensation plans	<u>1,143,488</u>	<u>114,348</u>	<u>76,232</u>	<u>57,174</u>
Number of authorized and unreserved shares of common stock not outstanding	24,104,210	22,410,422	14,940,282	11,205,212
Authorized but unissued and unreserved shares of common stock as a percentage of total authorized shares of common stock	12.1%	56%	56%	56%

Potential Anti-Takeover Effect

An increase in the number of authorized but unissued shares of common stock relative to the number of outstanding shares of common stock may also, under certain circumstances, be construed as having an anti-takeover effect. Although not designed or intended for such purposes, the effect of the proposed Reverse Stock Split might be to render more difficult or to discourage a merger, tender offer, proxy contest or change in control of us and the removal of management, which stockholders might otherwise deem favorable. For example, the authority of the Board to issue common stock might be used to create voting impediments or to frustrate an attempt by another person or entity to effect a takeover or otherwise gain control of us because the issuance of additional common stock would dilute the voting power of the common stock and preferred stock then outstanding. Our common stock could also be issued to purchasers who would support the Board in opposing a takeover bid which our board determines not to be in our best interests and those of our stockholders.

In addition to the Reverse Split Amendment, our Certificate of Incorporation and Amended and Restated Bylaws also include other provisions that may have an anti-takeover effect. These provisions, among other things, permit our board to issue preferred stock with rights senior to those of the common stock without any further vote or action by the stockholders, provide that special meetings of stockholders may only be called by the Board and some of our officers, and do not provide for cumulative voting rights, which could make it more difficult for stockholders to effect certain corporation actions and may delay or discourage a change in control.

The Board is not presently aware of any attempt, or contemplated attempt, to acquire control of us and the Reverse Split Amendment is not part of any plan by the Board to recommend or implement a series of anti-takeover measures.

Accounting Matters

The Reverse Stock Split will not affect the par value per share of common stock, which will remain unchanged at \$0.01 per share. As a result of the Reverse Stock Split, at the effective time, the stated capital on our balance sheet attributable to the common stock, which consists of the par value per share of the common stock multiplied by the aggregate number of shares of the common stock issued and outstanding, will be reduced in proportion to the ratio of the Reverse Stock Split. Correspondingly, the additional paid-in capital account,

which consists of the difference between the stated capital and the aggregate amount paid upon issuance of all currently outstanding shares of common stock, will be credited with the amount by which the stated capital is reduced. The stockholders' equity, in the aggregate, will remain unchanged. In addition, the per share net income or loss of common stock, for all periods, will be restated because there will be fewer outstanding shares of common stock.

Mechanics of the Reverse Stock Split

No Fractional Shares

We will not issue fractional shares in connection with the reverse stock split. Instead, any fractional share resulting from the reverse stock split because a stockholder owns a number of shares not evenly divisible by the ratio would instead will be paid in cash. The cash amount to be paid to each stockholder would be equal to the resulting fractional interest in one share of our common stock to which the stockholder would otherwise be entitled, multiplied by the closing trading price of our common stock on the Nasdaq Global Market on the effective date of the Reverse Stock Split. The ownership of a fractional interest will not give the holder thereof any voting, dividend or other right except to receive the cash payment therefore. Stockholders should be aware that, under the escheat laws of the various jurisdictions where stockholders reside, where we are domiciled and where the funds will be deposited, sums due for fractional interests that are not timely claimed after the effective time may be required to be paid to the designated agent for each such jurisdiction. Thereafter, stockholders otherwise entitled to receive such funds may have to seek to obtain them directly from the state to which they were paid. We do not anticipate that the aggregate cash amount paid by the Company for fractional interests will be material to the Company.

Effect on Beneficial Holders of Common Stock (i.e., stockholders who hold in "street name")

Upon the effectiveness of the Reverse Stock Split, we intend to treat shares of common stock held by stockholders in "street name," through a bank, broker or other nominee, in the same manner as registered stockholders whose shares of common stock are registered in their names. Banks, brokers or other nominees will be instructed to effect the Reverse Stock Split for their beneficial holders holding the common stock in "street name." However, these banks, brokers or other nominees may have different procedures than registered stockholders for processing the Reverse Stock Split and making payment for fractional shares. If a stockholder holds shares of common stock with a bank, broker or other nominee and has any questions in this regard, stockholders are encouraged to contact their bank, broker or other nominee.

Effect on Registered "Book-Entry" Holders of Common Stock (i.e., stockholders that are registered on the transfer agent's books and records but do not hold certificates)

Most of our registered holders of common stock hold some or all of their shares electronically in book-entry form with our transfer agent. These stockholders do not have stock certificates evidencing their ownership of the common stock. They are, however, provided with a statement reflecting the number of shares registered in their accounts.

If a stockholder holds registered shares in book-entry form with the transfer agent, no action needs to be taken to receive post-Reverse Stock Split shares or cash payment in lieu of any fractional share interest, if applicable. If a stockholder is entitled to post-Reverse Stock Split shares, a transaction statement will automatically be sent to the stockholder's address of record indicating the number of shares of common stock held following the Reverse Stock Split.

If a stockholder is entitled to a cash payment in lieu of any fractional share interest, a check will be mailed to the stockholder's registered address as soon as practicable after the effective date of the Reverse Stock Split. By signing and cashing the check, stockholders will warrant that they owned the shares of common stock for which they received a cash payment. The cash payment is subject to applicable federal and state income tax and state abandoned property laws.

Effect on Certificated Shares

Upon the Reverse Stock Split, our transfer agent will act as our exchange agent and act for holders of common stock in implementing the exchange of their certificates.

After the effective date of a Reverse Stock Split, stockholders holding shares in certificated form will be sent a transmittal letter by the transfer agent for our common stock. The letter of transmittal will contain instructions on how a stockholder should surrender his or her old certificates to the transfer agent in exchange for certificates representing the appropriate number of whole shares of post-Reverse Stock Split common stock, or the New Certificates. No New Certificates will be issued to a stockholder until that stockholder has surrendered all existing certificates, together with a properly completed and executed letter of transmittal, to the transfer agent. No stockholder will be required to pay a transfer or other fee to exchange the stockholder's existing certificates.

Stockholders will then receive a New Certificate(s) representing the number of whole shares of common stock to which they are entitled as a result of the Reverse Stock Split. Until surrendered, we will deem outstanding existing certificates held by stockholders to be canceled and represent only the number of whole shares of post-Reverse Stock Split common stock to which these stockholders are entitled. Any certificates submitted for exchange, whether because of a sale, transfer or other disposition of stock, will automatically be exchanged for New Certificates. If any existing certificates have a restrictive legend on the back of the existing certificates, the New Certificate(s) will be issued with the same restrictive legends that are on the back of the existing certificates. If a stockholder is entitled to a payment in lieu of any fractional share interest, such payment will be made as described below under "No Fractional Shares." **Stockholders should not destroy any stock certificate(s) and should not submit any certificate(s) until requested to do so.**

No Dissenters' or Appraisal Rights

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

U.S. Federal Income Tax Considerations

The following is a summary of certain U.S. federal income tax consequences of the Reverse Stock Split that are generally expected to be applicable to stockholders that hold their common shares as capital assets within the meaning of Section 1221 of the U.S. Internal Revenue Code of 1986, as amended, or the Code (generally property held for investment). This summary is based upon the provisions of the Code, Treasury regulations promulgated thereunder, administrative rulings and judicial decisions, all as in effect as of the date hereof, and all of which are subject to change and differing interpretations, possibly with retroactive effect. Changes in these authorities or their interpretation may result in the U.S. federal income tax consequences of the Reverse Stock Split differing substantially from the consequences summarized below. This summary, except for the discussion under "*Information Reporting and Backup Withholding*" below, is limited to stockholders who are U.S. Holders (as defined below).

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

In addition, this summary does not address: (a) the tax consequences of transactions effectuated before, after or at the same time as the Reverse Stock Split, whether or not they are in connection with the Reverse Stock Split; (b) any U.S. federal non-income tax consequences of the Reverse Stock Split, including estate, gift or other tax consequences; (c) any state, local or non-U.S. tax consequences of the Reverse Stock Split; (d) the Medicare contribution tax on net investment income, or (e) tax consequences to holders of options, warrants or similar rights to acquire our common stock. No ruling from the Internal Revenue Service, or the IRS, or opinion of

counsel, has been or will be requested in connection with the Reverse Stock Split. Stockholders should be aware that the IRS could adopt a position which could be sustained by a court contrary to that set forth in this discussion. Accordingly, each stockholder should consult with such stockholder's own tax advisor with respect to all of the potential tax consequences to such stockholder of the Reverse Stock Split.

For purposes of this discussion, a "U.S. Holder" means a beneficial owner of shares of our common stock that is any of the following:

- an individual who is a citizen or resident of the United States or someone treated as a U.S. citizen or resident for U.S. federal income tax purposes;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust if (i) a U.S. court can exercise primary supervision over the trust's administration and one or more "United States persons" (within the meaning of Section 7701(a)(30) of the Code) are authorized or have the authority to control all substantial decisions of the trust or (ii) it has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a United States person for U.S. federal income tax purposes.

If a partnership (including any entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds shares of our common stock, the tax treatment of a partner in the partnership generally will depend upon the status of the partner and the activities of the partnership. Partnerships holding our common stock and the partners therein should consult their tax advisors regarding the tax consequences to them of the Reverse Stock Split.

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

Taxation of U.S. Holders

The Reverse Stock Split should constitute a "recapitalization" for U.S. federal income tax purposes. As a recapitalization, except as described below with respect to cash received in lieu of fractional shares, a U.S. Holder should not recognize gain or loss as a result of the Reverse Stock Split. A U.S. Holder's aggregate tax basis in the shares of the common stock received pursuant to the Reverse Stock Split should equal the U.S. Holder's aggregate tax basis in the shares of the common stock surrendered, and such U.S. Holder's holding period in the shares of the common stock received should include the holding period of the shares of the common stock surrendered. Treasury regulations promulgated under the Code provide detailed rules for allocating the tax basis and holding period of shares of common stock surrendered pursuant to the Reverse Stock Split to shares of common stock received pursuant to the Reverse Stock Split. U.S. Holders holding shares of common stock that were acquired on different dates and at different prices should consult their tax advisors regarding the allocation of the tax basis and holding period of such shares.

A U.S. Holder who receives cash in lieu of a fractional share of common stock pursuant to the Reverse Stock Split generally should recognize capital gain or loss in an amount equal to the difference, if any, between the amount of cash received and the portion of the U.S. Holder's tax basis in the shares of common stock surrendered that is allocated to such fractional share of common stock. Such capital gain or loss generally should be long-term capital gain or loss if the U.S. Holder's holding period for the common stock surrendered in the Reverse Stock Split exceeds one year at the time of the Reverse Stock Split. Long-term capital gains of non-corporate U.S. Holders are generally subject to preferential tax rates. There are limitations on the deductibility of capital losses under the Code.

Information Reporting and Backup Withholding

Stockholders may be subject to information reporting with respect to any cash received in exchange for a fractional share interest in a new share in the Reverse Stock Split. Stockholders who are subject to information reporting and who do not provide a correct taxpayer identification number and other required information (such as by submitting a properly completed Internal Revenue Service Form W-9) may also be subject to backup

withholding, at the applicable rate. Any amount withheld under such rules is not an additional tax and may be refunded or credited against the stockholder's U.S. federal income tax liability, provided that the required information is properly furnished in a timely manner to the Internal Revenue Service.

Vote Required

Approval of Proposal 1 requires "FOR" votes, either online by virtual attendance of the Annual Meeting or by proxy, of a majority of the outstanding shares of our common stock entitled to vote. Abstentions will have the same effect as an "against" vote on this proposal. As noted above, this proposal will be considered a "routine" matter and, as a result, we do not expect there to be any broker non-votes on this proposal. If, however, a broker non-vote occurs (or if your shares are not affirmatively voted in favor of this proposal for any other reason), it will have the same effect as an "against" vote on this proposal.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" THE REVERSE STOCK SPLIT PROPOSAL.

PROPOSAL 2

APPROVAL OF THE EQUITY INCENTIVE PLAN PROPOSAL

In May 2020 the Board approved, subject to stockholder approval, amendments to the Bionano Genomics, Inc. 2018 Equity Incentive Plan, or the 2018 Plan. The 2018 Plan was originally adopted by our stockholders on August 14, 2018, as a successor to and continuation of the Bionano Genomics, Inc. Amended and Restated 2006 Equity Compensation Plan, or the 2006 Plan. In this proposal, our stockholders are being asked to approve the 2018 Plan, as amended, or the Amended 2018 Plan, which contains the following material changes to the 2018 Plan:

- an increase to the number of shares of common stock authorized for issuance under the 2018 Plan by 4,658,803 shares (before any adjustment to reflect the Reverse Stock Split); and
- a corresponding increase to the number of shares of common stock authorized for issuance under the 2018 Plan pursuant to the exercise of incentive stock options (ISOs) by 9,317,606 shares (before any adjustment to reflect the Reverse Stock Split).

Why We Are Asking Our Stockholders to Approve the Amended 2018 Plan

Equity awards have been historically and, we believe, will continue to be, an integral component of our overall compensation program for our employees and directors. Currently, we maintain the 2018 Plan to grant stock options and other forms of equity-based awards to our employees, directors and consultants. The Amended 2018 Plan will provide us with the shares necessary to continue to grant equity awards at levels we determine to be appropriate in order to attract new employees and directors, retain our existing employees and directors and to provide incentives for such persons to exert maximum efforts for our success.

We believe it is critical for our long-term success that the interests of our employees and directors are tied to our success as “owners” of our business. The equity incentive programs we have in place are intended to build stockholder value by attracting and retaining talented employees and directors. We believe we must continue to offer competitive equity compensation packages in order to retain and motivate the talent necessary for our continued growth and success. We carefully monitor the equity compensation and equity holdings of our employees, directors and consultants as well as the type of equity awards we grant to ensure these awards continue to provide incentives for the recipients to work towards our success. Stock options have been the primary component of our equity program. The potential value of stock options is realized only if our share price increases, and so stock options provide a strong incentive for individuals to work to build stockholder value.

We believe that the shares currently available for grant under the 2018 Plan will be insufficient to meet our anticipated retention and recruiting needs, particularly in light of the dilution resulting from the issuance of shares of our common stock in public offerings completed in October 2019 and April 2020 and anticipated to result from the issuance of additional shares of our common stock pursuant to the exercise of warrants issued in these public offerings, our expected growth and hiring needs and our ability to offer equity incentives to new hires that are consistent with our historical equity incentives. We expect to experience targeted growth in personnel as we progress our business. As of May 15, 2020, 758,086 shares remained available for future grant under the 2018 Plan (subject to potential future evergreen increases) and outstanding stock awards (which consist solely of stock options awards) covered a total of 2,907,182 shares, consisting of awards that were granted under the 2018 Plan and under the 2006 Plan.

The increased number of shares we are seeking under the Amended 2018 Plan will enable us to have a competitive equity incentive program to retain and motivate our key employees and other service providers and, to the extent necessary, recruit top talent as necessary to execute on our business plan.

The Size of Our Share Request Is Reasonable and We Manage Our Equity Award Use Carefully

We continue to believe that equity incentive awards such as stock options are a vital part of our overall compensation program. Our compensation philosophy reflects broad-based eligibility for equity incentive awards, and we grant awards to substantially all of our employees and non-employee directors. However, we recognize that equity incentive awards dilute existing stockholders, and, therefore, we must responsibly manage the growth of our equity compensation program.

We have managed our long-term stockholder dilution by limiting the number of equity incentive awards granted. The Board and the Compensation Committee of the Board, or the Compensation Committee, monitors our stock award burn rate and dilution, among other factors, in its efforts to maximize stockholders' value by granting what, in the Board's or Compensation Committee's judgment, are the appropriate number of equity incentive awards necessary to attract, reward, and retain employees, consultants and directors based on the Company's business plan and anticipated grants.

As of May 15, 2020, the record date for the Annual Meeting, the per-share closing price of our common stock as reported on the Nasdaq Capital Market was \$0.37, and there were 68,746,070 shares of our common stock outstanding. As of the record date, the 4,658,803 new shares we are asking for under the Amended 2018 Plan represent approximately 5.0% of our common stock issued and outstanding and issuable upon the exercise of outstanding pre-funded warrants and approximately 2.7% of our common stock, calculated on a fully-diluted basis and including for the purposes of such calculation: (i) the vesting and exercise, in full, of all outstanding stock awards and (ii) the exercise, in full, of all outstanding warrants to purchase common stock (disregarding any exercise limitations contained therein). If our stockholders do not approve this Proposal 2, the Company strongly believes that it will be unable to successfully use equity as part of its compensation program, as most of its competitors in the industry do, putting the Company at a significant disadvantage and compromising its ability to enhance stockholder value. Therefore, we believe that approval of this request is in the best interest of our stockholders and our Company.

If this Proposal 2 is approved by our stockholders, the Amended 2018 Plan will become effective as of the date of the Annual Meeting. In the event that our stockholders do not approve this Proposal 2, the Amended 2018 Plan will not become effective, and the 2018 Plan will continue to be effective in accordance with its current terms.

Description of the Amended 2018 Plan

The material features of the Amended 2018 Plan are outlined below. The following description of the Amended 2018 Plan is a summary only and is qualified in its entirety by reference to the complete text of the Amended 2018 Plan. Stockholders are urged to read the actual text of the Amended 2018 Plan in its entirety, a copy of which is attached to this Proxy Statement as **Appendix 12**.

Purpose

The Amended 2018 Plan is designed to secure and retain the services of our employees and directors, provide incentives for our employees and directors to exert maximum efforts for the success of the Company and its affiliates, and provide a means by which our employees and directors may be given an opportunity to benefit from increases in the value of our common stock.

Types of Awards

The Amended 2018 Plan provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance stock awards, performance cash awards and other stock awards.

Shares Available for Awards (before any adjustment to reflect the Reverse Stock Split)

Subject to adjustment for certain changes in our capitalization, including the Reverse Stock Split, and subject to increase pursuant to the annual "evergreen" provision described below, the aggregate number of shares of our common stock that may be issued under the Amended 2018 Plan, or the Share Reserve, will not exceed 6,158,257 shares, which is the sum of (i) 4,658,803 new shares, plus (ii) 1,000,000 shares originally added to the Share Reserve in connection with our adoption of the 2018 Plan, plus (iii) the number of shares that were otherwise available for future grants under the 2006 Plan as of the effectiveness of the 2018 Plan on August 21, 2018, that became available for the grant of stock awards under the 2018 Plan, plus (iv) the Prior Plan's Returning Shares (as defined below), as such shares become available from time to time.

The term "Prior Plan's Returning Shares" refers to the following shares of our common stock subject to any stock awards granted under the 2006 Plan that were outstanding as of August 21, 2018, the date of the underwriting agreement relating to our initial public offering, that thereafter (i) expire or terminate for any reason

prior to exercise or settlement; (ii) are forfeited because of the failure to meet a contingency or condition required to vest such shares or otherwise return to the Company; or (iii) are reacquired, withheld (or not issued) to satisfy a tax withholding obligation in connection with an award or to satisfy the purchase price or exercise price of a stock award.

The following shares of our common stock, or collectively, the 2018 Plan Returning Shares, will also become available again for issuance under the Amended 2018 Plan: (i) any shares subject to a stock award granted under the Amended 2018 Plan that are not issued because such stock award expires or otherwise terminates without all of the shares covered by such stock award having been issued; (ii) any shares subject to a stock award granted under the Amended 2018 Plan that are not issued because such stock award is settled in cash; (iii) any shares issued pursuant to a stock award granted under the Amended 2018 Plan that are forfeited back to or repurchased by us because of a failure to vest; and (iv) any shares used to pay the exercise price of a stock award or to satisfy the tax withholding obligations related to a stock award.

In addition, the Share Reserve contains an “evergreen” provision adopted at the time the 2018 Plan first became effective in connection with our initial public offering, that provides the Share Reserve will automatically increase on January 1st of each year following our initial public offering for a period of not more than ten years, commencing on January 1, 2019, and ending on (and including) January 1, 2028, in an amount equal to 5% of the total number of shares of capital stock outstanding on December 31st of the preceding calendar year. Notwithstanding the foregoing, the Plan Administrator may act prior to January 1st of a given year to provide that there will be no January 1st increase in the Share Reserve for such year or that the increase in the Share Reserve for such year will be a lesser number of shares of common stock than would otherwise occur pursuant to the preceding sentence. Pursuant to the “evergreen” provision, the Share Reserve was previously increased by 502,753 shares on January 1, 2019 and by 1,713,723 shares on January 1, 2020.

Eligibility

All of our (including our affiliates’) employees, consultants and non-employee directors are eligible to participate in the Amended 2018 Plan and may receive all types of awards other than incentive stock options. Incentive stock options may be granted under the Amended 2018 Plan only to our (including our affiliates’) employees.

As of May 15, 2020, we (including our affiliates) had 103 employees, three consultants and six non-employee directors.

Non-Employee Director Compensation Limit

Under the Amended 2018 Plan, the maximum number of shares of common stock subject to stock awards granted under the Amended 2018 Plan or otherwise during a single calendar year to any non-employee director, taken together with any cash fees paid by us to such non-employee director during such calendar year for service on the board of directors, will not exceed \$500,000 in total value (calculating the value of any such stock awards based on the grant date fair value of such stock awards for financial reporting purposes), or, with respect to the calendar year in which a non-employee director is first appointed or elected to the board of directors, \$800,000.

Administration

The Amended 2018 Plan will be administered by our Board, which may in turn delegate authority to administer the Amended 2018 Plan to a committee. Our Board has delegated concurrent authority to administer the Amended 2018 Plan to our Compensation Committee. Our Board and Compensation Committee are each considered to be a Plan Administrator for purposes of this Proposal 2.

Subject to the terms of the Amended 2018 Plan, the Plan Administrator may determine the recipients, the types of awards to be granted, the number of shares of our common subject to or the cash value of awards, and the terms and conditions of awards granted under the Amended 2018 Plan, including the period of their exercisability and vesting. The Plan Administrator also has the authority to provide for accelerated exercisability and vesting of awards. Subject to the limitations set forth below, the Plan Administrator also determines the fair market value applicable to a stock award and the exercise or strike price of stock options and stock appreciation rights granted under the Amended 2018 Plan.

Under the Amended 2018 Plan, the Plan Administrator has the authority to effect, with the consent of any adversely affected participant, the reduction of the exercise, purchase, or strike price of any outstanding award; the cancellation of any outstanding award and the grant in substitution therefore of other awards, cash, and/or other consideration; or any other action that is treated as a repricing under generally accepted accounting principles.

The Plan Administrator may also delegate to one or more officers the authority to designate employees who are not officers to be recipients of certain stock awards and the number of shares of our common stock subject to such stock awards. Under any such delegation, the Plan Administrator will specify the total number of shares of our common stock that may be subject to the stock awards granted by such officer. The officer may not grant a stock award to himself or herself.

Dividends and Dividend Equivalents

The Amended 2018 Plan provides that dividend equivalents may be credited with respect to any shares of our common stock subject to a restricted stock unit award, as determined by the Board and contained in the applicable award agreement; provided, however, that any dividend equivalents that are credited with respect to any such shares will be subject to all of the terms and conditions applicable to such shares under the terms of the applicable award agreement (including any vesting conditions). With respect to a restricted stock award, the award agreement may provide that any dividends paid will be subject to the same vesting and forfeiture restrictions as apply to the shares subject to the restricted stock award to which they relate.

Stock Options

Stock options may be granted under the Amended 2018 Plan pursuant to stock option agreements. The Amended 2018 Plan permits the grant of stock options that are intended to qualify as incentive stock options, or ISOs, and nonstatutory stock options, or NSOs.

The exercise price of a stock option granted under the Amended 2018 Plan may not be less than 100% of the fair market value of our common stock on the date of grant and, in some cases (see “Limitations on Incentive Stock Options” below), may not be less than 110% of such fair market value.

The term of stock options granted under the Amended 2018 Plan may not exceed ten years and, in some cases (see “Limitations on Incentive Stock Options” below), may not exceed five years. Except as otherwise provided in a participant’s stock option agreement or other written agreement with us or one of our affiliates, if a participant’s service relationship with us or any of our affiliates (referred to in this Proposal 2 as “continuous service”) terminates (other than for cause and other than upon the participant’s death or disability), the participant may exercise any vested stock options for up to three months following the participant’s termination of continuous service. Except as otherwise provided in a participant’s stock option agreement or other written agreement with us or one of our affiliates, if a participant’s continuous service terminates due to the participant’s disability or death (or the participant dies within a specified period, if any, following termination of continuous service), the participant, or his or her beneficiary, as applicable, may exercise any vested stock options for up to 12 months following the participant’s termination due to the participant’s disability or for up to 18 months following the participant’s death. Except as explicitly provided otherwise in a participant’s stock option agreement or other written agreement with us or one of our affiliates, if a participant’s continuous service is terminated for cause (as defined in the Amended 2018 Plan), all stock options held by the participant will terminate upon the participant’s termination of continuous service and the participant will be prohibited from exercising any stock option from and after such termination date. The term of a stock option may be extended if the exercise of the stock option following the participant’s termination of continuous service (other than for cause and other than upon the participant’s death or disability) would be prohibited by applicable securities laws or, unless otherwise provided in a participant’s stock option agreement, if the sale of any common stock received upon exercise of the stock option following the participant’s termination of continuous service (other than for cause) would violate our insider trading policy. In no event, however, may a stock option be exercised after its original expiration date.

Acceptable forms of consideration for the purchase of our common stock pursuant to the exercise of a stock option under the Amended 2018 Plan will be determined by the Plan Administrator and may include payment: (i) by cash, check, bank draft or money order payable to us; (ii) pursuant to a program developed under Regulation T promulgated by the Federal Reserve Board; (iii) by delivery to us of shares of our common stock (either by actual delivery or attestation); (iv) by a net exercise arrangement (for NSOs only); or (v) in other legal consideration approved by the Plan Administrator.

Stock options granted under the Amended 2018 Plan may vest and become exercisable in cumulative increments, as determined by the Plan Administrator at the rate specified in the stock option agreement. Shares covered by different stock options granted under the Amended 2018 Plan may be subject to different vesting schedules as the Plan Administrator may determine.

The Plan Administrator may impose limitations on the transferability of stock options granted under the Amended 2018 Plan in its discretion. Generally, a participant may not transfer a stock option granted under the Amended 2018 Plan other than by will or the laws of descent and distribution or, subject to approval by the Plan Administrator, pursuant to a domestic relations order or an official marital settlement agreement. However, the Plan Administrator may permit transfer of a stock option in a manner that is not prohibited by applicable tax and securities laws. In addition, subject to approval by the Plan Administrator, a participant may designate a beneficiary who may exercise the stock option following the participant's death.

Limitations on Incentive Stock Options

The aggregate fair market value, determined at the time of grant, of shares of our common stock with respect to ISOs that are exercisable for the first time by a participant during any calendar year under all of our stock plans may not exceed \$100,000. The stock options or portions of stock options that exceed this limit or otherwise fail to qualify as ISOs are treated as NSOs. No ISO may be granted to any person who, at the time of grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any affiliate unless the following conditions are satisfied:

- the exercise price of the ISO must be at least 110% of the fair market value of our common stock on the date of grant; and
- the term of the ISO must not exceed five years from the date of grant.

Subject to adjustment for certain changes in our capitalization, including the Reverse Stock Split, the aggregate maximum number of shares of our common stock that may be issued pursuant to the exercise of ISOs under the Amended 2018 Plan is 9,317,606 shares (before any adjustment to reflect the Reverse Stock Split).

Stock Appreciation Rights

Stock appreciation rights may be granted under the Amended 2018 Plan pursuant to stock appreciation right agreements. Each stock appreciation right is denominated in common stock share equivalents. The strike price of each stock appreciation right will be determined by the Plan Administrator, but will in no event be less than 100% of the fair market value of our common stock on the date of grant. The Plan Administrator may also impose restrictions or conditions upon the vesting of stock appreciation rights that it deems appropriate. The appreciation distribution payable upon exercise of a stock appreciation right may be paid in shares of our common stock, in cash, in a combination of cash and stock, or in any other form of consideration determined by the Plan Administrator and set forth in the stock appreciation right agreement. Stock appreciation rights will be subject to the same conditions upon termination of continuous service and restrictions on transfer as stock options under the Amended 2018 Plan.

Restricted Stock Awards

Restricted stock awards may be granted under the Amended 2018 Plan pursuant to restricted stock award agreements. A restricted stock award may be granted in consideration for cash, check, bank draft or money order payable to us, the participant's past or future services performed for us or any of our affiliates, or any other form of legal consideration acceptable to the Plan Administrator. Shares of our common stock acquired under a restricted stock award may be subject to forfeiture to or repurchase by us in accordance with a vesting schedule to be determined by the Plan Administrator. Rights to acquire shares of our common stock under a restricted stock award may be transferred only upon such terms and conditions as are set forth in the restricted stock award agreement. Upon a participant's termination of continuous service for any reason, any shares subject to restricted stock awards held by the participant that have not vested as of such termination date may be forfeited to or repurchased by us.

Restricted Stock Unit Awards

Restricted stock unit awards may be granted under the Amended 2018 Plan pursuant to restricted stock unit award agreements. Payment of any purchase price may be made in any form of legal consideration acceptable to the Plan Administrator. A restricted stock unit award may be settled by the delivery of shares of our common

stock, in cash, in a combination of cash and stock, or in any other form of consideration determined by the Plan Administrator and set forth in the restricted stock unit award agreement. Restricted stock unit awards may be subject to vesting in accordance with a vesting schedule to be determined by the Plan Administrator. Dividend equivalents may be credited in respect of shares of our common stock covered by a restricted stock unit award, provided that any additional shares credited by reason of such dividend equivalents will be subject to all of the same terms and conditions of the underlying restricted stock unit awards. Except as otherwise provided in a participant's restricted stock unit award agreement or other written agreement with us or one of our affiliates, restricted stock units that have not vested will be forfeited upon the participant's termination of continuous service for any reason.

Performance Awards

A performance stock award is a stock award that is payable (including that may be granted, may vest, or may be exercised) contingent upon the attainment of pre-determined performance goals during a performance period. A performance stock award may require the completion of a specified period of continuous service. The length of any performance period, the performance goals to be achieved during the performance period, and the measure of whether and to what degree such performance goals have been attained will be determined by the Plan Administrator. In addition, to the extent permitted by applicable law and the performance stock award agreement, the Plan Administrator may determine that cash may be used in payment of performance stock awards.

A performance cash award is a cash award that is payable contingent upon the attainment during a performance period of certain performance goals. A performance cash award may also require the completion of a specified period of continuous service. At the time of grant of a performance cash award, the length of any performance period, the performance goals to be achieved during the performance period, and the measure of whether and to what degree such performance goals have been attained will be conclusively determined by the Plan Administrator. The Plan Administrator may specify the form of payment of performance cash awards, which may be cash or other property, or may provide for a participant to have the option for his or her performance cash award, or such portion thereof as the Plan Administrator may specify, to be paid in whole or in part in cash or other property.

Performance goals under the Amended 2018 Plan will be based on any one or more of the following performance criteria: (i) sales; (ii) revenues; (iii) assets; (iv) expenses; (v) market penetration or expansion; (vi) earnings from operations; (vii) earnings before or after deduction for all or any portion of interest, taxes, depreciation, amortization, incentives, service fees or extraordinary or special items, whether or not on a continuing operations or an aggregate or per share basis; (viii) net income or net income per common share (basic or diluted); (ix) return on equity, investment, capital or assets; (x) one or more operating ratios; (xi) borrowing levels, leverage ratios or credit rating; (xii) market share; (xiii) capital expenditures; (xiv) cash flow, free cash flow, cash flow return on investment, or net cash provided by operations; (xv) stock price, dividends or total stockholder return; (xvi) development of new technologies or products; (xvii) sales of particular products or services; (xviii) economic value created or added; (xix) operating margin or profit margin; (xx) customer acquisition or retention; (xxi) raising or refinancing of capital; (xxii) successful hiring of key individuals; (xxiii) resolution of significant litigation; (xxiv) acquisitions and divestitures (in whole or in part); (xxv) joint ventures and strategic alliances; (xxvi) spin-offs, split-ups and the like; (xxvii) reorganizations; (xxviii) recapitalizations, restructurings, financings (issuance of debt or equity) or refinancings; (xxix) or strategic business criteria, consisting of one or more objectives based on the following goals: achievement of timely development, design management or enrollment, meeting specified market penetration or value added, payor acceptance, patient adherence, peer reviewed publications, issuance of new patents, establishment of or securing of licenses to intellectual property, product development or introduction (including, without limitation, discovery of novel products, maintenance of multiple products in pipeline, product launch or other product development milestones), geographic business expansion, cost targets, cost reductions or savings, customer satisfaction, operating efficiency, acquisition or retention, employee satisfaction, information technology, corporate development (including, without limitation, licenses, innovation, research or establishment of third party collaborations), manufacturing or process development, legal compliance or risk reduction, patent application or issuance goals, or goals relating to acquisitions, divestitures or other business combinations (in whole or in part), joint ventures or strategic alliances; and (xxx) other measures of performance selected by the Plan Administrator.

Performance goals may be based on a company-wide basis, with respect to one or more business units, divisions, affiliates or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Our Plan Administrator is authorized at any time in its sole discretion, to adjust or modify the calculation of a performance goal for such performance period in order to prevent the dilution or enlargement of the rights of participants, (a) in the event of, or in anticipation of, any unusual or extraordinary corporate item, transaction, event or development; (b) in recognition of, or in anticipation of, any other unusual or nonrecurring events affecting the Company, or the financial statements of the Company in response to, or in anticipation of, changes in applicable laws, regulations, accounting principles, or business conditions; or (c) in view of the Plan Administrator's assessment of the business strategy of the Company, performance of comparable organizations, economic and business conditions, and any other circumstances deemed relevant. Specifically, the Plan Administrator is authorized to make adjustment in the method of calculating attainment of performance goals and objectives for a performance period as follows: (i) to exclude the dilutive effects of acquisitions or joint ventures; (ii) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a performance period following such divestiture; and (iii) to exclude the effect of any change in the outstanding shares of common stock of the Company by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends. In addition, the Plan Administrator is authorized to make adjustment in the method of calculating attainment of performance goals and objectives for a performance period as follows: (i) to exclude restructuring and/or other nonrecurring charges; (ii) to exclude exchange rate effects, as applicable, for non-U.S. dollar denominated net sales and operating earnings; (iii) to exclude the effects of changes to generally accepted accounting standards required by the Financial Accounting Standards Board; (iv) to exclude the effects of any items that are "unusual" in nature or occur "infrequently" as determined under generally accepted accounting principles; (v) to exclude the effects to any statutory adjustments to corporate tax rates; and (vi) to make other appropriate adjustments selected by the Plan Administrator.

In addition, the Plan Administrator retains the discretion to adjust or eliminate the compensation or economic benefit due upon the attainment of any performance goals and to define the manner of calculating the performance criteria it selects to use for a performance period.

Other Stock Awards

Other forms of stock awards valued in whole or in part by reference to, or otherwise based on, our common stock may be granted either alone or in addition to other stock awards under the Amended 2018 Plan. Subject to the terms of the Amended 2018 Plan, the Plan Administrator will have sole and complete authority to determine the persons to whom and the time or times at which such other stock awards will be granted, the number of shares of our common stock to be granted and all other terms and conditions of such other stock awards.

Clawback Policy

Awards granted under the Amended 2018 Plan will be subject to recoupment in accordance with any clawback policy adopted by the Board or Compensation Committee, and with any other clawback policy that we are required to adopt pursuant to the listing standards of any national securities exchange or association on which our securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Plan Administrator may impose other clawback, recovery or recoupment provisions in an award agreement, including a reacquisition right in respect of previously acquired shares or other cash or property upon the occurrence of cause.

Changes to Capital Structure

In the event of certain capitalization adjustments, including the Reverse Stock Split, the Plan Administrator will appropriately adjust: (i) the class(es) and maximum number of securities subject to the Amended 2018 Plan; (ii) the class(es) and maximum number of securities by which the share reserve is to increase automatically each year; (iii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of ISOs; and (iv) the class(es) and number of securities and price per share of stock subject to outstanding stock awards.

Corporate Transaction and Change in Control

In the event of a corporate transaction (as defined in the Amended 2018 Plan and described below) or a change in control (as defined in the Amended 2018 Plan and described below), the Plan Administrator may take one or more of the following actions with respect to stock awards, contingent upon the closing or consummation of the transaction, unless otherwise provided in the instrument evidencing the stock award or in any other written agreement between us or one of our affiliates and the participant, or unless otherwise provided by the Plan Administrator at the time of grant of the stock award. For purposes of this Proposal 2, the term “transaction” will mean such corporate transaction or change in control.

- arrange for the surviving or acquiring corporation (or its parent company) to assume or continue the stock award or to substitute a similar stock award for the stock award (including an award to acquire the same consideration paid to our stockholders pursuant to the transaction);
- arrange for the assignment of any reacquisition or repurchase rights held by us in respect of our common stock issued pursuant to the stock award to the surviving or acquiring corporation (or its parent company);
- accelerate the vesting (and, if applicable, the exercisability) of the stock award to a date prior to the effective time of the transaction as determined by the Plan Administrator (or, if the Plan Administrator does not determine such a date, to the date that is five days prior to the effective date of the transaction), with the stock award terminating if not exercised (if applicable) at or prior to the effective time of the transaction; provided, however, that the Plan Administrator may require participants to complete and deliver to us a notice of exercise before the effective date of a transaction, which is contingent upon the effectiveness of the transaction;
- arrange for the lapse of any reacquisition or repurchase rights held by us with respect to the stock award;
- cancel or arrange for the cancellation of the stock award, to the extent not vested or not exercised prior to the effective time of the transaction, in exchange for such cash consideration, if any, as the Plan Administrator may consider appropriate; and
- make a payment, in such form as may be determined by the Plan Administrator equal to the excess, if any, of (i) the value of the property the participant would have received upon the exercise of the stock award immediately prior to the effective time of the transaction, over (ii) any exercise price payable in connection with such exercise, provided that payments may be delayed to the same extent that payment of consideration to the holders of our common stock is delayed as a result of escrows, earn outs, holdbacks or any other contingencies.

The Plan Administrator is not required to take the same action with respect to all stock awards or portions of stock awards or with respect to all participants. The Plan Administrator may take different actions with respect to the vested and unvested portions of a stock award.

Outstanding awards under the Amended 2018 Plan may be subject to additional acceleration of vesting and exercisability upon or after a change in control as may be provided in the participant’s award agreement, in any other written agreement with us or one of our affiliates, but in the absence of such provision, no such acceleration will automatically occur.

For purposes of the Amended 2018 Plan, a corporate transaction generally will be deemed to occur in the event of the consummation of: (i) a sale or other disposition of all or substantially all of our consolidated assets; (ii) a sale or other disposition of at least 50% of our outstanding securities; (iii) a merger, consolidation or similar transaction following which we are not the surviving corporation; or (iv) a merger, consolidation or similar transaction following which we are the surviving corporation but the shares of our common stock outstanding immediately prior to the transaction are converted or exchanged into other property by virtue of the transaction.

For purposes of the Amended 2018 Plan, a change in control generally will be deemed to occur in the event: (i) a person, entity or group acquires, directly or indirectly, our securities representing more than 50% of the combined voting power of our then outstanding securities, other than by virtue of a merger, consolidation, or similar transaction; (ii) there is consummated a merger, consolidation, or similar transaction and, immediately

after the consummation of such transaction, our stockholders immediately prior thereto do not own, directly or indirectly, more than 50% of the combined outstanding voting power of the surviving entity or the parent of the surviving entity in substantially the same proportions as their ownership of our outstanding voting securities immediately prior to such transaction; (iii) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of our consolidated assets, other than a sale, lease, license or other disposition to an entity in which more than 50% of the entity's combined voting power is owned by our stockholders in substantially the same proportions as their ownership of our outstanding voting securities immediately prior to such sale or other disposition; (iv) a complete dissolution or liquidation of the Company; or (v) when a majority of our Board becomes comprised of individuals who were not serving on our Board on the date of the underwriting agreement relating to our initial public offering, or the incumbent board, or whose nomination, appointment, or election was not approved by a majority of the incumbent board still in office.

Plan Amendments and Termination

The Plan Administrator may amend or terminate the Amended 2018 Plan at any time. However, except as otherwise provided in the Amended 2018 Plan or an award agreement, no amendment or termination of the Amended 2018 Plan may materially impair a participant's rights under his or her outstanding awards without the participant's written consent. We will obtain stockholder approval of any amendment to the Amended 2018 Plan as required by applicable law and listing requirements. No ISOs may be granted under the Amended 2018 Plan after the tenth anniversary of the date the 2018 Plan was adopted by the Board.

U.S. Federal Income Tax Consequences

The following is a summary of the principal United States federal income tax consequences to participants and us with respect to participation in the Amended 2018 Plan. This summary is not intended to be exhaustive and does not discuss the income tax laws of any local, state or foreign jurisdiction in which a participant may reside. The information is based upon current federal income tax rules and therefore is subject to change when those rules change. Because the tax consequences to any participant may depend on his or her particular situation, each participant should consult the participant's tax adviser regarding the federal, state, local and other tax consequences of the grant or exercise of an award or the disposition of stock acquired under the Amended 2018 Plan. The Amended 2018 Plan is not qualified under the provisions of Section 401(a) of the Internal Revenue Code of 1986, as amended, or the Code, and is not subject to any of the provisions of the Employee Retirement Income Security Act of 1974. Our ability to realize the benefit of any tax deductions described below depends on our generation of taxable income as well as the requirement of reasonableness, the provisions of Section 162(m) of the Code and the satisfaction of our tax reporting obligations.

Nonstatutory Stock Options

Generally, there is no taxation upon the grant of an NSO if the stock option is granted with an exercise price equal to the fair market value of the underlying stock on the grant date. Upon exercise, a participant will recognize ordinary income equal to the excess, if any, of the fair market value of the underlying stock on the date of exercise of the stock option over the exercise price. If the participant is employed by us or one of our affiliates, that income will be subject to withholding taxes. The participant's tax basis in those shares will be equal to their fair market value on the date of exercise of the stock option, and the participant's capital gain holding period for those shares will begin on that date.

Subject to the requirement of reasonableness, the provisions of Section 162(m) of the Code and the satisfaction of our tax reporting obligation, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the participant.

Incentive Stock Options

The Amended 2018 Plan provides for the grant of stock options that are intended to qualify as "incentive stock options," as defined in Section 422 of the Code. Under the Code, a participant generally is not subject to ordinary income tax upon the grant or exercise of an ISO. If the participant holds a share received upon exercise of an ISO for more than two years from the date the stock option was granted and more than one year from the date the stock option was exercised, which is referred to as the required holding period, the difference, if any, between the amount realized on a sale or other taxable disposition of that share and the participant's tax basis in that share will be long-term capital gain or loss.

If, however, a participant disposes of a share acquired upon exercise of an ISO before the end of the required holding period, which is referred to as a disqualifying disposition, the participant generally will recognize ordinary income in the year of the disqualifying disposition equal to the excess, if any, of the fair market value of the share on the date of exercise of the stock option over the exercise price. However, if the sales proceeds are less than the fair market value of the share on the date of exercise of the stock option, the amount of ordinary income recognized by the participant will not exceed the gain, if any, realized on the sale. If the amount realized on a disqualifying disposition exceeds the fair market value of the share on the date of exercise of the stock option, that excess will be short-term or long-term capital gain, depending on whether the holding period for the share exceeds one year.

For purposes of the alternative minimum tax, the amount by which the fair market value of a share of stock acquired upon exercise of an ISO exceeds the exercise price of the stock option generally will be an adjustment included in the participant's alternative minimum taxable income for the year in which the stock option is exercised. If, however, there is a disqualifying disposition of the share in the year in which the stock option is exercised, there will be no adjustment for alternative minimum tax purposes with respect to that share. In computing alternative minimum taxable income, the tax basis of a share acquired upon exercise of an ISO is increased by the amount of the adjustment taken into account with respect to that share for alternative minimum tax purposes in the year the stock option is exercised.

We are not allowed a tax deduction with respect to the grant or exercise of an ISO or the disposition of a share acquired upon exercise of an ISO after the required holding period. If there is a disqualifying disposition of a share, however, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the participant, subject to the requirement of reasonableness and the provisions of Section 162(m) of the Code, and provided that either the employee includes that amount in income or we timely satisfy our reporting requirements with respect to that amount.

Restricted Stock Awards

Generally, the recipient of a restricted stock award will recognize ordinary income at the time the stock is received equal to the excess, if any, of the fair market value of the stock received over any amount paid by the recipient in exchange for the stock. If, however, the stock is not vested when it is received (for example, if the employee is required to work for a period of time in order to have the right to sell the stock), the recipient generally will not recognize income until the stock becomes vested, at which time the recipient will recognize ordinary income equal to the excess, if any, of the fair market value of the stock on the date it becomes vested over any amount paid by the recipient in exchange for the stock. A recipient may, however, file an election with the Internal Revenue Service, within 30 days following his or her receipt of the stock award, to recognize ordinary income, as of the date the recipient receives the award, equal to the excess, if any, of the fair market value of the stock on the date the award is granted over any amount paid by the recipient for the stock.

The recipient's basis for the determination of gain or loss upon the subsequent disposition of shares acquired from a restricted stock award will be the amount paid for such shares plus any ordinary income recognized either when the stock is received or when the stock becomes vested.

Subject to the requirement of reasonableness, the provisions of Section 162(m) of the Code and the satisfaction of our tax reporting obligation, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the recipient of the restricted stock award.

Restricted Stock Unit Awards

Generally, the recipient of a restricted stock unit award structured to comply with the requirements of Section 409A of the Code or an exemption to Section 409A of the Code will recognize ordinary income at the time the stock is delivered equal to the excess, if any, of the fair market value of the stock received over any amount paid by the recipient in exchange for the stock. To comply with the requirements of Section 409A of the Code, the stock subject to a restricted stock unit award may generally only be delivered upon one of the following events: a fixed calendar date (or dates), separation from service, death, disability or a change in control. If delivery occurs on another date, unless the restricted stock unit award otherwise complies with or qualifies for an exemption to the requirements of Section 409A of the Code, in addition to the tax treatment described above, the recipient will owe an additional 20% federal tax and interest on any taxes owed.

The recipient's basis for the determination of gain or loss upon the subsequent disposition of shares acquired from a restricted stock unit award will be the amount paid for such shares plus any ordinary income recognized when the stock is delivered.

Subject to the requirement of reasonableness, the provisions of Section 162(m) of the Code and the satisfaction of our tax reporting obligation, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the recipient of the restricted stock unit award.

Stock Appreciation Rights

Generally, if a stock appreciation right is granted with an exercise price equal to the fair market value of the underlying stock on the grant date, the recipient will recognize ordinary income equal to the fair market value of the stock or cash received upon such exercise. Subject to the requirement of reasonableness, the provisions of Section 162(m) of the Code, and the satisfaction of our tax reporting obligation, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the recipient of the stock appreciation right.

Section 162(m) Limitations

Under Section 162(m) of the Code, or Section 162(m), compensation paid to any publicly held corporation's "covered employees" that exceeds \$1 million per taxable year for any covered employee is generally non-deductible.

However, Section 162(m) provides a reliance period exception for corporations that became publicly held before December 20, 2019, pursuant to which the deduction limit under Section 162(m) does not apply to certain compensation paid (or in some cases, granted) pursuant to a plan or agreement that existed during the period in which the corporation was not publicly held, subject to certain requirements and limitations. Under Section 162(m), this reliance period ends upon the earliest of the following: (i) the expiration of the plan or agreement; (ii) the material modification of the plan or agreement; (iii) the issuance of all employer stock and other compensation that has been allocated under the plan; or (iv) the first meeting of stockholders at which directors are to be elected that occurs after the close of the third calendar year following the calendar year in which the corporation's initial public offering occurs. However, the reliance period exception under Section 162(m) may be repealed or modified in the future as a result of certain changes that were made to Section 162(m) pursuant to the Tax Cuts and Jobs Act.

In addition, prior to the enactment of the Tax Cuts and Jobs Act, Section 162(m) provided a performance-based compensation exception, pursuant to which the deduction limit under Section 162(m) did not apply to any compensation that qualified as "performance-based compensation" under Section 162(m). Pursuant to the Tax Cuts and Jobs Act, the performance-based compensation exception under Section 162(m) was repealed with respect to taxable years beginning after December 31, 2017, except that certain transition relief is provided for compensation paid pursuant to a written binding contract which was in effect on November 2, 2017 and which is not modified in any material respect on or after such date.

Compensation paid to each of the Company's "covered employees" in excess of \$1 million per taxable year generally will not be deductible unless it qualifies for (i) the reliance period exception under Section 162(m) or (ii) the performance-based compensation exception under Section 162(m) pursuant to the transition relief described above. Because of certain ambiguities and uncertainties as to the application and interpretation of Section 162(m), as well as other factors beyond the control of the Compensation Committee, no assurance can be given that any compensation paid by the Company will qualify for the reliance period exception under Section 162(m) or will be eligible for such transition relief and be deductible by the Company in the future. However, stock awards granted under the Amended 2018 Plan will be subject to the deduction limit under Section 162(m) of the Code and will not be eligible to qualify for the reliance period exception or the performance-based compensation exception under Section 162(m) of the Code pursuant to the transition relief provided by the Tax Cuts and Jobs Act. Although the Compensation Committee will continue to consider tax implications as one factor in determining executive compensation, the Compensation Committee also looks at other factors in making its decisions and retains the flexibility to provide compensation for the Company's named executive officers in a manner consistent with the goals of the Company's executive compensation program and the best interests of the Company and its stockholders, which may include providing for

compensation that is not deductible by the Company due to the deduction limit under Section 162(m). The Compensation Committee also retains the flexibility to modify compensation that was initially intended to be exempt from the deduction limit under Section 162(m) if it determines that such modifications are consistent with the Company's business needs.

Awards Granted Under the 2018 Plan

The following table sets forth, for each of the individuals and various groups indicated, the total number of shares of our common stock subject to awards that have been granted under the 2018 Plan as of May 15, 2020.

2018 Plan		
Name and Position		Number of Shares
R. Erik Holmlin, Ph.D. <i>Chief Executive Officer</i>		691,540
Mike Ward ⁽¹⁾ <i>Former Chief Financial Officer</i>		119,590
Warren Robinson <i>Chief Commercial Officer</i>		244,640
Mark Oldakowski <i>Chief Operating Officer</i>		239,590
All current executive officers as a group (3 persons)		1,175,770
All current directors who are not executive officers as a group (6 persons)		289,401
Each nominee for election as a director (3 persons)		
Albert Luderer, Ph.D.		32,427
Kristiina Vuori, M.D., Ph.D.		30,274
Hannah Mamuszka		80,923
Each associate of any director, executive officer or nominee		—
Each other person who received or is to receive 5% of awards		—
All employees, including all current officers who are not executive officers, as a group (93 persons)		1,098,517

(1) Mr. Ward terminated services with us effective December 6, 2019.

New Plan Benefits under Amended 2018 Plan

The following table sets forth the benefits or amounts that will be received by or allocated to each of the individuals and groups indicated below under the Amended 2018 Plan, if such benefits or amounts are determinable.

New Plan Benefits under Amended 2018 Plan		
Name and Position	Dollar Value	Number of Shares
R. Erik Holmlin, Ph.D. <i>Chief Executive Officer</i>	(1)	(1)
Mike Ward <i>Former Chief Financial Officer</i>	(1)	(1)
Warren Robinson <i>Chief Commercial Officer</i>	(1)	(1)
Mark Oldakowski <i>Chief Operating Officer</i>	(1)	(1)
All current executive officers as a group (3 persons)	(1)	(1)
All current directors who are not executive officers as a group (6 persons)	(2)(3)	(2)(3)
All employees, including all current officers who are not executive officers, as a group (93 persons)	(1)	(1)

(1) Awards granted under the Amended 2018 Plan to our executive officers and other employees are discretionary and are not subject to set benefits or amounts under the terms of the Amended 2018 Plan. Accordingly, the benefits or amounts that will be received by or allocated to our executive officers and other employees under the Amended 2018 Plan are not determinable.

- (2) Awards granted under the Amended 2018 Plan to our non-employee directors are discretionary and are not subject to set benefits or amounts under the terms of the Amended 2018 Plan. However, pursuant to our current compensation policy for non-employee directors, each of our continuing non-employee directors is eligible to receive an annual grant of a stock option to purchase common stock with a Black-Scholes option value of \$35,000 on the date of our annual meeting. Such options will be granted under the Amended 2018 Plan if this Proposal 2 is approved by our stockholders. For additional information regarding our current compensation policy for non-employee directors, please refer to the section titled “Director Compensation.” The actual value realized upon exercise of an option will depend on the excess, if any, of the stock price over the exercise prices on the date of exercise.
- (3) In response to the COVID-19 pandemic, and upon recommendation of the Compensation Committee, the Compensation Committee of the Board approved a temporary modification to our non-employee director compensation policy such that, effective April 22, 2020 through December 31, 2020, the price of our common stock to be used for the Black-Scholes calculation discussed above shall be the greater of (i) \$1.04 (the closing price of our common stock on February 18, 2020, the most recent date on which we granted stock options with an exercise price not substantially affected by the impacts of the COVID-19 pandemic on our stock price) and (ii) the closing price of our common stock on the date of grant. For additional information regarding our current compensation policy for non-employee directors, please refer to the section titled “Director Compensation.”

Vote Required

The affirmative vote of the holders of a majority of shares present by virtual attendance at the Annual Meeting or represented by proxy and entitled to vote on the proposal will be required to approve this Proposal 2. Abstentions will have the same effect as “Against” votes. Broker non-votes are counted towards a quorum but are not counted for any purpose in determining whether this Proposal 2 has been approved.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE “FOR” THE EQUITY INCENTIVE PLAN PROPOSAL.

ELECTION OF DIRECTORS

The Board is divided into three classes. Each class consists, as nearly as possible, of one-third of the total number of directors, and each class has a three-year term. Vacancies on the Board may be filled only by persons elected by a majority of the remaining directors. A director elected by the Board to fill a vacancy in a class, including vacancies created by an increase in the number of directors, shall serve for the remainder of the full term of that class and until the director's successor is duly elected and qualified.

The Board presently has seven members. There are three Class II directors whose term of office expires in 2020: Albert Luderer, Ph.D., Kristiina Vuori, M.D., Ph.D. and Hannah Mamuszka. Proxies may not be voted for a greater number of persons than the number of nominees named in this proxy statement. Dr. Ludere, Dr. Vuori and Ms. Mamuszka, each current directors of the Company, were each recommended for nomination to the Board at the Annual Meeting by the Nominating and Corporate Governance Committee of the Board. If elected at the Annual Meeting, each of these nominees would serve until the 2023 Annual Meeting of Stockholders and until his or her successor has been duly elected and qualified, or, if sooner, until the director's death, resignation or removal.

Vote Required

Directors are elected by a plurality of the votes of the holders of shares present by virtual attendance at the Annual Meeting or represented by proxy and entitled to vote on the election of directors. Accordingly, the three nominees receiving the highest number of affirmative votes will be elected. Shares represented by executed proxies will be voted, if authority to do so is not withheld, for the election of Dr. Luderer, Dr. Vuori and Ms. Mamuszka. If any nominee becomes unavailable for election as a result of an unexpected occurrence, shares that would have been voted for that nominee will instead be voted for the election of a substitute nominee proposed by the Company. Each of Dr. Luderer, Dr. Vuori and Ms. Mamuszka has agreed to serve if elected. The Company's management has no reason to believe that any nominee will be unable to serve.

NOMINEES

The Nominating and Corporate Governance Committee seeks to assemble a board that, as a whole, possesses the appropriate balance of professional and industry knowledge, financial expertise and high-level management experience necessary to oversee and direct the Company's business. To that end, the Nominating and Corporate Governance Committee has identified and evaluated nominees in the broader context of the Board's overall composition, with the goal of recruiting members who complement and strengthen the skills of other members and who also exhibit integrity, collegiality, sound business judgment and other qualities that the Nominating and Corporate Governance Committee views as critical to the effective functioning of the Board. To provide a mix of experience and perspective on the Board, the Nominating and Corporate Governance Committee also takes into account geographic, gender, age, and ethnic diversity. The brief biographies below include information, as of the date of this proxy statement, regarding the specific and particular experience, qualifications, attributes or skills of each director or nominee that led the Nominating and Corporate Governance Committee to recommend that nominee should he or she continue to serve on the Board. However, each of the members of the Nominating and Corporate Governance Committee may have a variety of reasons why he believes a particular person would be an appropriate nominee for the Board, and these views may differ from the views of other members.

The following table sets forth, for the Class II nominees and our other directors who will continue in office after the Annual Meeting, their ages and position/office held with us as of the date of this proxy statement:

Name	Age	Position/Office Held With Bionano
<i>Class I directors, whose terms will expire at the 2022 annual meeting of stockholders</i>		
R. Erik Holmlin, Ph.D.	52	President, Chief Executive Officer and Director
David L. Barker, Ph.D. ⁽¹⁾⁽²⁾	79	Chairman, Director
<i>Class II directors for election at the Annual Meeting</i>		
Albert Luderer, Ph.D. ⁽²⁾⁽³⁾	71	Director
Kristiina Vuori, M.D., Ph.D. ⁽¹⁾⁽³⁾	52	Director
Hannah Mamuszka	43	Director
<i>Class III directors, whose terms will expire at the 2021 annual meeting of stockholders</i>		
Christopher Twomey ⁽²⁾	60	Director
Yvonne Linney, Ph.D.	58	Director

(1) Member of the Compensation Committee of the Board (the "Compensation Committee")

(2) Member of the Audit Committee of the Board (the "Audit Committee")

(3) Member of the Nominating and Corporate Governance Committee of the Board (the "Nominating and Corporate Governance Committee")

Set forth below is biographical information for the nominees and each person whose term of office as a director will continue after the Annual Meeting. This includes information regarding each director's experience, qualifications, attributes or skills that led our Board to recommend them for board service.

CLASS II DIRECTOR NOMINEES FOR ELECTION FOR A THREE-YEAR TERM EXPIRING AT THE 2023 ANNUAL MEETING

Albert Luderer, Ph.D. Dr. Luderer has served on our board of directors since October 2011. Dr. Luderer currently serves as the Chief Executive Officer and a member of the board of directors of Indi Molecular, Inc., a synthetic antibody technology company, and as the Executive Chairman of the board of directors of Prostate Management Diagnostics Inc. Dr. Luderer has over 30 years of experience in executive leadership roles in the areas of technology development, operations and business development. Dr. Luderer received his bachelor's degree in zoology from Drew University and his MS in immunochemistry and Ph.D. in immunogenics from Rutgers University.

Our Nominating and Corporate Governance Committee and Board believe that Dr. Luderer's experience in the biotechnology sector, with special focuses on technology, business development and commercialization, qualifies him to serve as a member of our Board.

Kristiina Vuori, M.D., Ph.D. Dr. Vuori has served on our board of directors since May 2019. Since January 2010, Dr. Vuori has served as President of Sanford Burnham Prebys Medical Discovery Institute, or the Institute, a non-profit research organization with major research programs in cancer, neurodegeneration, diabetes, and infectious, inflammatory, and childhood diseases. In addition, Dr. Vuori has also held the Pauline and Stanley Foster Presidential Chair at the Institute since January 2010 and served as the Institute's interim Chief Executive Officer from January 2013 to September 2014, and from September 2017 to present. Since January 1995, Dr. Vuori has served as a Professor at the Institute's National Cancer Institute designated Cancer Center, an interdisciplinary basic and translational research effort mobilizing over 400 scientists. In addition, from July 2014 to September 2017, Dr. Vuori served on the board of directors of WebMD, and she serves or has served in the past five years on the boards of directors of the American Association for Cancer Research, the California Institute for Regenerative Medicine, and the California Breast Cancer Research Council. Dr. Vuori earned her M.D. and Ph.D. from the University of Oulu, Finland.

Our Nominating and Corporate Governance Committee and Board believe that Dr. Vuori's experience in biomedical research and as an educator of research scientists, her experience managing a large non-profit research organization, and her various leadership roles qualify her to serve on our Board.

Hannah Mamuszka. Ms. Mamuszka has served on our board of directors since May 2020. Since March 2016, Ms. Mamuszka has served as Founder and Chief Executive Officer of Alva10, a company focused on creating partnerships between health insurance payors and diagnostic companies. Ms. Mamuszka also served as an Executive Director of Precision Care Alliance, a non-profit focused on policy reform to enable diagnostic development, from April 2019 to May 2020. Additionally, from December 2010 to June 2015, she served as Vice President of Business Development and Clinical Strategy at Exosome Diagnostics, Inc., a private company developing liquid biopsy tests. Prior to joining Exosome, Ms. Mamuszka served as Director of Strategic Business Development, Companion Diagnostics at Asuragen, Inc., a private company focused on diagnostics and therapeutics. From January 2005 to January 2010, Ms. Mamuszka served in various director level positions, most recently as Global Director for Pharmaceutical Services, at Oncotech Inc., then by acquisition, at Exiqon A/S. Ms. Mamuszka has previously held various laboratory positions at ArQule, Inc., Millennium Pharmaceuticals Inc., Organogenesis, Inc. and the National Cancer Institute. Ms. Mamuszka received her BS in neurobiology and physiology from the University of Maryland at College Park and her MS in molecular biology from Harvard University.

Our Nominating and Corporate Governance Committee and Board believe that Ms. Mamuszka's over 20 years of experience in the life sciences industry, extensive experience with diagnostics and various leadership roles qualify her to serve as a member of our Board.

**THE BOARD OF DIRECTORS RECOMMENDS
A VOTE "FOR" EACH NAMED NOMINEE FOR THE DIRECTOR ELECTION PROPOSAL.**

CLASS I DIRECTORS CONTINUING IN OFFICE UNTIL THE 2022 ANNUAL MEETING

R. Erik Holmlin, Ph.D. Dr. Holmlin has served as our President and Chief Executive Officer and as a member of our board of directors since January 2011. From June 2010 to February 2011, Dr. Holmlin served as president and Chief Executive Officer of GenVault Corporation, a private biosample management solutions company. Previously, Dr. Holmlin held positions as an entrepreneur in residence at Domain Associates, a dedicated life sciences venture capital firm; Chief Commercial Officer of Exiqon A/S, a publicly traded RNA research solutions company; founder and executive at GeneOhm Sciences, which was acquired by Becton Dickinson and Company; and a National Institutes of Health postdoctoral fellow at Harvard University. Until June 2016, Dr. Holmlin served as a director of Nanosphere, Inc., a publicly traded molecular diagnostic company, which was subsequently acquired by Luminex Corporation, a publicly traded biological testing company. Dr. Holmlin received his bachelor's degree in chemistry from Occidental College, his Ph.D. in chemistry from the California Institute of Technology and MBAs from University of California, Berkeley and Columbia University.

Our Nominating and Corporate Governance Committee and Board believe that Dr. Holmlin's over 17 years of experience in the life sciences and healthcare industries, which includes the areas of technology development, product commercialization and venture financing, qualifies him to serve on our board of directors.

David L. Barker, Ph.D. Dr. Barker has served on our board of directors since May 2010, and as Chairman of our board of directors since August 2016. Dr. Barker also serves as a member of the board of directors of AmideBio, Singular Genomics Systems, Symbiotic Systems, and Aspen Neuroscience. He is also a scientific advisor to MiNDERA Corp. and Luna DNA. He served as Vice President and Chief Scientific Officer at Illumina, Inc., from 2000 to 2007, and on the Illumina scientific advisory board until May 2016. He was previously on the Boards of NextBio, which was acquired by Illumina in 2013, ProteinSimple, which was acquired by Bio-Techne in 2014, Zephyrus Biosciences, Inc., acquired by Bio-Techne in 2016, IntegenX, acquired by Thermo Fisher Scientific in 2018, and Integrated Diagnostics, acquired by Biodesix in 2018. Dr. Barker served from 1998 to 2000 as Vice President and Chief Science Advisor at Amersham Biosciences, now part of General Electric. From 1988 to 1998, Dr. Barker held senior positions, including Vice President of Research and Business Development, at Molecular Dynamics, Inc., until the acquisition of Molecular Dynamics by Amersham. In his academic career, Dr. Barker conducted interdisciplinary research in neurobiology as a postdoctoral fellow at Harvard Medical School, Assistant Professor at the University of Oregon and Associate Professor at Oregon State University. Dr. Barker holds a BS with honors in Chemistry from the California Institute of Technology and a Ph.D. in Biochemistry from Brandeis University.

Our Nominating and Corporate Governance Committee and Board believe that Dr. Barker's extensive experience in managing and leading early stage and established companies within the clinical diagnostic and biotechnology industries qualifies him to serve as a member of our Board.

CLASS III DIRECTORS CONTINUING IN OFFICE UNTIL THE 2021 ANNUAL MEETING

Christopher J. Twomey. Mr. Twomey has served on our board of directors since July 2018. Since August 2013, Mr. Twomey has served as a director and Chairman of the Audit Committee of Tandem Diabetes Care, Inc., a medical device company. From March 1990 to June 2007, Mr. Twomey served in various roles, including as Senior Vice President, Finance and Chief Financial Officer, at Biosite Incorporated, a medical diagnostics company. From October 1981 to March 1990, Mr. Twomey served as an audit manager for Ernst & Young, LLP. From March 2006 to November 2018, Mr. Twomey served as a director of Senomyx, Inc., a taste technologies company that was acquired by Firmenich in November 2018. From July 2006 to March 2014, Mr. Twomey also served as a director and Chairman of the Audit Committee of Cadence Pharmaceuticals, Inc., a specialty pharmaceutical company that was acquired by Mallinckrodt plc in 2014. Mr. Twomey received his bachelors degree in Business Economics from the University of California at Santa Barbara.

Our Nominating and Corporate Governance Committee and Board believe that Mr. Twomey's substantial leadership skills and expertise in accounting and financial reporting qualifies him to serve as a member of our Board, and that such skills are especially valuable in his role as Chairman of our Audit Committee.

Yvonne Linney, Ph.D. Dr. Linney has served on our board of directors since May 2020. Since January 2019, Dr. Linney has served as Principal at Linney BioConsulting, an advisory and strategy development firm in the life sciences industry. Dr. Linney has served as a strategic advisor to General Automation Laboratory Technologies Inc. (GALT) since November 2019, SRI International since June 2019, the California Life Sciences

Institute since March 2019, and to Tag.bio, Inc. since January 2019. From January 2017 to November 2018, Dr. Linney served as the Chief Executive Officer of Transcriptic Inc. (now Strateos, Inc.), a private company that developed a robotic cloud laboratory platform, where she had previously served as Chief Operating Officer since October 2015. Dr. Linney also served on Transcriptic's Board of Directors from December 2016 to November 2018. In addition, from November 2006 to January 2015, Dr. Linney served as Executive Vice President and General Manager, Life Sciences at Agilent Technologies, Inc., a public life sciences and diagnostics company. Prior to joining Agilent, Dr. Linney served as Director of Molecular Diagnostics and Global Strategic Marketing at Bayer Diagnostics (now part of Siemens Healthcare) from 2005 to 2006 and Senior Director, Marketing and Product Management at Caliper Life Sciences from 2003 to 2005. Dr. Linney also served as Director of Genomics at Amersham International (now GE Healthcare) from 1993 to 2003. Dr. Linney holds a BS in microbiology and virology from Warwick University, UK, and a Ph.D. in genetics from Leicester University, UK.

Our Nominating and Corporate Governance Committee and Board believe that Dr. Linney's over 25 years of experience in leadership roles in the life sciences and diagnostics industries qualify her to serve as a member of our Board.

INFORMATION REGARDING THE BOARD OF DIRECTORS AND CORPORATE GOVERNANCE

INDEPENDENCE OF THE BOARD OF DIRECTORS

As required under the Nasdaq Stock Market ("Nasdaq") listing standards, a majority of the members of a listed company's board of directors must qualify as "independent," as affirmatively determined by the board of directors. Our Board consults with our counsel to ensure that the Board's determinations are consistent with relevant securities and other laws and regulations regarding the definition of "independent," including those set forth in pertinent listing standards of Nasdaq, as in effect from time to time.

Consistent with these considerations, after review of all relevant identified transactions or relationships between each director, or any of their family members, and the Company, its senior management and its independent auditors, the Board has affirmatively determined that each of Dr. Barker, Dr. Luderer, Dr. Vuori, Ms. Mamuszka, Mr. Twomey and Dr. Linney are independent directors within the meaning of the applicable Nasdaq listing standards. In making this determination, the Board found that none of these directors had a material or other disqualifying relationship with the Company.

BOARD LEADERSHIP STRUCTURE

The Board has an independent Chairman, Dr. Barker, who has authority, among other things, to call and preside over Board meetings, including meetings of the independent directors, to set meeting agendas and to determine materials to be distributed to the Board. Accordingly, the Chairman has substantial ability to shape the work of the Board. We believe that separation of the positions of Chairman and Chief Executive Officer reinforces the independence of the Board in its oversight of our business and affairs. In addition, we have a separate chair for each committee of the Board. The chair of each committee is expected to report annually to our board of directors on the activities of their committee in fulfilling their responsibilities as detailed in their respective charters or specify any shortcomings should that be the case. In addition, we believe that having an independent Chairman creates an environment that is more conducive to objective evaluation and oversight of management's performance, increasing management accountability and improving the ability of the Board to monitor whether management's actions are in the best interests of us and our stockholders. As a result, we believe that having an independent Board Chairman can enhance the effectiveness of the Board as a whole.

ROLE OF THE BOARD IN RISK OVERSIGHT

Risk is inherent with every business, and we face a number of risks, including strategic, financial, business and operational, legal and compliance, cybersecurity and reputational. One of the key functions of our Board is informed oversight of our risk management process. Our Board does not have a standing risk management committee, but rather administers this oversight function directly through the Board as a whole, as well as through various standing committees of the Board that address risks inherent in their respective areas of oversight. In particular, our Board is responsible for monitoring and assessing strategic risk exposure and our Audit Committee has the responsibility to consider and discuss our major financial risk exposures and the steps that management has taken to monitor and control these exposures, including guidelines and policies to govern

the process by which risk assessment and management is undertaken. The Audit Committee also monitors compliance with legal and regulatory requirements, in addition to oversight of the performance of our internal audit function. Our Nominating and Corporate Governance Committee monitors the effectiveness of our corporate governance guidelines, including whether they are successful in preventing illegal or improper liability-creating conduct. Our Compensation Committee assesses and monitors whether any of our compensation policies and programs has the potential to encourage excessive risk-taking. It is the responsibility of the committee chairs to report findings regarding material risk exposures to the Board as quickly as possible. The Chairman coordinates between the Board and management with regard to the determination and implementation of responses to any problematic risk management issues.

MEETINGS OF THE BOARD OF DIRECTORS

The Board met eight times during the last fiscal year. Each Board member attended 75% or more of the aggregate number of meetings of the Board and of the committees on which he served, held during the portion of the last fiscal year for which he was a director or committee member.

As required under the Nasdaq listing standards, in 2019, our independent directors met three times in regularly scheduled executive sessions at which only independent directors were present.

INFORMATION REGARDING COMMITTEES OF THE BOARD OF DIRECTORS

The Board has three standing committees: an Audit Committee; a Compensation Committee; and a Nominating and Corporate Governance Committee. The following table provides membership and meeting information for fiscal year 2019 for each of these committees of the Board:

Name	Audit	Compensation	Nominating and Corporate Governance
R. Erik Holmlin, Ph.D.			
David L. Barker, Ph.D.	X	X*	
Albert Luderer, Ph.D.		X	X*
Junfeng Wang ⁽¹⁾	X	X	
Christopher Twomey	X*		
Kristiina Vuori, M.D., Ph.D. ⁽²⁾		X	X
Darren Cai, Ph.D. ⁽³⁾		X	
Quan Zhou ⁽⁴⁾			X
Number of meetings in fiscal year 2019	4	2	2

* Committee Chairperson

(1) Mr. Wang resigned from the Board, the Compensation Committee and the Nominating and Corporate Governance Committee in May 2020.

(2) Dr. Vuori has served on the Compensation Committee and the Nominating and Corporate Governance Committee since December 2019.

(3) Dr. Cai resigned from the Board and the Compensation Committee in May 2019.

(4) Mr. Zhou resigned from the Board and the Nominating and Corporate Governance Committee in December 2019.

Below is a description of each committee of the Board.

Each of the committees has authority to engage legal counsel or other experts or consultants, as it deems appropriate to carry out its responsibilities. The Board has determined that each member of each committee meets the applicable Nasdaq rules and regulations regarding “independence” and each member is free of any relationship that would impair his or her individual exercise of independent judgment with regard to the Company.

Audit Committee

The Audit Committee was established by the Board in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), to oversee the Company’s corporate accounting and financial reporting processes and audits of its financial statements. For this purpose, the Audit Committee performs several functions. The primary purpose of the Audit Committee is to discharge the responsibilities of the Board with respect to the Company’s corporate accounting and financial reporting processes, systems of internal control over financial reporting and financial-statement audits, as well as overseeing the Company’s independent registered accounting firm. Specific responsibilities of the Audit Committee include, among other things:

- helping the Board oversee the Company’s corporate accounting and financial reporting processes;
- managing the selection, engagement, qualifications, independence and performance of a qualified firm to serve as the independent registered public accounting firm to audit the Company’s financial statements;
- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and the independent accountants, our interim and year-end operating results;
- developing procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- reviewing related person transactions;
- obtaining and reviewing a report by the independent registered public accounting firm at least annually, that describes our internal quality control procedures, any material issues with such procedures, and any steps taken to deal with such issues when required by applicable law; and
- approving, or, as permitted, pre-approving, audit and permissible non-audit services to be performed by the independent registered public accounting firm.

The Audit Committee is currently composed of three directors: Mr. Twomey, Dr. Luderer and Dr. Barker. The Audit Committee met three times during the fiscal year. The Board has adopted a written Audit Committee charter that is available to stockholders on the Company’s website at www.bionanogenomics.com. The information on our website is not incorporated by reference into this proxy statement or our Annual Report for fiscal year 2019.

The Board reviews the Nasdaq listing standards definition of independence for Audit Committee members on an annual basis and has determined that all members of the Company’s Audit Committee are independent (as independence is currently defined in Rule 5605(c)(2)(A)(i) and (ii) of the Nasdaq listing standards and Rule 10A-3(b)(1) of the Exchange Act).

Each member of the Audit Committee can read and understand fundamental financial statements in accordance with applicable requirements. In arriving at these determinations, the Board has examined each Audit Committee member’s scope of experience and the nature of their employment in the corporate finance sector.

The chair of the Audit Committee is Mr. Twomey, who the Board has determined is an “audit committee financial expert” as defined in applicable SEC rules. The Board made a qualitative assessment of Mr. Twomey’s level of knowledge and experience based on a number of factors, including his formal education, prior experience, business acumen and independence. In addition to the Company’s Audit Committee, Mr. Twomey also serves on the Audit Committee of Tandem Diabetes Care, Inc. The Board has determined that this simultaneous service does not impair Mr. Twomey’s ability to effectively serve on the Audit Committee.

Report of the Audit Committee of the Board of Directors

The Audit Committee has reviewed and discussed the audited financial statements for the fiscal year ended December 31, 2019 with management of the Company. The Audit Committee has discussed with the independent registered public accounting firm the matters required to be discussed by Auditing Standard No. 1301, *Communications with Audit Committees*, as adopted by the Public Company Accounting Oversight Board (“PCAOB”). The Audit Committee has also received the written disclosures and the letter from the independent registered public accounting firm required by applicable requirements of the PCAOB regarding the independent

registered accountants firm's communications with the Audit Committee concerning independence, and has discussed with the independent registered public accounting firm the accounting firm's independence. Based on the foregoing, the Audit Committee has recommended to the Board that the audited financial statements be included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2019.

Mr. Twomey, Chair
Dr. Luderer
Dr. Barker

* *The material in this report is not "soliciting material," is not deemed "filed" with the SEC and is not to be incorporated by reference in any filing of the Company under the Exchange Act or the Securities Act of 1933, as amended, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.*

Compensation Committee

The Compensation Committee is currently composed of two directors: Dr. Barker and Dr. Vuori. The Board has determined that each member of the Compensation Committee is independent under the Nasdaq listing standards, a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act and an "outside director" as that term is defined in Section 162(m) of the Internal Revenue Code of 1986, as amended. The Compensation Committee met twice during the fiscal year. The Board has adopted a written Compensation Committee charter that is available to stockholders on the Company's website at www.bionanogenomics.com. The information on our website is not incorporated by reference into this proxy statement or our Annual Report for fiscal year 2019.

The Compensation Committee of the Board acts on behalf of the Board to review, adopt or recommend to the Board for adoption and oversee the Company's compensation strategy, policies, plans and programs and to review and determine the compensation to be paid to our executive officers, directors and other senior management, as appropriate. Specific responsibilities of the Compensation Committee include, among other things:

- reviewing and approving the compensation of our chief executive officer, other executive officers and senior management;
- reviewing and recommending to the Board the compensation paid to our directors;
- reviewing and approving the compensation arrangements with our executive officers and other senior management;
- administering our equity incentive plans and other benefit programs;
- reviewing, adopting, amending and terminating, incentive compensation and equity plans, severance agreements, profit sharing plans, bonus plans, change-of-control protections and any other compensatory arrangements for our executive officers and other senior management;
- reviewing, evaluating and recommending to the Board succession plans for our executive officers; and
- reviewing and establishing general policies relating to compensation and benefits of our employees, including our overall compensation philosophy.

Compensation Committee Processes and Procedures

Typically, the Compensation Committee meets approximately three times per year and with greater frequency if necessary. The agenda for each meeting is usually developed by the Chair of the Compensation Committee, in consultation with management. The Compensation Committee meets regularly in executive session. However, from time to time, various members of management and other employees as well as outside advisors or consultants may be invited by the Compensation Committee to make presentations, to provide financial or other background information or advice or to otherwise participate in Compensation Committee meetings. The Chief Executive Officer does not participate in and is not present during, any deliberations or determinations of the Compensation Committee regarding his compensation or individual performance objectives. The charter of the Compensation Committee grants the Compensation Committee full access to all books, records, facilities and personnel of the Company. In addition, under its charter, the Compensation Committee has

the authority to obtain, at the expense of the Company, advice and assistance from compensation consultants and internal and external legal, accounting or other advisors and other external resources that the Compensation Committee considers necessary or appropriate in the performance of its duties. The Compensation Committee has direct responsibility for the oversight of the work of any consultants or advisers engaged for the purpose of advising the Compensation Committee. In particular, the Compensation Committee has the sole authority to retain, in its sole discretion, compensation consultants to assist in its evaluation of executive and director compensation, including the authority to approve the consultant's reasonable fees and other retention terms. Under its charter, to the extent required by the SEC and Nasdaq rules, the Compensation Committee may select, or receive advice from, a compensation consultant, legal counsel or other adviser to the compensation committee, other than in-house legal counsel and certain other types of advisers, only after taking into consideration six factors, prescribed by the SEC and Nasdaq, that bear upon the adviser's independence; however, there is no requirement that any adviser be independent.

During the past fiscal year, after taking into consideration the six factors prescribed by the SEC and Nasdaq described above, the Compensation Committee re-engaged Radford as its compensation consultant. Our Compensation Committee identified Radford based on its services to the Company during the prior fiscal year and Radford's general reputation in the industry. The Compensation Committee requested that Radford:

- evaluate the efficacy of the Company's compensation strategy and practices in supporting and reinforcing the Company's long-term strategic goals;
- assist in refining the Company's compensation strategy and in developing and implementing an executive compensation program to execute that strategy;
- develop a comparative group of companies and perform analyses of competitive performance and compensation levels for that group; and
- Examine competitiveness of equity compensation and retention value of the equity program.

The Compensation Committee holds one or more meetings during the first quarter of the year to discuss and make recommendations to the Board for annual compensation adjustments, annual bonuses, annual equity awards, and new corporate performance objectives. However, the Compensation Committee also considers matters related to individual compensation, such as compensation for new executive hires, as well as high-level strategic issues, such as the efficacy of the Company's compensation strategy, potential modifications to that strategy and new trends, plans or approaches to compensation, at various meetings throughout the year. Generally, the Compensation Committee's process comprises two related elements: the determination of compensation levels and the establishment of performance objectives for the current year. For executives other than the Chief Executive Officer, the Compensation Committee solicits and considers evaluations and recommendations submitted to the Compensation Committee by the Chief Executive Officer. In the case of the Chief Executive Officer, the evaluation of his performance is conducted by the Compensation Committee, which determines recommendations to the Board regarding any adjustments to his compensation as well as awards to be granted. For all executives and directors as part of its deliberations, the Compensation Committee may review and consider, as appropriate, materials such as financial reports and projections, operational data, executive and director stock ownership information, company stock performance data, analyses of historical executive compensation levels and current Company-wide compensation levels, compensation data from comparative companies, compensation surveys, and recommendations of any compensation consultant, if applicable.

Nominating and Corporate Governance Committee

The Nominating and Corporate Governance Committee of the Board is responsible for identifying, reviewing and evaluating candidates to serve as directors of the Company (consistent with criteria approved by the Board), reviewing and evaluating incumbent directors, selecting or recommending to the Board for selection candidates for election to the Board, making recommendations to the Board regarding the membership of the committees of the Board, assessing the performance of the Board, and developing a set of corporate governance principles for the Company.

The Nominating and Corporate Governance Committee is currently composed of two directors: Dr. Luderer and Dr. Vuori. Each member of the Nominating and Corporate Governance Committee is independent under the Nasdaq listing standards, a non-employee director and free from any relationship that would interfere with the exercise of his independent judgment. The Nominating and Corporate Governance Committee met twice during the fiscal year. The Board has adopted a written Nominating and Corporate Governance Committee charter that

is available to stockholders on the Company's website at www.bionanogenomics.com. The information on our website is not incorporated by reference into this proxy statement or our Annual Report for fiscal year 2019.

The responsibilities of the Nominating and Corporate Governance Committee include, among other things:

- identifying and evaluating candidates, including the nomination of incumbent directors for reelection and nominees recommended by stockholders, to serve on the Board;
- considering and making recommendations to the Board regarding the composition and chairmanship of the committees of the Board;
- instituting plans or programs for the continuing education of the Board and orientation of new directors;
- developing and making recommendations to the Board regarding corporate governance guidelines and matters; and
- overseeing periodic evaluations of the Board's performance, including committees of the Board and management.

The Nominating and Corporate Governance Committee believes that candidates for director should have certain minimum qualifications, including the ability to read and understand basic financial statements, being over 21 years of age and having the highest personal integrity and ethics. The Nominating and Corporate Governance Committee also intends to consider such factors as possessing relevant expertise upon which to be able to offer advice and guidance to management, having sufficient time to devote to the affairs of the Company, demonstrated excellence in his or her field, having the ability to exercise sound business judgment and having the commitment to rigorously represent the long-term interests of the Company's stockholders. However, the Nominating and Corporate Governance Committee retains the right to modify these qualifications from time to time. Candidates for director nominees are reviewed in the context of the current composition of the Board, the operating requirements of the Company and the long-term interests of stockholders. In conducting this assessment, the Nominating and Corporate Governance Committee typically considers diversity (including gender, racial and ethnic diversity), age, skills and such other factors as it deems appropriate, given the current needs of the Board and the Company, to maintain a balance of knowledge, experience and capability.

The Nominating and Corporate Governance Committee appreciates the value of thoughtful Board refreshment, and regularly identifies and considers qualities, skills and other director attributes that's would enhance the composition of the Board. In the case of incumbent directors whose terms of office are set to expire, the Nominating and Corporate Governance Committee reviews these directors' overall service to the Company during their terms, including the number of meetings attended, level of participation, quality of performance and any other relationships and transactions that might impair the directors' independence. In the case of new director candidates, the Nominating and Corporate Governance Committee also determines whether the nominee is independent for Nasdaq purposes, which determination is based upon applicable Nasdaq listing standards, applicable SEC rules and regulations and the advice of counsel, if necessary. The Nominating and Corporate Governance Committee then uses its network of contacts to compile a list of potential candidates, but may also engage, if it deems appropriate, a professional search firm. The Nominating and Corporate Governance Committee conducts any appropriate and necessary inquiries into the backgrounds and qualifications of possible candidates after considering the function and needs of the Board. The Nominating and Corporate Governance Committee meets to discuss and consider the candidates' qualifications and then selects candidates for recommendation to the Board by majority vote.

Our Nominating and Corporate Governance Committee does not have a formal policy regarding board diversity. Diversity is one of a number of factors, however, that the committee takes into account in identifying nominees, and the Nominating and Corporate Governance Committee believes that it is essential that the board members represent diverse viewpoints. To accomplish the Board's diversity objectives, the Nominating and Governance Committee may retain an executive search firm to help identify potential directors that meet these objectives.

The Nominating and Corporate Governance Committee will consider director candidates recommended by stockholders. The Nominating and Corporate Governance Committee does not intend to alter the manner in which it evaluates candidates, including the minimum criteria set forth above, based on whether or not the candidate was recommended by a stockholder. Stockholders who wish to recommend individuals for

consideration by the Nominating and Corporate Governance Committee to become nominees for election to the Board may do so by delivering a written recommendation to the Nominating and Corporate Governance Committee at the following address: Secretary of Bionano Genomics, Inc., 9540 Towne Centre Drive, Suite 100, San Diego, CA 92121, 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 first anniversary of the preceding year's annual meeting of stockholders. Submissions must include the name and address of the Company stockholder on whose behalf the submission is made; the number of Company shares that are owned beneficially by such stockholder as of the date of the submission; the full name of the proposed candidate; a description of the proposed candidate's business experience for at least the previous five years; complete biographical information for the proposed candidate; and a description of the proposed candidate's qualifications as a director. Any such submission must be accompanied by the written consent of the proposed nominee to be named as a nominee and to serve as a director if elected.

STOCKHOLDER COMMUNICATIONS WITH THE BOARD OF DIRECTORS

The Board has adopted a formal process by which stockholders may communicate with the Board or any of its directors. Stockholders who wish to communicate with the Board may do so by sending written communications addressed to: Secretary of Bionano Genomics, Inc., 9540 Towne Centre Drive, Suite 100, San Diego, CA 92121. These communications will be reviewed by the Secretary of Bionano, who will determine whether the communication is appropriate for presentation to the Board or the relevant director. The purpose of this screening is to allow the Board to avoid having to consider irrelevant or inappropriate communications (such as advertisements, solicitations and hostile communications). The screening procedures have been approved by a majority of the independent directors. All communications directed to the Audit Committee in accordance with our Open Door Policy for Reporting Complaints Regarding Accounting and Auditing Matters that relate to questionable accounting or auditing matters will be promptly and directly forwarded to the Audit Committee.

CODE OF ETHICS

We have adopted a Code of Business Conduct and Ethics that applies to all of our officers, directors and employees. The Code of Business Conduct and Ethics is available on the Company's website at www.bionanogenomics.com. The information on our website is not incorporated by reference into this proxy statement or our Annual Report for fiscal year 2019. If we make any substantive amendments to the Code of Business Conduct and Ethics or grants any waiver from a provision of the code to any executive officer or director, the Company will promptly disclose the nature of the amendment or waiver on its website.

RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Audit Committee has selected BDO USA, LLP to serve as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2020 and our Board has further directed that management submit the Audit Committee's selection of BDO USA, LLP as the Company's independent registered public accounting firm for ratification by the stockholders at the Annual Meeting. On May 3, 2020, our audit committee approved the engagement of BDO USA, LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020. Representatives of BDO USA, LLP are expected to be present by virtual attendance at the Annual Meeting. They will have an opportunity to make a statement if they so desire and will be available to respond to appropriate questions.

Neither the Company's Amended and Restated Bylaws nor other governing documents or law require stockholder ratification of the selection of BDO USA, LLP as the Company's independent registered public accounting firm. However, the Audit Committee is submitting the selection of BDO USA, LLP to the stockholders for ratification as a matter of good corporate practice. If the stockholders fail to ratify the selection, the Audit Committee will reconsider whether or not to retain that firm. Even if the selection is ratified, the Audit Committee in its discretion may direct the appointment of different independent auditors at any time during the year if they determine that such a change would be in the best interests of the Company and its stockholders.

Vote Required

The affirmative vote of the holders of a majority of the shares present by virtual attendance at the Annual Meeting or represented by proxy and entitled to vote on the matter at the Annual Meeting will be required to ratify the selection of BDO USA, LLP.

CHANGES IN THE COMPANY'S CERTIFYING ACCOUNTANT FEES AND SERVICES

Deloitte & Touche, LLP audited our financial statements for each of the two fiscal years ended December 31, 2019 and December 31, 2018. On May 3, 2020, the Audit Committee approved the dismissal of Deloitte & Touche and appointed BDO USA, LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020.

The reports of Deloitte & Touche, LLP on our financial statements for each of the two fiscal years ended December 31, 2019 and December 31, 2018 did not contain an adverse opinion or a disclaimer of opinion and were not qualified or modified as to uncertainty, audit scope or accounting principles, except that, the reports expressed an unqualified opinion and included an explanatory paragraph relating to substantial doubt about our ability to continue as a going concern.

In connection with the audits of our financial statements for each of the two fiscal years ended December 31, 2019 and December 31, 2018, and during the subsequent interim period through May 3, 2020 (the effective date of Deloitte & Touche, LLP's dismissal), there were no disagreements (as that term is defined in Item 304(a)(1)(iv) of Regulation S-K and related instructions) with Deloitte & Touche, LLP on any matters of accounting principles or practices, financial statement disclosure or auditing scope and procedures which, if not resolved to the satisfaction of Deloitte & Touche, LLP, would have caused Deloitte & Touche, LLP to make reference to the matter in their reports on the consolidated financial statements for such years.

For the fiscal years ended December 31, 2019 and 2018, there were no reportable events (as described in Item 304(a)(1)(v) of Regulation S-K), except that, as disclosed in Part II, Item 9A of our Annual Report, we reported material weaknesses in our internal control over financial reporting during such period. As disclosed in our Annual Report, in connection with our evaluation of the effectiveness of its internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934) as of December 31, 2019, we concluded that our internal control over financial reporting was not effective as of December 31, 2019 because we did not have a sufficient number of resources to support the growth and complexity of our financial reporting requirements. The foregoing material weakness contributed to a material weakness in our control activities based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control-Integrated Framework. Specifically, the design of certain controls did not adequately provide appropriate segregation of duties and allow timely completion of financial reporting and accounting activities. The failure to maintain appropriate segregation of duties had a pervasive impact and as such, this deficiency resulted in a risk that could have impacted all financial statement account balances and

disclosures. The material weaknesses did not result in any identified material misstatements to our financial statements, and there were no changes to previously released financial results. Our activities to remediate the material weaknesses are disclosed in our Annual Report. The Audit Committee has discussed the material weaknesses in our internal control over financial reporting with Deloitte & Touche, LLP, and has authorized Deloitte & Touche, LLP to respond fully to the inquiries of BDO USA, LLP concerning such material weaknesses.

During the years ended December 31, 2019 and 2018, and the subsequent interim period through May 3, 2020, neither we nor anyone on our behalf consulted with BDO USA, LLP regarding either (i) the application of accounting principles to a specific transaction, either completed or proposed, or the type of audit opinion that might be rendered on our consolidated financial statements or the effectiveness of internal control over financial reporting, and neither a written report or oral advice was provided to us that BDO USA, LLP concluded was an important factor considered by us in reaching a decision as to any accounting, auditing or financial reporting issue or (ii) any matter that was either the subject of a disagreement (as defined in Item 304(a)(1)(iv) of Regulation S-K and the related instructions) or any reportable event (as described in Item 304(a)(1)(v) of Regulation S-K).

PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table summarizes the aggregate fees billed to the Company by Deloitte & Touche, LLP for the fiscal years ended December 31, 2019 and 2018:

	2019	2018
Audit fees ⁽¹⁾	\$640,000	\$1,020,000
Audit-related fees ⁽²⁾	46,000	49,000
Tax fees ⁽³⁾	19,700	20,000
All other fees ⁽⁴⁾	—	2,000
Total	\$705,700	\$1,091,000

- (1) Audit fees consist of fees billed for professional services rendered for the audit of the consolidated annual financial statements of the Company, review of the interim condensed consolidated financial statements included in quarterly reports, review of the SEC-filings associated with the Company's initial public offering, and services that are normally provided by Deloitte & Touche, LLP in connection with statutory and regulatory filings or engagements. The amount for the fiscal year ended December 31, 2019 includes \$25,000 billed after the filing of our Annual Report.
- (2) Audit-related fees consist of fees billed for assurance and related services that are reasonably related to the performance of the audit or review of the consolidated financial statements of the Company and are not reported under "Audit fees." For the fiscal years ended December 31, 2019 and 2018, these fees primarily related to miscellaneous professional services.
- (3) Tax fees consist of fees billed for professional services rendered for tax compliance, advice and planning. For the fiscal years ended December 31, 2019 and 2018, these services included assistance regarding federal and state tax compliance and consultations regarding various income tax issues.
- (4) All other fees for the fiscal year ended December 31, 2018 related to software subscription services.

During the fiscal year ended December 31, 2019, all of the total hours expended on our financial audit by Deloitte & Touche, LLP were provided by Deloitte & Touche, LLP's full-time permanent employees.

PRE-APPROVAL POLICIES AND PROCEDURES

In considering the nature of the services provided by BDO USA, LLP and Deloitte & Touche, LLP, the Audit Committee determined that such services were compatible with the provision of independent audit services. The Audit Committee discussed these services with BDO USA, LLP and Deloitte & Touche, LLP and management to determine that they were permitted under the rules and regulations concerning auditor independence promulgated by the SEC to implement the Sarbanes-Oxley Act of 2002, as well as the Public Company Accounting Oversight Board. The Audit Committee required that all services performed by Deloitte & Touche, LLP be pre-approved prior to the services being performed. During the fiscal years ended December 31, 2019 and 2018, all services by Deloitte & Touche, LLP were pre-approved in accordance with these procedures, and the Audit Committee continues to require that all services performed by BDO USA, LLP be pre-approved in accordance with these procedures prior to the services being performed.

**THE BOARD OF DIRECTORS RECOMMENDS
A VOTE "FOR" THE AUDITOR RATIFICATION PROPOSAL.**

EXECUTIVE OFFICERS

The following table sets forth information concerning our executive officers as of the date of this proxy statement:

Name	Age	Position
R. Erik Holmlin, Ph.D.	52	President, Chief Executive Officer and Director
Warren Robinson	51	Chief Commercial Officer
Mark Oldakowski	46	Chief Operating Officer

EXECUTIVE OFFICERS WHO ARE NOT DIRECTORS

The following sets forth certain information with respect to our executive officers who are not directors:

Warren Robinson. Mr. Robinson has served as our Chief Commercial Officer since November 2017 and previously served as a Vice President with us in various sales and marketing functions from October 2015 to November 2017, including most recently as our Vice President of Global Sales and Marketing. From June 2013 to October 2015, Mr. Robinson served as Division Vice President of Aegis Chemical Solutions, LLC, a private oil production services company. Previously, Mr. Robinson held various leadership roles in sales-focused positions with Life Technologies Corporation, a publicly traded research tools development company acquired by Thermo Fisher Scientific Inc. in February 2014, and Invitrogen Corporation, a publicly traded research tools development company acquired by Life Technologies in January 2008. Mr. Robinson received his bachelor's degree in biochemistry from The University of Lethbridge, a research university located in Canada.

Mark Oldakowski. Mr. Oldakowski has served as our Chief Operating Officer since November 2017 and previously served as our Vice President, Product Development and Operations since October 2014. From December 2011 to August 2014, Mr. Oldakowski served as the Senior Director of Engineering and Chief Product Officer at Brooks Life Science Systems, a provider of automation and cryogenic solutions for the life science industry, and from April 2009 to October 2011 as a Director of Engineering at Affymetrix, Inc., a private life science systems company that was acquired by Thermo Fisher Scientific in March 2016. From December 2007 to April 2009, Mr. Oldakowski served as a Senior Manager and Core Team Leader of R&D for Siemens Healthcare Diagnostics, and for the prior 13 years, he developed sequencing and real-time PCR systems at Applied Biosystems, now a part of Thermo Fisher Scientific. Mr. Oldakowski received both his bachelor's degree in electrical engineering and his master's degree in computer and systems engineering from Rensselaer Polytechnic Institute.

**SECURITY OWNERSHIP OF
CERTAIN BENEFICIAL OWNERS AND MANAGEMENT**

The following table sets forth information regarding beneficial ownership of our capital stock as of May 1, 2020 by:

- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our common stock;
- each of our directors;
- each of our named executive officers; and
- all of our current executive officers and directors as a group.

The following table is based upon information supplied by officers, directors and principal stockholders and Schedules 13D and 13G filed with the SEC. Unless otherwise indicated in the footnotes to this table and subject to community property laws where applicable, the Company believes that each of the stockholders named in this table has sole voting and investment power with respect to the shares indicated as beneficially owned. Applicable percentages are based on 68,676,070 shares of our common stock outstanding on May 1, 2020, adjusted as required by rules promulgated by the SEC. Unless otherwise indicated, the address for the following stockholders is care of: Bionano Genomics, Inc., 9540 Towne Centre Drive, Suite 100, San Diego, CA 92121.

Name of Beneficial Owner	Shares Owned Directly	Options Exercisable within 60 Days of 05/01/2020	Warrants	Number of Shares Beneficially Owned ⁽¹⁾	%(2)
Directors and Named Executive Officers	**	**	**	**	**
David L. Barker, Ph.D. ⁽³⁾	3,894	41,069	3,894	48,857	*
R. Erik Holmlin, Ph.D.	3,026	348,138	1,630	352,794	*
Yvonne Linney, Ph.D.	—	2,247	—	2,247	*
Albert Luderer, Ph.D.	—	36,934	—	36,934	*
Hannah Mamuszka	—	2,247	—	2,247	*
Mark Oldakowski	9,736	98,322	815	108,873	*
Warren Robinson	3,932	102,097	—	106,029	*
Christopher Twomey	64,500	27,753	64,500	156,753	*
Mike Ward ⁽⁴⁾	—	—	—	—	*
Kristiina Vuori, M.D., Ph.D.	—	10,091	—	10,091	*
All directors and executive officers as a group (10 persons)	85,088	668,898	70,839	824,825	1.2%

* Represents beneficial ownership of less than 1%.

- (1) Beneficial ownership is determined in accordance with SEC rules. In computing the beneficial ownership we have included shares for which the named person has sole or shared power over voting or investment decisions. The number of shares of common stock beneficially owned includes common stock which the named person has the right to acquire, through option exercise or otherwise, within 60 days after May 1, 2020. No person or group of affiliated persons is known by us to beneficially own more than 5% of our common stock as of May 1, 2020.
- (2) For each named person, the percentage ownership includes common stock that the person has the right to acquire within 60 days after May 1, 2020, as described in Footnote 1. However, such shares are not deemed outstanding with respect to the calculation of ownership percentage for any other person. In some cases, beneficial ownership calculations for five percent or greater stockholders are based solely on publicly-filed Schedules 13D or 13G, which five percent or greater stockholders are required to file with the SEC, and which generally set forth ownership interests as of May 1, 2020 unless otherwise provided.
- (3) The indicated ownership consists of (i) 3,894 shares of common stock and 3,894 shares of common stock issuable upon the exercise of outstanding warrants held by David L. Barker and (ii) 41,069 shares of common stock subject to options exercisable as of June 8, 2020 held by The Barker/Loring Trust Dated August 27, 2018.
- (4) Mr. Ward terminated services with us effective December 6, 2019.

DELINQUENT SECTION 16(A) REPORTS

Section 16(a) of the Exchange Act requires our directors and executive officers, and persons who own more than 10% of a registered class of our equity securities, to file with the SEC initial reports of ownership and reports of changes in ownership of our common stock and other equity securities. Officers, directors and greater than 10% stockholders are required by SEC regulation to furnish us with copies of all Section 16(a) forms they file.

To our knowledge, based solely on a review of the copies of such reports furnished to us and written representations that no other reports were required, during the fiscal year ended December 31, 2019, all Section 16(a) filing requirements applicable to our officers, directors and greater than 10% beneficial owners of our capital stock were complied with, except that R. Erik Holmlin, Mike Ward, Mark Oldakowski and Warren Robinson each failed to timely file a Form 4 during our fiscal year ended December 31, 2019 to report grants of stock options by the Company on March 1, 2019.

EXECUTIVE AND DIRECTOR COMPENSATION

Our named executive officers for the year ended December 31, 2019, consisting of our principal executive officer, the next two most highly compensated executive officers and a former executive officer who would have been included among our highest compensated executive officers but for the fact that he was not serving as an officer as of December 31, 2019, were:

- R. Erik Holmlin, Ph.D., our Chief Executive Officer;
- Mike Ward, our former Chief Financial Officer⁽¹⁾;
- Warren Robinson, our Chief Commercial Officer; and
- Mark Oldakowski, our Chief Operating Officer

⁽¹⁾ Mr. Ward terminated service with us effective December 6, 2019.

The following section provides an overview of the 2019 executive compensation decisions for our named executive officers. The compensation decisions described in the tables and narrative below were made in 2019 or in early 2020 before the recent disruptions to the U.S. economy related to the COVID-19 pandemic. In April 2020, in connection with the direct and indirect effects of the COVID-19 pandemic on our business, the Board approved salary reductions for our executive officers and certain other employees, including 50% salary reductions for each of Dr. Holmlin, Mr. Robinson and Mr. Oldakowski. The Board and Compensation Committee will continue to consider the impacts of the COVID-19 pandemic on our executive compensation program.

Summary Compensation Table

The following table presents all of the compensation awarded to or earned by or paid to our named executive officers during the fiscal year ended December 31, 2019.

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Option Awards ⁽¹⁾ (\$)	Non-Equity Incentive Plan Compensation ⁽²⁾ (\$)	All Other Compensation ⁽³⁾ (\$)	Total (\$)
R. Erik Holmlin, Ph.D. <i>Chief Executive Officer</i>	2019	403,636	—	351,002	132,392	11,560	898,590
	2018	389,986	—	1,993,316	132,595	11,360	2,527,257
Mike Ward ⁽⁴⁾ <i>Former Chief Financial Officer</i>	2019	289,874	—	145,242	—	11,560	446,676
	2018	289,061	—	463,014	78,241	11,360	841,676
Warren Robinson <i>Chief Commercial Officer</i>	2019	305,325	—	145,242	72,667	11,560	534,794
	2018	295,000	—	502,253	88,795	11,360	897,408
Mark Oldakowski <i>Chief Operating Officer</i>	2019	305,325	—	145,242	84,727	11,560	546,854
	2018	295,000	—	258,710	47,354	11,360	612,424

(1) In accordance with SEC rules, this column reflects the aggregate grant date fair value of stock options granted to our named executive officers during fiscal years ended December 31, 2018 and December 31, 2019 under our 2018 Plan, as determined in accordance with the provisions of FASB ASC Topic 718. The valuation assumptions used in calculating their fair value of the stock options are included in Note 8 to our financial statements included elsewhere in this Annual Report. These amounts do not reflect the actual economic value that may be realized by the named executive officer upon the vesting of the stock options, the exercise of the stock options, or the sale of the common stock underlying such stock options.

(2) Amounts reported represent bonuses earned in 2018 and paid in 2019 and earned in 2019 and paid in 2020 at the discretion of our Board.

(3) Amounts for 2018 reflect \$11,000 for 401(k) matching contributions and \$360 for life insurance premiums and amounts for 2019 reflect \$11,200 for 401(k) matching contributions and \$360 for life insurance premiums.

(4) Mr. Ward terminated services with us effective December 6, 2019.

Compensation Program Overview

Our compensation program for executive officers is designed to encourage our management team to continually achieve our short-term and long-term corporate objectives while effectively managing business risks and challenges. We provide what we believe is a competitive total compensation package to our management team through a combination of base salary, an annual performance-based bonus and long-term equity-based incentives.

The compensation of our named executive officers other than our chief executive officer is generally determined and approved by the Compensation Committee of our Board, and the compensation of our chief executive officer is approved by our Board based upon the recommendations of the Compensation Committee.

Annual Base Salary

The compensation of our named executive officers is generally determined and approved by our Board, based on the recommendation of the compensation committee of our Board. The 2019 base salaries that became effective as of January 1, 2019 were as follows:

NAME	2019 BASE SALARY (\$)
R. Erik Holmlin, Ph.D.	403,636
Mike Ward	308,493
Warren Robinson	305,325
Mark Oldakowski	305,325

Bonus Opportunity

In addition to base salaries, our named executive officers are eligible to receive annual performance-based cash bonuses, which are designed to provide appropriate incentives to our executives to achieve defined annual performance goals and to reward our executives for individual achievement towards these goals. The annual performance-based bonus each named executive officer is eligible to receive is generally based on the extent to which we achieve the corporate goals that our compensation committee establishes each year and, for all except Dr. Holmlin, the individual's contributions to such achievements. Dr. Holmlin's payout is based entirely on Company performance, Mr. Robinson's payout is based upon our achievement of certain specified revenue objectives and Mr. Ward's and Mr. Oldakowski's payouts are based on Company performance (50% weighting) and individual performance (50% weighting). At the end of the year, our board of directors reviews each executive's performance and determines the actual bonus payout to be awarded to each of our named executive officers.

For 2019, the target bonus for Dr. Holmlin was 40% of base salary, for Mr. Ward was 30% of base salary, for Mr. Robinson was a range of 35%-75% of base salary and for Mr. Oldakowski was 30% of base salary. Our corporate performance objectives for 2019, as established by our compensation committee, included achievement of our 2019 operating plan, completion of market development goals, accomplishment of product development milestones, and securing additional financing. In February 2020, our board of directors approved a 82% overall achievement level of our corporate goals and awarded bonuses to our named executive officers, except for Mr. Ward, who terminated service prior to year-end, based on Company achievements and, except for Dr. Holmlin, on individual performance in 2019.

Equity-Based Incentive Awards

We believe that our ability to grant equity-based awards is a valuable and necessary compensation tool that aligns the long-term financial interests of our employees, consultants and directors with the financial interests of our stockholders. In addition, we believe that our ability to grant equity-based awards helps us to attract, retain and motivate employees, consultants and directors, and encourages them to devote their best efforts to our business and financial success. Our board of directors is responsible for approving equity grants. Vesting of equity awards is generally tied to continuous service with us and serves as an additional retention measure. Our executives generally are awarded an initial new hire grant upon commencement of employment. Additional grants may occur periodically in order to specifically incentivize executives with respect to achieving certain corporate goals or to reward executives for exceptional performance.

Prior to our August 2018 initial public offering, or the IPO, we granted all equity awards pursuant to the 2006 Plan. Following our IPO, we have granted all equity awards pursuant to the 2018 Plan. All options are granted with a per share exercise price equal to no less than the fair market value of a share of our common stock on the date of the grant of such award. Generally our stock option awards vest over a four-year period subject to the holder's continuous service to us.

In March 2019, our board of directors granted options to purchase 145,000 shares to Dr. Holmlin, 60,000 shares to Mr. Ward, 60,000 shares to Mr. Robinson, 60,000 shares to Mr. Oldakowski. Each option has an exercise price of \$4.25 per share and vests as follows: shares subject to the option vest monthly over 48 months beginning on the one-month anniversary of the vesting commencement date, such that the option shall be fully vested and exercisable on the four-year anniversary of the vesting commencement date, provided in each case that the holder is then providing services to us in accordance with the terms of the 2018 Plan. For additional information, please see below under “Outstanding Equity Awards at Fiscal Year-End.”

Equity Compensation Plan Information

The following table provides information as of December 31, 2019 with respect to equity compensation plans (including individual compensation arrangements) under which the Company’s common stock is authorized for issuance.

Plan Category	Number of securities to be issued upon exercise of outstanding options and rights	Weighted average exercise price of outstanding options and rights	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans approved by stockholders:			
Amended and Restated 2006 Equity Compensation Plan	323,735	\$4.70	—
2018 Equity Incentive Plan	1,419,177	\$5.96	196,731
2018 Employee Stock Purchase Plan	—	—	165,402
Equity compensation plans not approved by stockholders:			
None			
Total	1,742,912	\$5.73	362,133

Agreements with Our Named Executive Officers

Below are descriptions of our employment agreements with our named executive officers. For a discussion of the severance pay and other benefits to be provided in connection with a termination of employment and/or a change in control under the arrangements with our named executive officers, please see “-Potential Payments upon Termination or Change in Control” below.

Dr. Holmlin. We entered into an employment agreement with Dr. Holmlin in January 2011, as amended in March 2011 and in November 2017, which governs the current terms of his employment with us. Pursuant to the agreement, as amended, Dr. Holmlin was entitled to an initial annual base salary of \$315,000 (subsequently increased to \$403,636) and is eligible to receive an annual performance bonus with a target of 40% of his base salary, with a higher amount possible if goals exceeding target are achieved, as determined by our compensation committee and subject to approval by our board of directors. In addition, Dr. Holmlin was eligible to receive an option to purchase shares of the Company’s common stock representing 5.0% of the fully-diluted equity shares immediately subsequent to the closing of a Series B transaction, which were equal to 2,992 shares of our common stock and were granted in 2011. In addition, Dr. Holmlin’s agreement provided for additional options to be granted in connection with specified events in order to maintain Dr. Holmlin’s ownership percentage, pursuant to which Dr. Holmlin was granted additional options to purchase 1,115 shares in 2012 and 2,546 shares in 2015. No obligations to make additional grants to maintain Dr. Holmlin’s ownership percentage remain under his employment agreement. Dr. Holmlin’s employment is at will.

Mr. Ward. We entered into an employment agreement with Mr. Ward in July 2016, which governed the terms of his employment with us. Pursuant to the agreement, Mr. Ward was entitled to an initial annual base salary of \$278,250 (subsequently increased to \$308,493) and was eligible to receive an annual performance bonus with a target amount of up to 30% of his base salary, as determined by our board of directors. Mr. Ward’s employment with us ceased on December 6, 2019.

Mr. Robinson. We entered into an employment agreement with Mr. Robinson in November 7, 2017, which governs the current terms of his employment with us. Pursuant to the agreement, Mr. Robinson was entitled to an initial annual base salary of \$275,392 (subsequently increased to \$305,325) and is eligible to receive an annual performance bonus with a target amount of up to 30% of his base salary (subsequently increased to 35%), as determined by our board of directors. Mr. Robinson's employment is at will.

Mr. Oldakowski. We entered into an employment agreement with Mr. Oldakowski in November 7, 2017, which governs the current terms of his employment with us. Pursuant to the agreement, Mr. Oldakowski was entitled to an initial annual base salary of \$276,925 (subsequently increased to \$305,325) and is eligible to receive an annual performance bonus with a target amount of up to 20% of his base salary (subsequently increased to 30%), as determined by our board of directors. Mr. Oldakowski's employment is at will.

Potential Payments upon Termination or Change in Control

Regardless of the manner in which a named executive officer's service terminates, each named executive officer is entitled to receive amounts earned during his term of service, including unpaid salary and unused vacation. In addition, each of our named executive officers is eligible to receive certain benefits pursuant to his employment agreement with us, as described below. For the definitions of "cause," "good reason" and "disability" referenced below, please refer to the individual employment agreements with each of our named executive officers.

Dr. Holmlin. Upon Dr. Holmlin's termination for any reason other than death, disability, cause or resignation without good reason, and subject to Dr. Holmlin's execution of a release, Dr. Holmlin shall be eligible to receive (i) a lump sum amount equal to nine months of base salary, (ii) accelerated vesting of any options or restricted shares that would have vested within 18 months after the date of termination and (iii) premiums for continued health coverage for nine months following the date of termination, or until Dr. Holmlin is no longer eligible for continuation coverage, whichever is earlier. In the event of termination due to disability, and subject to Dr. Holmlin's execution of a release, Dr. Holmlin shall be eligible to receive accelerated vesting in full for any unvested portion of the options granted pursuant to his agreement. In the event of a deemed liquidation event (as defined in Dr. Holmlin's employment agreement), the options granted to Dr. Holmlin pursuant to his agreement shall vest in full.

Mr. Ward. Pursuant to the terms of Mr. Ward's employment agreement in place prior to his separation, and subject to his execution of a release, Mr. Ward was eligible to receive (i) six months of continued base salary payments at the rate in effect at the time of termination and (ii) premiums for continued health coverage for six months following the date of termination or until Mr. Ward is no longer eligible for continuation coverage or he becomes eligible for new healthcare eligibility available through new employment, whichever is earlier. Mr. Ward's services with us ceased on December 6, 2019, and he did not receive any severance payments in connection with such separation.

Mr. Robinson. Upon termination without cause, and subject to Mr. Robinson's execution of a release, Mr. Robinson will be eligible to receive (i) six months of continued base salary payments at the rate in effect at the time of termination and (ii) premiums for continued health coverage for six months following the date of termination or until Mr. Robinson is no longer eligible for continuation coverage or he becomes eligible for new healthcare eligibility available through new employment, whichever is earlier.

Mr. Oldakowski. Upon termination without cause, and subject to Mr. Oldakowski's execution of a release, Mr. Oldakowski will be eligible to receive (i) six months of continued base salary payments at the rate in effect at the time of termination and (ii) premiums for continued health coverage for six months following the date of termination or until Mr. Oldakowski is no longer eligible for continuation coverage or he becomes eligible for new healthcare eligibility available through new employment, whichever is earlier.

Each of our named executive officers holds stock options under the 2006 Plan and 2018 Plan that were granted subject to the general terms of the 2006 Plan or the 2018 Plan, as applicable, and the relevant form of stock option agreement. The specific vesting terms of each named executive officer's stock options are described below under "- Outstanding Equity Awards at Fiscal Year-End."

Outstanding Equity Awards at Fiscal Year-End

The following table presents information regarding outstanding equity awards held by our named executive officers as of December 31, 2019.

Name	Grant Date	Option Awards ⁽¹⁾			
		Number of Securities Underlying Unexercised Options Exercisable	Number of Securities Underlying Unexercised Options Unexercisable	Option Exercise Price Per Share ⁽²⁾	Option Expiration Date
R. Erik Holmlin, Ph.D. ⁽⁶⁾	3/1/2019 ⁽³⁾	27,187	117,813	\$ 4.25	2/28/2029
	10/1/2018 ⁽⁴⁾	138,959	117,581	\$ 7.77	9/30/2028
	2/7/2017 ⁽⁵⁾	96,243	57,744	\$ 1.30	2/6/2027
	1/29/2015	7,284	—	\$64.22	1/28/2025
	6/20/2012	1,115	—	\$68.50	6/19/2022
	5/16/2011	2,992	—	\$42.82	5/15/2021
Mike Ward ⁽⁶⁾	3/1/2019	11,250	—	\$ 4.25	2/28/2029
	10/1/2018	32,227	—	\$ 7.77	9/30/2028
	2/7/2017	21,388	—	\$ 1.30	2/6/2027
	1/29/2015	889	—	\$64.20	1/28/2025
	4/21/2014	612	—	\$81.34	4/20/2024
Warren Robinson	3/1/2019 ⁽³⁾	11,250	48,750	\$ 4.25	2/28/2029
	10/1/2018 ⁽⁴⁾	35,013	29,627	\$ 7.77	9/30/2028
	2/7/2017 ⁽⁵⁾	27,269	1,817	\$ 1.30	2/6/2027
	11/9/2015	1,168	—	\$64.22	11/8/2025
Mark Oldakowski	3/1/2019 ⁽³⁾	11,250	48,750	\$ 4.25	2/28/2029
	10/1/2018 ⁽⁴⁾	32,277	27,318	\$ 7.77	9/30/2028
	2/7/2017 ⁽⁵⁾	32,081	2,138	\$ 1.30	2/6/2027
	1/29/2015	541	—	\$64.22	1/28/2025
	1/27/2014	1,086	—	\$64.22	1/26/2024

(1) Option awards were granted under the 2006 Plan and 2018 Plan.

(2) All of the option awards were granted with a per share exercise price equal to the fair market value of one share of our common stock on the date of grant, as determined in good faith by our board of directors.

(3) Each option award vests as follows: The shares subject to the option vest monthly over 48 months beginning on the one-month anniversary of the vesting commencement date, such that the option shall be fully vested and exercisable on the four-year anniversary of the vesting commencement date.

(4) Each option award vests as follows: 25% of the shares subject to the option vest on the date of grant and the balance of the shares vest in a series of 36 successive equal monthly installments thereafter, provided in each case that the holder is then providing services to us in accordance with the terms of the 2018 Plan.

(5) Each option award vests as follows: 25% of the shares subject to the option are fully vested and 6.25% of the shares subject to the option vest at the end of each three month anniversary of the vesting commencement date, subject to single trigger acceleration of vesting in connection with a change of control, provided in each case that the holder is then providing services to us in accordance with the terms of the 2006 Plan.

(6) All outstanding options under the 2006 option plan, held by Dr. Holmlin and Mr. Ward were amended by our board of directors in August 2018 to suspend the vesting until such time as the price of our common stock is at least \$12.00 per share for 90 consecutive trading days, at which point the suspension will automatically and immediately lapse and the awards will vest to the extent they otherwise would have vested pursuant to their terms and notwithstanding the suspension and will continue to vest thereafter under their original vesting schedules. In addition, the suspension will lapse as to the awards held by Dr. Holmlin or Mr. Ward upon Dr. Holmlin's or Mr. Ward's respective death, disability or upon a change in control of the Company, as such terms are defined in the 2018 Plan.

Perquisites, Health, Welfare and Retirement Benefits

All of our current named executive officers are eligible to participate in our employee benefit plans, including our medical, dental, vision, life, disability and accidental death and dismemberment insurance plans, in each case on the same basis as all of our other employees. We pay the premiums for the life, disability, accidental death and dismemberment insurance for all of our employees, including our named executive officers. In addition, we provide a 401(k) plan to our employees, including our named executive officers, as discussed in the section below entitled “-401(k) Plan.” We generally do not provide perquisites or personal benefits to our named executive officers.

Nonqualified Deferred Compensation

Our named executive officers did not participate in, or earn any benefits under, a nonqualified deferred compensation plan sponsored by us during the fiscal year ended December 31, 2019. Our Board may elect to provide our officers and other employees with nonqualified defined contribution or other nonqualified deferred compensation benefits in the future if it determines that doing so is in our best interests.

Equity Benefit Plans

The principal features of our equity plans are summarized below. These summaries are qualified in their entirety by reference to the actual text of the plans, which are filed as exhibits hereto and incorporated herein by reference.

2018 Equity Incentive Plan

Our 2018 Plan became effective upon the IPO following approval by our Board and our stockholders. As of December 31, 2019, there were 196,731 shares remaining available for the future grant of stock awards under the 2018 Plan. As of December 31, 2019, there were outstanding stock options covering a total of 1,419,177 shares of our common stock that were granted under the 2018 Plan.

Our 2018 Plan provides for the grant of incentive stock options, or ISOs, within the meaning of Section 422 of the Code, to employees, including employees of any parent or subsidiary, and for the grant of nonstatutory stock options, or NSOs, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance stock awards, performance cash awards and other forms of stock awards to employees, directors and consultants, including employees and consultants of our affiliates. Our 2018 Plan is a successor to and continuation of our 2006 Plan. Our compensation committee has the authority, concurrent with our Board, to administer our 2018 Plan, and may also delegate to one or more of our officers certain authority under the terms of the 2018 Plan.

Stock options under the 2018 Plan are generally granted with an exercise price equal to the fair market value of our common stock on the date of grant. Options granted under the 2018 Plan vest at the rate specified in the stock option agreement as determined by the plan administrator. Options may have a term up to a maximum of 10 years. Unless the terms of an optionee’s stock option agreement provides otherwise, if an optionee’s service relationship with us, or any of our affiliates, ceases for any reason other than disability, death or cause, the optionee may generally exercise any vested options for a period of three months following the cessation of service. If an optionee’s service relationship with us, or any of our affiliates, ceases due to disability or death, or an optionee dies within a certain period following cessation of service, the optionee or a beneficiary may generally exercise any vested options for a period of 12 months in the event of disability and 18 months in the event of death. In the event of a termination for cause, options generally terminate immediately upon the termination of the individual. In no event may an option be exercised beyond the expiration of its term.

Our 2018 Plan provides that in the event of certain specified significant corporate transactions (or a change in control, as defined below), unless otherwise provided in an award agreement or other written agreement between us and the award holder, the administrator may take one or more of the following actions with respect to such stock awards:

- arrange for the assumption, continuation, or substitution of a stock award by a successor corporation;
- arrange for the assignment of any reacquisition or repurchase rights held by us to a successor corporation;

- accelerate the vesting, in whole or in part, of the stock award and provide for its termination if not exercised (if applicable) at or before the effective time of the transaction;
- arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by us;
- cancel or arrange for the cancellation of the stock award, to the extent not vested or not exercised before the effective time of the transaction, in exchange for a cash payment, if any, as determined by the board; or
- make a payment, in the form determined by our Board, equal to the excess, if any, of (A) the value of the property the participant would have received on exercise of the award immediately before the effective time of the transaction, over (B) any exercise price payable by the participant in connection with the exercise.

The plan administrator is not obligated to treat all stock awards or portions of stock awards, even those that are of the same type, in the same manner and is not obligated to treat all participants in the same manner.

Under the 2018 Plan, a corporate transaction is generally the consummation of: (1) a sale of all or substantially all of our assets, (2) the sale or disposition of more than 50% of our outstanding securities, (3) a merger or consolidation where we do not survive the transaction, or (4) a merger or consolidation where we do survive the transaction but the shares of our common stock outstanding immediately before such transaction are converted or exchanged into other property by virtue of the transaction.

In the event of a change in control, the board of directors may take any of the above-mentioned actions. Awards granted under the 2018 Plan will not receive automatic acceleration of vesting and exercisability in the event of a change in control, although this treatment may be provided for in an award agreement or other written agreement between the Company and the participant. Under the 2018 Plan, a change in control is generally (1) the acquisition by any person or company of more than 50% of the combined voting power of our then outstanding stock, (2) a merger, consolidation or similar transaction in which our stockholders immediately before the transaction do not own, directly or indirectly, more than 50% of the combined voting power of the surviving entity (or the parent of the surviving entity), (3) a sale, lease, exclusive license or other disposition of all or substantially all of our assets other than to an entity more than 50% of the combined voting power of which is owned by our stockholders, (4) a complete dissolution or liquidation of the Company, or (5) when a majority of our Board becomes comprised of individuals who were not serving on our Board on the date of the underwriting agreement related to the IPO, or the incumbent board, or whose nomination, appointment, or election was not approved by a majority of the incumbent board still in office.

Amended and Restated 2006 Equity Compensation Plan

Our Board adopted and our stockholders originally approved our 2006 Plan in September 2006, and it was subsequently amended and restated in September 2008 and most recently amended in March 2016. No further grants may be made under our 2006 Plan following the IPO, however outstanding awards granted under our 2006 Plan remain subject to the terms of our 2006 Plan and applicable award agreements. As of December 31, 2019, there were options to purchase 323,735 shares of common stock outstanding under the 2006 Plan.

Our 2006 Plan allowed for the grant of ISOs to employees, including employees of any subsidiary, and for the grant of NSOs, stock appreciation rights, restricted stock awards and restricted stock units and other equity awards to employees, directors and consultants, including employees and consultants of our subsidiaries. Our compensation committee has the authority, concurrent with our Board, to administer our 2006 Plan. Unless the terms of an optionee's stock option agreement provides otherwise, if an optionee's service relationship with us, or any of our affiliates, ceases for any reason other than disability, death or cause, the optionee may generally exercise any vested options for a period of three months following the cessation of service. If an optionee's service relationship with us, or any of our affiliates, ceases due to disability or death, or an optionee dies within a certain period following cessation of service, the optionee or a beneficiary may generally exercise any vested options for a period of 12 months in the event of disability or death. In the event of a termination for cause, options generally terminate immediately upon the termination of the individual. In no event may an option be exercised beyond the expiration of its term.

Our 2006 Plan provides that in the event of a change of control, all awards granted under the 2006 Plan shall become fully vested and exercisable (as applicable), unless the board of directors determines otherwise. In the event of a change of control, the administrator may take any of the following actions with respect to any or all outstanding awards: (i) determine that all outstanding options and stock appreciation rights that are not exercised shall be assumed by, or replaced with comparable options by the surviving corporation (or a parent or subsidiary of the surviving corporation), and other outstanding grants that remain in effect after the change of control shall be converted to similar grants of the surviving corporation (or a parent or subsidiary of the surviving corporation), (ii) require that grantees surrender their outstanding options and stock appreciation rights in exchange for one or more payments, in cash or Company stock as determined by the board of directors, in an amount, if any, equal to the amount by which the then fair market value of the shares of Company stock subject to the grantee's unexercised options and stock appreciation rights exceeds the exercise price or base amount of the options and stock appreciation rights, on such terms as the board of directors determines, or (iii) after giving grantees an opportunity to exercise their outstanding options and stock appreciation rights, terminate any or all unexercised options and stock appreciation rights at such time as the board of directors deems appropriate.

Such assumption, surrender or termination shall take place as of the date of the change of control or such other date as the board of directors may specify.

Under the 2006 Plan, a change of control is generally (1) the acquisition by any person or company of more than 50% of the combined voting power of our then outstanding stock, (2) the consummation of a merger or consolidation with another corporation where our stockholders, immediately prior to the merger or consolidation, will not beneficially own, immediately after the merger or consolidation, shares entitling such stockholders to more than 50% of all votes to which all stockholders of the surviving corporation would be entitled in the election of directors, (3) the consummation of a sale or other disposition of all or substantially all of our assets, or (4) the consummation of a liquidation or dissolution.

2018 Employee Stock Purchase Plan

Additional long-term equity incentives are provided through the 2018 Employee Stock Purchase Plan, or the ESPP, which became effective in connection with the IPO. The ESPP is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Code. Our compensation committee has the authority, concurrent with our Board, to administer the ESPP. Under the ESPP, generally all of our regular employees (including our Named Executive Officers during their employment with us) may participate and may contribute, normally through payroll deductions, up to 15% of their earnings for the purchase of our common stock.

The ESPP is implemented through a series of offerings of purchase rights to eligible employees. Under the ESPP, we may specify offerings with a duration of not more than 27 months, and may specify shorter purchase periods within each offering. Each offering will have one or more purchase dates on which our common stock will be purchased for employees participating in the offering. Unless otherwise determined by our compensation committee, shares are purchased for accounts of employees participating in the ESPP at a price per share equal to the lower of (a) 85% of the fair market value of our common stock on the first date of an offering or (b) 85% of the fair market value of our common stock on the date of purchase.

401(k) Plan

We maintain a defined contribution employee retirement plan, or 401(k) plan, for our employees. Our named executive officers are eligible to participate in the 401(k) plan on the same basis as our other employees. The 401(k) plan is intended to qualify as a tax-qualified plan under Section 401(k) of the Code. The plan permits us to make discretionary contributions, including matching contributions and discretionary profit sharing contributions. The 401(k) plan currently does not offer the ability to invest in our securities.

Director Compensation

Our Board adopted a non-employee director compensation policy in July 2018 that became effective upon the IPO and is applicable to each member of our Board who is not also serving as an employee or consultant to the Company. This compensation policy provides that each such non-employee director will receive the following compensation for service on our Board:

- an annual cash retainer of \$30,000;

- an additional annual cash retainer of \$20,000 for service as chairman of the board of directors;
- an additional annual cash retainer of \$15,000, \$10,000 and \$10,000 for service as chair of the Audit Committee, Compensation Committee and the Nominating and Corporate Governance Committee, respectively;
- an additional annual cash retainer of \$7,500, \$5,000 and \$5,000 for service as a member of the Audit Committee, Compensation Committee and the Nominating and Corporate Governance Committee, respectively (not applicable to committee chairs);
- an initial option grant to purchase common stock with an aggregate Black-Scholes option value of \$50,000 on the date of each such non-employee director's appointment to our Board; and
- an annual option grant to purchase common stock with an aggregate Black-Scholes option value of \$35,000 on the date of each of our annual stockholder meetings.

In response to the COVID-19 pandemic, the Compensation Committee of the Board approved a temporary modification to our non-employee director compensation policy such that, effective April 22, 2020 through December 31, 2020, the price of our common stock to be used for the Black-Scholes calculation discussed above shall be the greater of (i) \$1.04 (the closing price of our common stock on February 18, 2020, the most recent date on which we granted stock options with an exercise price not substantially affected by the impacts of the COVID-19 pandemic on our stock price) and (ii) the closing price of our common stock on the date of grant.

Each of the option grants described above will be granted under our 2018 Plan, the terms of which are described in more detail above under "Equity Benefit Plans." Each such option grant will vest and become exercisable subject to the director's continuous service to us, provided that each option will vest in full upon a change in control (as defined in the 2018 Plan). The term of each option will be 10 years, subject to earlier termination as provided in the 2018 Plan, provided that upon a termination of service other than for death, disability or cause, the post-termination exercise period will be 12 months from the date of termination. An eligible director may decline all or any portion of his or her compensation by giving notice to the Company prior to the date cash may be paid or equity awards are to be granted, as the case may be.

We have reimbursed and will continue to reimburse all of our non-employee directors for their reasonable out-of-pocket expenses incurred in attending board of directors and committee meetings. Dr. Holmlin, our President and Chief Executive Officer, is also a director but did not receive any additional compensation for his service as a director.

The following table sets forth in summary form information concerning the compensation that was earned by each of our non-employee directors during the year ended December 31, 2019:

NAME	FEES EARNED OR PAID IN CASH	OPTION AWARDS (\$) ⁽¹⁾	TOTAL (\$)
David L. Barker, Ph.D.	\$67,500	\$35,000	\$102,500
Darren Cai, Ph.D. ⁽²⁾	\$22,458	\$35,000	\$ 57,458
Albert Luderer, Ph.D.	\$47,500	\$35,000	\$ 82,500
Christopher Twomey	\$45,000	\$35,000	\$ 80,000
Junfeng Wang ⁽³⁾	\$40,000	\$35,000	\$ 75,000
Kristiina Vuori, M.D., Ph.D. ⁽⁴⁾	\$16,978	\$50,000	\$ 66,978
Quan Zhou ⁽⁵⁾	\$32,569	\$35,000	\$ 67,569

(1) The amounts reported reflect the aggregate grant date fair value of each equity award granted to our non-employee directors during the fiscal year ended December 31, 2019, as determined in accordance with the provisions of FASB ASC Topic 718. The valuation assumptions used in calculating these amounts are included in Note 8 to our financial statements included elsewhere in this Annual Report. As required by SEC rules, the amounts shown exclude the impact of estimated forfeitures related to service-based vesting conditions. These amounts do not reflect the actual economic value that will be realized by our non-employee directors upon the vesting of the stock options, the exercise of the stock options, or the sale of the common stock underlying such stock options. As of December 31, 2019, the aggregate number of shares outstanding under all options to purchase our common stock held by our non-employee directors were: Dr. Barker, 45,813; Dr. Cai, 6,572; Dr. Luderer 41,608; Mr. Twomey 32,427; Mr. Wang, 32,427; Dr. Vuori 30,274, and Mr. Zhou, 15,044.

(2) Dr. Cai resigned from our board of directors in August 2019.

(3) Mr. Wang resigned from our board of directors in May 2020.

(4) Dr. Vuori was appointed to our board of directors in May 2019.

(5) Mr. Zhou resigned from our board of directors in December 2019.

TRANSACTIONS WITH RELATED PERSONS AND INDEMNIFICATION

RELATED-PERSON TRANSACTIONS POLICY AND PROCEDURES

In 2018, the Company adopted a written Related-Person Transactions Policy that sets forth the Company's policies and procedures regarding the identification, review, consideration and approval or ratification of "related-persons transactions." For purposes of the Company's policy only, a "related-person transaction" is a transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which the Company and any "related person" are participants involving an amount that exceeds \$120,000.

Transactions involving compensation for services provided to the Company as an employee, director, consultant or similar capacity by a related person are not covered by this policy. A related person is any executive officer, director, or more than 5% stockholder of the Company, including any of their immediate family members, and any entity owned or controlled by such persons.

Under the policy, where a transaction has been identified as a related-person transaction, management must present information regarding the proposed related-person transaction to the Audit Committee (or, where Audit Committee approval would be inappropriate, to another independent body of the Board) or the Board for consideration and approval or ratification. The presentation must include a description of, among other things, all of the parties, the direct and indirect interests of the related parties, the purpose of the transaction, the material facts, the benefits of the transaction to us and whether any alternative transactions are available, an assessment of whether the terms are comparable to the terms available from unrelated third parties and management's recommendation. To identify related-person transactions in advance, the Company relies on information supplied by its executive officers, directors and certain significant stockholders. In considering related-person transactions, the Audit Committee takes into account the relevant available facts and circumstances including, but not limited to (a) the risks, costs and benefits to the Company, (b) the impact on a director's independence in the event the related person is a director, immediate family member of a director or an entity with which a director is affiliated, (c) the terms of the transaction, (d) the availability of other sources for comparable services or products and (e) the terms available to or from, as the case may be, unrelated third parties or to or from employees generally.

In the event a director has an interest in the proposed transaction, the director must recuse himself or herself from the deliberations and approval. The policy requires that, in determining whether to approve, ratify or reject a related-person transaction, the Audit Committee consider, in light of known circumstances, whether the transaction is in, or is not inconsistent with, the best interests of the Company and its stockholders, as the Audit Committee determines in the good faith exercise of its discretion.

CERTAIN RELATED-PERSON TRANSACTIONS

Other than compensation arrangements for our directors and executive officers, which are described above under the heading "Executive and Director Compensation," below we describe transactions since January 1, 2018 to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed the lesser of (a) \$120,000 or (b) 1% of the average of our total assets for the fiscal years ended December 31, 2018 or 2019; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or any member of the immediate family of, or person sharing the household with, the foregoing persons, had or will have a direct or indirect material interest.

Convertible Promissory Note Financing

In February 2018, we issued convertible promissory notes in the aggregate principal amount of approximately \$13.4 million with an interest rate of 8% per annum. In August 2018, \$14.9 million of principal and interest outstanding under the convertible promissory notes converted into an aggregate of 3,239,294 shares of common stock upon completion of the IPO.

The participants in this note financing included the following members of our Board and holders of more than 5% of our outstanding capital stock:

Name of Participant	Total Principal Amount
Entities affiliated with LC Fund VI, L.P. ⁽¹⁾	\$8,460,000
Entities affiliated with Domain Partners VIII, L.P. ⁽²⁾	\$1,500,000

(1) Includes (i) \$3,460,000 in cash from LC Healthcare Fund I, L.P.; and (ii) \$5,000,000 cash from Rosy Shine Limited.

(2) Includes (i) \$1,488,952 in cash from Domain Partners VIII, L.P., and (ii) \$11,048 in cash from DP VIII Associates, L.P.

Two of our former directors, Junfeng Wang and Quan Zhou, are affiliated with LC Fund VI, L.P. (and its affiliated entities that participated in the financings described above).

Investors' Rights Agreement

In August 2016, we entered into a fifth amended and restated investors' rights agreement, or the IRA, with certain holders of our preferred stock and common stock, including entities affiliated with LC Fund VI, L.P. and Domain Partners VIII, L.P. and including certain members of, and affiliates of, our directors and certain of our executive officers. The agreement was amended in July and August 2018. The IRA provides the holders of our preferred stock with certain registration rights, including 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. After 12 months following the date of our initial public offering, the holders of 4,948,360 shares of our common stock issuable upon conversion of outstanding preferred stock will be entitled to rights with respect to the registration of their shares of common stock under the Securities Act under this agreement.

Indemnification Agreements

We have entered, and intend to continue to enter, into separate indemnification agreements with our directors and executive officers, in addition to the indemnification provided for in our amended and restated bylaws. These agreements, among other things, require us to indemnify our directors and executive officers for certain expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or executive officer in any action or proceeding arising out of their services as one of our directors or executive officers or as a director or executive officer of any other company or enterprise to which the person provides services at our request. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. A stockholder's investment may decline in value to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

HOUSEHOLDING OF PROXY MATERIALS

The SEC has adopted rules that permit companies and intermediaries (e.g., brokers) to satisfy the delivery requirements for Notices of Internet Availability of Proxy Materials or other Annual Meeting materials with respect to two or more stockholders sharing the same address by delivering a single Notice of Internet Availability of Proxy Materials or other Annual Meeting materials addressed to those stockholders. This process, which is commonly referred to as “householding,” potentially means extra convenience for stockholders and cost savings for companies.

This year, a number of brokers with account holders who are Bionano stockholders will be “householding” the Company’s proxy materials. A single Notice of Internet Availability of Proxy Materials will be delivered to multiple stockholders sharing an address unless contrary instructions have been received from the affected stockholders. Once you have received notice from your broker that they will be “householding” communications to your address, “householding” will continue until you are notified otherwise or until you revoke your consent. If, at any time, you no longer wish to participate in “householding” and would prefer to receive a separate Notice of Internet Availability of Proxy Materials, please notify your broker or Bionano. Direct your written request to the attention of the Secretary of Bionano Genomics, Inc., 9540 Towne Centre Drive, Suite 100, San Diego, CA 92121 or call us at 858-888-7600. Stockholders who currently receive multiple copies of the Notice of Internet Availability of Proxy Materials at their addresses and would like to request “householding” of their communications should contact their brokers.

OTHER MATTERS

The Board knows of no other matters that will be presented for consideration at the Annual Meeting. If any other matters are properly brought before the Annual Meeting, it is the intention of the persons named in the accompanying proxy to vote on such matters in accordance with their best judgment.

By Order of the Board of Directors

/s/ Heather Adams

Heather Adams

Secretary

May 19, 2020

A copy of the Company's Annual Report to the Securities and Exchange Commission on Form 10-K for the fiscal year ended December 31, 2019 is available without charge upon written request to: Secretary of Bionano Genomics, Inc., 9540 Towne Centre Drive, Suite 100, San Diego, CA 92121.

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 50,000,000 shares. 40,000,000 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each ten (10) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-1-2

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 46,363,636 shares. 36,363,636 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each eleven (11) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-2-2

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 43,333,334 shares. 33,333,334 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each twelve (12) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-3-2

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 40,769,230 shares. 30,769,230 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each thirteen (13) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-4-2

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 38,571,428 shares. 28,571,428 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each fourteen (14) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-5-2

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 36,666,667 shares. 26,666,667 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each fifteen (15) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-6-2

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 35,000,000 shares. 25,000,000 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each sixteen (16) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-7-2

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 33,529,412 shares. 23,529,412 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each seventeen (17) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-8-2

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 32,222,222 shares. 22,222,222 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each eighteen (18) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-9-2

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 31,052,632 shares. 21,052,632 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each nineteen (19) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-10-2

**CERTIFICATE OF AMENDMENT
TO THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION OF
BIONANO GENOMICS, INC.**

Bionano Genomics, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), hereby certifies that:

ONE: The name of the Company is Bionano Genomics, Inc. The Company’s Certificate of Incorporation was originally filed with the Secretary of State of the State of Delaware on August 16, 2007 under the name of BioNanomatrix, Inc.

TWO: The Amended and Restated Certificate of Incorporation of the Company (the “*Charter*”) was filed with the Secretary of State of the State of Delaware on August 23, 2018.

THREE: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, duly adopted resolutions to amend the Charter as follows:

1. Article IV, Section A shall be amended and restated to read in its entirety as follows:

“The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 30,000,000 shares. 20,000,000 shares shall be Common Stock, each having a par value of \$0.0001. 10,000,000 shares shall be Preferred Stock, each having a par value of \$0.0001.”

2. Effective as of 5:00 p.m., Eastern time, on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each twenty (20) shares of Common Stock, par value \$0.0001 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value \$0.0001 per share; provided, however, that the Company shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on the Nasdaq Capital Market on the date this Certificate of Amendment to the Amended and Restated Certificate of Incorporation is filed with the Secretary of State of the State of Delaware.

FOUR: Thereafter pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted at an annual meeting of the stockholders of the Company, in accordance with the provisions of Section 242 of the DGCL.

FIVE: All other provisions of the Charter as currently on file with the Secretary of State of the State of Delaware shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused this Certificate of Amendment to be signed by its President and Chief Executive Officer this day of , 2020.

BIONANO GENOMICS, INC.

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

A-11-2

BIONANO GENOMICS, INC.

2018 EQUITY INCENTIVE PLAN

ADOPTED BY THE BOARD OF DIRECTORS: AUGUST 14, 2018

APPROVED BY THE STOCKHOLDERS: AUGUST 14, 2018

IPO DATE: AUGUST 21, 2018

AMENDED BY THE BOARD OF DIRECTORS: MAY 3, 2020

APPROVED BY THE STOCKHOLDERS: [JUNE 30], 2020

1. GENERAL.

(a) **Successor to and Continuation of Prior Plan.** The Plan is intended as the successor to and continuation of the Bionano Genomics, Inc. Amended and Restated 2006 Equity Compensation Plan (the “*Prior Plan*”). From and after 12:01 a.m. Pacific Time on the IPO Date, no additional stock awards will be granted under the Prior Plan. All Awards granted on or after 12:01 a.m. Pacific Time on the IPO Date will be granted under this Plan. All stock awards granted under the Prior Plan will remain subject to the terms of the Prior Plan.

(i) Any shares that would otherwise remain available for future grants under the Prior Plan as of 12:01 a.m. Pacific Time on the IPO Date (the “*Prior Plan’s Available Reserve*”) will cease to be available under the Prior Plan at such time. Instead, that number of shares of Common Stock equal to the Prior Plan’s Available Reserve will be added to the Share Reserve (as further described in Section 3(a) below) and will be immediately available for grants and issuance pursuant to Stock Awards hereunder, up to the maximum number set forth in Section 3(a) below.

(ii) In addition, from and after 12:01 a.m. Pacific Time on the IPO Date, any shares subject, at such time, to outstanding stock awards granted under the Prior Plan that (i) expire or terminate for any reason prior to exercise or settlement; (ii) are forfeited because of the failure to meet a contingency or condition required to vest such shares or otherwise return to the Company; or (iii) are reacquired, withheld (or not issued) to satisfy a tax withholding obligation in connection with an award or to satisfy the purchase price or exercise price of a stock award (such shares the “*Returning Shares*”) will immediately be added to the Share Reserve (as further described in Section 3(a) below) as and when such shares become Returning Shares, up to the maximum number set forth in Section 3(a) below.

(b) **Eligible Award Recipients.** Employees, Directors and Consultants are eligible to receive Awards.

(c) **Available Awards.** The Plan provides for the grant of the following types of Awards: (i) Incentive Stock Options, (ii) Nonstatutory Stock Options, (iii) Stock Appreciation Rights (iv) Restricted Stock Awards, (v) Restricted Stock Unit Awards, (vi) Performance Stock Awards, (vii) Performance Cash Awards, and (viii) Other Stock Awards.

(d) **Purpose.** The Plan, through the granting of Awards, is intended to help the Company secure and retain the services of eligible award recipients, provide incentives for such persons to exert maximum efforts for the success of the Company and any Affiliate and provide a means by which the eligible recipients may benefit from increases in value of the Common Stock.

2. ADMINISTRATION.

(a) **Administration by Board.** The Board will administer the Plan. The Board may delegate administration of the Plan to a Committee or Committees, as provided in Section 2(c).

(b) **Powers of Board.** The Board will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine (A) who will be granted Awards; (B) when and how each Award will be granted; (C) what type of Award will be granted; (D) the provisions of each Award (which need not be identical), including when a person will be permitted to exercise or otherwise receive cash or Common Stock under the Award; (E) the number of shares of Common Stock subject to, or the cash value of, an Award; and (F) the Fair Market Value applicable to a Stock Award.

(ii) To construe and interpret the Plan and Awards granted under it, and to establish, amend and revoke rules and regulations for administration of the Plan and Awards. The Board, in the exercise of these powers, may correct any defect, omission or inconsistency in the Plan or in any Award Agreement or in the written terms of a Performance Cash Award, in a manner and to the extent it will deem necessary or expedient to make the Plan or Award fully effective.

(iii) To settle all controversies regarding the Plan and Awards granted under it.

(iv) To accelerate, in whole or in part, the time at which an Award may be exercised or vest (or the time at which cash or shares of Common Stock may be issued in settlement thereof).

(v) To suspend or terminate the Plan at any time. Except as otherwise provided in the Plan or an Award Agreement, suspension or termination of the Plan will not materially impair a Participant's rights under the Participant's then-outstanding Award without the Participant's written consent except as provided in subsection (viii) below.

(vi) To amend the Plan in any respect the Board deems necessary or advisable, including, without limitation, by adopting amendments relating to Incentive Stock Options and certain nonqualified deferred compensation under Section 409A of the Code and/or bringing the Plan or Awards granted under the Plan into compliance with the requirements for Incentive Stock Options or ensuring that they are exempt from or compliant with the requirements for nonqualified deferred compensation under Section 409A of the Code, subject to the limitations, if any, of applicable law. If required by applicable law or listing requirements, and except as provided in Section 9(a) relating to Capitalization Adjustments, the Company will seek stockholder approval of any amendment of the Plan that (A) materially increases the number of shares of Common Stock available for issuance under the Plan, (B) materially expands the class of individuals eligible to receive Awards under the Plan, (C) materially increases the benefits accruing to Participants under the Plan, (D) materially reduces the price at which shares of Common Stock may be issued or purchased under the Plan, (E) materially extends the term of the Plan, or (F) materially expands the types of Awards available for issuance under the Plan. Except as otherwise provided in the Plan or an Award Agreement, no amendment of the Plan will materially impair a Participant's rights under an outstanding Award without the Participant's written consent.

(vii) To submit any amendment to the Plan for stockholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of (A) Section 422 of the Code regarding incentive stock options or (B) Rule 16b-3.

(viii) To approve forms of Award Agreements for use under the Plan and to amend the terms of any one or more Awards, including, but not limited to, amendments to provide terms more favorable to the Participant than previously provided in the Award Agreement, subject to any specified limits in the Plan that are not subject to Board discretion; *provided however*, that a Participant's rights under any Award will not be impaired by any such amendment unless (A) the Company requests the consent of the affected Participant, and (B) such Participant consents in writing. Notwithstanding the foregoing, (1) a Participant's rights will not be deemed to have been impaired by any such amendment if the Board, in its sole discretion, determines that the amendment, taken as a whole, does not materially impair the Participant's rights, and (2) subject to the limitations of applicable law, if any, the Board may amend the terms of any one or more Awards without the affected Participant's consent (A) to maintain the qualified status of the Award as an Incentive Stock Option under Section 422 of the Code; (B) to change the terms of an Incentive Stock Option, if such change results in impairment of the Award solely because it impairs the qualified status of the Award as an Incentive Stock Option under Section 422 of the Code; (C) to clarify the manner of exemption from, or to bring the Award into compliance with, Section 409A of the Code; or (D) to comply with other applicable laws or listing requirements.

(ix) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Awards.

(x) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees, Directors or Consultants who are foreign nationals or employed outside the United States (provided that Board approval will not be necessary for immaterial modifications to the Plan or any Award Agreement that are required for compliance with the laws of the relevant foreign jurisdiction).

(xi) To effect, with the consent of any adversely affected Participant, (A) the reduction of the exercise, purchase or strike price of any outstanding Stock Award; (B) the cancellation of any outstanding Stock Award and the grant in substitution thereof of a new (1) Option or SAR, (2) Restricted Stock Award, (3) Restricted Stock Unit Award, (4) Other Stock Award, (5) cash and/or (6) other valuable consideration determined by the Board, in its sole discretion, with any such substituted award (x) covering the same or a different number of shares of Common Stock as the cancelled Stock Award and (y) granted under the Plan or another equity or compensatory plan of the Company; or (C) any other action that is treated as a repricing under generally accepted accounting principles.

(c) Delegation to Committee.

(i) **General.** The Board may delegate some or all of the administration of the Plan to a Committee or Committees. If administration of the Plan is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee of the Committee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board will thereafter be to the Committee or subcommittee, as applicable). Any delegation of administrative powers will be reflected in resolutions, not inconsistent with the provisions of the Plan, adopted from time to time by the Board or Committee (as applicable). The Committee may, at any time, abolish the subcommittee and/or revert in the Committee any powers delegated to the subcommittee. The Board may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revert in the Board some or all of the powers previously delegated.

(ii) **Rule 16b-3 Compliance.** The Committee may consist solely of two or more Non-Employee Directors, in accordance with Rule 16b-3.

(d) **Delegation to an Officer.** The Board may delegate to one or more Officers the authority to do one or both of the following (i) designate Employees who are not Officers to be recipients of Options and SARs (and, to the extent permitted by applicable law, other Stock Awards) and, to the extent permitted by applicable law, the terms of such Awards, and (ii) determine the number of shares of Common Stock to be subject to such Stock Awards granted to such Employees; *provided, however*, that the Board resolutions regarding such delegation will specify the total number of shares of Common Stock that may be subject to the Stock Awards granted by such Officer and that such Officer may not grant a Stock Award to himself or herself. Any such Stock Awards will be granted on the form of Stock Award Agreement most recently approved for use by the Committee or the Board, unless otherwise provided in the resolutions approving the delegation authority. The Board may not delegate authority to an Officer who is acting solely in the capacity of an Officer (and not also as a Director) to determine the Fair Market Value pursuant to Section 13(w)(iii) below.

(e) **Effect of Board's Decision.** All determinations, interpretations and constructions made by the Board in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

3. SHARES SUBJECT TO THE PLAN.

(a) **Share Reserve.** Subject to Section 9(a) relating to Capitalization Adjustments, and the following sentence regarding the annual increase, the aggregate number of shares of Common Stock that may be issued pursuant to Stock Awards will not exceed 6,158,257 shares (the "**Share Reserve**"), which number is the sum of (i) 1,000,000 shares originally added to the Share Reserve in connection with the Company's original adoption of the Plan, *plus* (ii) an additional 4,658,803 shares that were approved by the Company's stockholders at the Company's Annual Meeting of Stockholders in 2020, *plus* (iii) the number of shares subject to the Prior Plan's Available Reserve, *plus* (iv) the number of shares that are Returning Shares, as such shares become available from time to time. In addition, the Share Reserve will automatically increase on January 1st of each year, for a period of not more than ten years, commencing on January 1st of the year following the year in which the IPO Date occurs and ending on (and including) January 1, 2028, in an amount equal to 5% of the total number of shares of Capital Stock outstanding on December 31st of the preceding calendar year. Notwithstanding the

foregoing, the Board may act prior to January 1st of a given year to provide that there will be no January 1st increase in the Share Reserve for such year or that the increase in the Share Reserve for such year will be a lesser number of shares of Common Stock than would otherwise occur pursuant to the preceding sentence.

For clarity, the Share Reserve in this Section 3(a) is a limitation on the number of shares of Common Stock that may be issued pursuant to the Plan. Accordingly, this Section 3(a) does not limit the granting of Stock Awards except as provided in Section 7(a). Shares may be issued in connection with a merger or acquisition as permitted by Nasdaq Listing Rule 5635(c) or, if applicable, NYSE Listed Company Manual Section 303A.08, AMEX Company Guide Section 711 or other applicable rule, and such issuance will not reduce the number of shares available for issuance under the Plan.

(b) Reversion of Shares to the Share Reserve. If a Stock Award or any portion thereof (i) expires or otherwise terminates without all of the shares covered by such Stock Award having been issued or (ii) is settled in cash (*i.e.*, the Participant receives cash rather than stock), such expiration, termination or settlement will not reduce (or otherwise offset) the number of shares of Common Stock that may be available for issuance under the Plan. If any shares of Common Stock issued pursuant to a Stock Award are forfeited back to or repurchased or reacquired by the Company for any reason, including because of the failure to meet a contingency or condition required to vest such shares in the Participant, then the shares that are forfeited or repurchased or reacquired will revert to and again become available for issuance under the Plan. Any shares reacquired by the Company in satisfaction of tax withholding obligations on a Stock Award or as consideration for the exercise or purchase price of a Stock Award will again become available for issuance under the Plan.

(c) Incentive Stock Option Limit. Subject to the Share Reserve and Section 9(a) relating to Capitalization Adjustments, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options will be 12,316,514 shares of Common Stock.

(d) Limitation on Grants to Non-Employee Directors. The maximum number of shares of Common Stock subject to Stock Awards granted under the Plan or otherwise during a single calendar year to any Non-Employee Director, taken together with any cash fees paid by the Company to such Non-Employee Director during such calendar year for service on the Board, will not exceed \$500,000 in total value (calculating the value of any such Stock Awards based on the grant date fair value of such Stock Awards for financial reporting purposes), or, with respect to the calendar year in which a Non-Employee Director is first appointed or elected to the Board, \$800,000.

(e) Source of Shares. The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise.

4. ELIGIBILITY.

(a) Eligibility for Specific Stock Awards. Incentive Stock Options may be granted only to employees of the Company or a “parent corporation” or “subsidiary corporation” thereof (as such terms are defined in Sections 424(e) and 424(f) of the Code). Stock Awards other than Incentive Stock Options may be granted to Employees, Directors and Consultants; provided, however, that Stock Awards may not be granted to Employees, Directors and Consultants who are providing Continuous Service only to any “parent” of the Company, as such term is defined in Rule 405 of the Securities Act, unless (i) the stock underlying such Stock Awards is treated as “service recipient stock” under Section 409A of the Code (for example, because the Stock Awards are granted pursuant to a corporate transaction such as a spin off transaction), (ii) the Company, in consultation with its legal counsel, has determined that such Stock Awards are otherwise exempt from Section 409A of the Code, or (iii) the Company, in consultation with its legal counsel, has determined that such Stock Awards comply with the distribution requirements of Section 409A of the Code.

(b) Ten Percent Stockholders. A Ten Percent Stockholder will not be granted an Incentive Stock Option unless the exercise price of such Option is at least 110% of the Fair Market Value on the date of grant and the Option is not exercisable after the expiration of five years from the date of grant.

5. PROVISIONS RELATING TO OPTIONS AND STOCK APPRECIATION RIGHTS.

Each Option or SAR will be in such form and will contain such terms and conditions as the Board deems appropriate. All Options will be separately designated Incentive Stock Options or Nonstatutory Stock Options at the time of grant, and, if certificates are issued, a separate certificate or certificates will be issued for shares of

Common Stock purchased on exercise of each type of Option. If an Option is not specifically designated as an Incentive Stock Option, or if an Option is designated as an Incentive Stock Option but some portion or all of the Option fails to qualify as an Incentive Stock Option under the applicable rules, then the Option (or portion thereof) will be a Nonstatutory Stock Option. The provisions of separate Options or SARs need not be identical; *provided, however*, that each Award Agreement will conform to (through incorporation of provisions hereof by reference in the applicable Award Agreement or otherwise) the substance of each of the following provisions:

(a) Term. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, no Option or SAR will be exercisable after the expiration of ten (10) years from the date of its grant or such shorter period specified in the Award Agreement.

(b) Exercise Price. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, the exercise or strike price of each Option or SAR will be not less than 100% of the Fair Market Value of the Common Stock subject to the Option or SAR on the date the Award is granted. Notwithstanding the foregoing, an Option or SAR may be granted with an exercise or strike price lower than 100% of the Fair Market Value of the Common Stock subject to the Award if such Award is granted pursuant to an assumption of or substitution for another option or stock appreciation right pursuant to a corporate transaction and in a manner consistent with the provisions of Section 409A of the Code and, if applicable, Section 424(a) of the Code. Each SAR will be denominated in shares of Common Stock equivalents.

(c) Purchase Price for Options. The purchase price of Common Stock acquired pursuant to the exercise of an Option may be paid, to the extent permitted by applicable law and as determined by the Board in its sole discretion, by any combination of the methods of payment set forth below. The Board will have the authority to grant Options that do not permit all of the following methods of payment (or otherwise restrict the ability to use certain methods) and to grant Options that require the consent of the Company to use a particular method of payment. The permitted methods of payment are as follows:

(i) by cash, check, bank draft or money order payable to the Company;

(ii) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds;

(iii) by delivery to the Company (either by actual delivery or attestation) of shares of Common Stock;

(iv) if an Option is a Nonstatutory Stock Option, by a “net exercise” arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price; *provided, however*, that the Company will accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued. Shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are used to pay the exercise price pursuant to the “net exercise,” (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) in any other form of legal consideration that may be acceptable to the Board and specified in the applicable Award Agreement.

(d) Exercise and Payment of a SAR. To exercise any outstanding SAR, the Participant must provide written notice of exercise to the Company in compliance with the provisions of the Stock Appreciation Right Agreement evidencing such SAR. The appreciation distribution payable on the exercise of a SAR will be not greater than an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the SAR) of a number of shares of Common Stock equal to the number of Common Stock equivalents in which the Participant is vested under such SAR, and with respect to which the Participant is exercising the SAR on such date, over (B) the aggregate strike price of the number of Common Stock equivalents with respect to which the Participant is exercising the SAR on such date. The appreciation distribution may be paid in Common Stock, in cash, in any combination of the two or in any other form of consideration, as determined by the Board and contained in the Award Agreement evidencing such SAR.

(e) Transferability of Options and SARs. The Board may, in its sole discretion, impose such limitations on the transferability of Options and SARs as the Board will determine. In the absence of such a determination by the Board to the contrary, the following restrictions on the transferability of Options and SARs will apply:

(i) Restrictions on Transfer. An Option or SAR will not be transferable except by will or by the laws of descent and distribution (or pursuant to subsections (ii) and (iii) below), and will be exercisable during the lifetime of the Participant only by the Participant. The Board may permit transfer of the Option or SAR in a manner that is not prohibited by applicable tax and securities laws. Except as explicitly provided herein, neither an Option nor a SAR may be transferred for consideration.

(ii) Domestic Relations Orders. Subject to the approval of the Board or a duly authorized Officer, an Option or SAR may be transferred pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulation Section 1.421-1(b)(2). If an Option is an Incentive Stock Option, such Option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(iii) Beneficiary Designation. Subject to the approval of the Board or a duly authorized Officer, a Participant may, by delivering written notice to the Company, in a form approved by the Company (or the designated broker), designate a third party who, on the death of the Participant, will thereafter be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, upon the death of the Participant, the executor or administrator of the Participant's estate will be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. However, the Company may prohibit designation of a beneficiary at any time, including due to any conclusion by the Company that such designation would be inconsistent with the provisions of applicable laws.

(f) Vesting Generally. The total number of shares of Common Stock subject to an Option or SAR may vest and become exercisable in periodic installments that may or may not be equal. The Option or SAR may be subject to such other terms and conditions on the time or times when it may or may not be exercised (which may be based on the satisfaction of Performance Goals or other criteria) as the Board may deem appropriate. The vesting provisions of individual Options or SARs may vary. The provisions of this Section 5(f) are subject to any Option or SAR provisions governing the minimum number of shares of Common Stock as to which an Option or SAR may be exercised.

(g) Termination of Continuous Service. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates (other than for Cause and other than upon the Participant's death or Disability), the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Award as of the date of termination of Continuous Service) within the period of time ending on the earlier of (i) the date that is three (3) months following the termination of the Participant's Continuous Service (or such longer or shorter period specified in the applicable Award Agreement, which period will not be less than thirty (30) days if necessary to comply with applicable laws unless such termination is for Cause) and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time frame, the Option or SAR will terminate.

(h) Extension of Termination Date. Except as otherwise provided in the applicable Award Agreement or other written agreement between the Participant and the Company, if the exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause and other than upon the Participant's death or Disability) would be prohibited at any time solely because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act, then the Option or SAR will terminate on the earlier of (i) the expiration of a total period of time (that need not be consecutive) equal to the applicable post termination exercise period after the termination of the Participant's Continuous Service during which the exercise of the Option or SAR would not be in violation of such registration requirements, and (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement. In addition, unless otherwise provided in a Participant's Award Agreement, if the sale of any Common Stock received on exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause) would violate the Company's insider trading policy, then the Option or SAR will terminate on the earlier of (i) the

expiration of a period of months (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the sale of the Common Stock received upon exercise of the Option or SAR would not be in violation of the Company's insider trading policy, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement.

(i) Disability of Participant. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates as a result of the Participant's Disability, the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date twelve (12) months following such termination of Continuous Service (or such longer or shorter period specified in the Award Agreement, which period will not be less than six (6) months if necessary to comply with applicable laws) and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR within the applicable time frame, the Option or SAR (as applicable) will terminate.

(j) Death of Participant. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if (i) a Participant's Continuous Service terminates as a result of the Participant's death, or (ii) the Participant dies within the period (if any) specified in the Award Agreement for exercisability after the termination of the Participant's Continuous Service for a reason other than death, then the Option or SAR may be exercised (to the extent the Participant was entitled to exercise such Option or SAR as of the date of death) by the Participant's estate, by a person who acquired the right to exercise the Option or SAR by bequest or inheritance or by a person designated to exercise the Option or SAR upon the Participant's death, but only within the period ending on the earlier of (i) the date eighteen (18) months following the date of death (or such longer or shorter period specified in the Award Agreement, which period will not be less than six (6) months if necessary to comply with applicable laws) and (ii) the expiration of the term of such Option or SAR as set forth in the Award Agreement. If, after the Participant's death, the Option or SAR is not exercised within the applicable time frame, the Option or SAR (as applicable) will terminate.

(k) Termination for Cause. Except as explicitly provided otherwise in a Participant's Award Agreement or other individual written agreement between the Company or any Affiliate and the Participant, if a Participant's Continuous Service is terminated for Cause, the Option or SAR will terminate immediately upon such Participant's termination of Continuous Service, and the Participant will be prohibited from exercising his or her Option or SAR from and after the time of such termination of Continuous Service.

(l) Non-Exempt Employees. If an Option or SAR is granted to an Employee who is a non-exempt employee for purposes of the Fair Labor Standards Act of 1938, as amended, the Option or SAR will not be first exercisable for any shares of Common Stock until at least six (6) months following the date of grant of the Option or SAR (although the Award may vest prior to such date). Consistent with the provisions of the Worker Economic Opportunity Act, (i) if such non-exempt Employee dies or suffers a Disability, (ii) upon a Corporate Transaction in which such Option or SAR is not assumed, continued, or substituted, (iii) upon a Change in Control, or (iv) upon the Participant's retirement (as such term may be defined in the Participant's Award Agreement, in another agreement between the Participant and the Company, or, if no such definition, in accordance with the Company's then current employment policies and guidelines), the vested portion of any Options and SARs may be exercised earlier than six (6) months following the date of grant. The foregoing provision is intended to operate so that any income derived by a non-exempt employee in connection with the exercise or vesting of an Option or SAR will be exempt from his or her regular rate of pay. To the extent permitted and/or required for compliance with the Worker Economic Opportunity Act to ensure that any income derived by a non-exempt employee in connection with the exercise, vesting or issuance of any shares under any other Stock Award will be exempt from the employee's regular rate of pay, the provisions of this Section 5(l) will apply to all Stock Awards and are hereby incorporated by reference into such Stock Award Agreements.

6. PROVISIONS OF STOCK AWARDS OTHER THAN OPTIONS AND SARs.

(a) Restricted Stock Awards. Each Restricted Stock Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. To the extent consistent with the Company's bylaws, at the Board's election, shares of Common Stock may be (i) held in book entry form subject to the Company's instructions until any restrictions relating to the Restricted Stock Award lapse; or (ii) evidenced by a

certificate, which certificate will be held in such form and manner as determined by the Board. The terms and conditions of Restricted Stock Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Award Agreements need not be identical. Each Restricted Stock Award Agreement will conform to (through incorporation of the provisions hereof by reference in the agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. A Restricted Stock Award may be awarded in consideration for (A) cash, check, bank draft or money order payable to the Company, (B) past or future services to the Company or an Affiliate, or (C) any other form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. Shares of Common Stock awarded under the Restricted Stock Award Agreement may be subject to forfeiture to the Company in accordance with a vesting schedule to be determined by the Board.

(iii) Termination of Participant's Continuous Service. If a Participant's Continuous Service terminates, the Company may receive through a forfeiture condition or a repurchase right any or all of the shares of Common Stock held by the Participant as of the date of termination of Continuous Service under the terms of the Restricted Stock Award Agreement.

(iv) Transferability. Rights to acquire shares of Common Stock under the Restricted Stock Award Agreement will be transferable by the Participant only upon such terms and conditions as are set forth in the Restricted Stock Award Agreement, as the Board will determine in its sole discretion, so long as Common Stock awarded under the Restricted Stock Award Agreement remains subject to the terms of the Restricted Stock Award Agreement.

(v) Dividends. A Restricted Stock Award Agreement may provide that any dividends paid on Restricted Stock will be subject to the same vesting and forfeiture restrictions as apply to the shares subject to the Restricted Stock Award to which they relate.

(b) Restricted Stock Unit Awards. Each Restricted Stock Unit Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. The terms and conditions of Restricted Stock Unit Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Unit Award Agreements need not be identical. Each Restricted Stock Unit Award Agreement will conform to (through incorporation of the provisions hereof by reference in the Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. At the time of grant of a Restricted Stock Unit Award, the Board will determine the consideration, if any, to be paid by the Participant upon delivery of each share of Common Stock subject to the Restricted Stock Unit Award. The consideration to be paid (if any) by the Participant for each share of Common Stock subject to a Restricted Stock Unit Award may be paid in any form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. At the time of the grant of a Restricted Stock Unit Award, the Board may impose such restrictions on or conditions to the vesting of the Restricted Stock Unit Award as it, in its sole discretion, deems appropriate.

(iii) Payment. A Restricted Stock Unit Award may be settled by the delivery of shares of Common Stock, their cash equivalent, any combination thereof or in any other form of consideration, as determined by the Board and contained in the Restricted Stock Unit Award Agreement.

(iv) Additional Restrictions. At the time of the grant of a Restricted Stock Unit Award, the Board, as it deems appropriate, may impose such restrictions or conditions that delay the delivery of the shares of Common Stock (or their cash equivalent) subject to a Restricted Stock Unit Award to a time after the vesting of such Restricted Stock Unit Award.

(v) Dividend Equivalents. Dividend equivalents may be credited in respect of shares of Common Stock covered by a Restricted Stock Unit Award, as determined by the Board and contained in the Restricted Stock Unit Award Agreement. At the sole discretion of the Board, such dividend equivalents may be converted into additional shares of Common Stock covered by the Restricted Stock Unit Award in such

manner as determined by the Board. Any additional shares covered by the Restricted Stock Unit Award credited by reason of such dividend equivalents will be subject to all of the same terms and conditions of the underlying Restricted Stock Unit Award Agreement to which they relate.

(vi) Termination of Participant's Continuous Service. Except as otherwise provided in the applicable Restricted Stock Unit Award Agreement or other written agreement between a Participant and the Company or an Affiliate, such portion of the Restricted Stock Unit Award that has not vested will be forfeited upon the Participant's termination of Continuous Service.

(c) Performance Awards.

(i) Performance Stock Awards. A Performance Stock Award is a Stock Award that is payable (including that may be granted, may vest or may be exercised) contingent upon the attainment during a Performance Period of certain Performance Goals. A Performance Stock Award may, but need not, require the Participant's completion of a specified period of Continuous Service. The length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Board or Committee, in its sole discretion. In addition, to the extent permitted by applicable law and the applicable Award Agreement, the Board or the Committee may determine that cash may be used in payment of Performance Stock Awards.

(ii) Performance Cash Awards. A Performance Cash Award is a cash award that is payable contingent upon the attainment during a Performance Period of certain Performance Goals. A Performance Cash Award may also require the completion of a specified period of Continuous Service. At the time of grant of a Performance Cash Award, the length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Board or Committee, in its sole discretion. The Board or Committee may specify the form of payment of Performance Cash Awards, which may be cash or other property, or may provide for a Participant to have the option for his or her Performance Cash Award, or such portion thereof as the Board may specify, to be paid in whole or in part in cash or other property.

(iii) Board Discretion. The Board retains the discretion to adjust or eliminate the compensation or economic benefit due upon attainment of Performance Goals and to define the manner of calculating the Performance Criteria it selects to use for a Performance Period. Partial achievement of the specified criteria may result in the payment or vesting corresponding to the degree of achievement as specified in the Stock Award Agreement or the written terms of a Performance Cash Award.

(d) Other Stock Awards. Other forms of Stock Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof (e.g., options or stock rights with an exercise price or strike price less than 100% of the Fair Market Value of the Common Stock at the time of grant) may be granted either alone or in addition to Stock Awards provided for under Section 5 and the preceding provisions of this Section 6. Subject to the provisions of the Plan, the Board will have sole and complete authority to determine the persons to whom and the time or times at which such Other Stock Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Stock Awards and all other terms and conditions of such Other Stock Awards.

7. COVENANTS OF THE COMPANY.

(a) Availability of Shares. The Company will keep available at all times the number of shares of Common Stock reasonably required to satisfy then-outstanding Stock Awards.

(b) Securities Law Compliance. The Company will seek to obtain from each regulatory commission or agency having jurisdiction over the Plan, as necessary, such authority as may be required to grant Stock Awards and to issue and sell shares of Common Stock upon exercise or vesting of the Stock Awards; *provided, however*, that this undertaking will not require the Company to register under the Securities Act or other securities or applicable laws, the Plan, any Stock Award or any Common Stock issued or issuable pursuant to any such Stock Award. If, after reasonable efforts and at a reasonable cost, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary or advisable for the lawful issuance and sale of Common Stock under the Plan, the Company will be relieved from any liability

for failure to issue and sell Common Stock upon exercise or vesting of such Stock Awards unless and until such authority is obtained. A Participant will not be eligible for the grant of an Award or the subsequent issuance of cash or Common Stock pursuant to the Award if such grant or issuance would be in violation of any applicable securities law.

(c) No Obligation to Notify or Minimize Taxes. The Company will have no duty or obligation to any Participant to advise such holder as to the tax treatment or time or manner of exercising such Stock Award. Furthermore, the Company will have no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of an Award or a possible period in which the Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of an Award to the holder of such Award.

8. MISCELLANEOUS.

(a) Use of Proceeds from Sales of Common Stock. Proceeds from the sale of shares of Common Stock pursuant to Stock Awards will constitute general funds of the Company.

(b) Corporate Action Constituting Grant of Awards. Corporate action constituting a grant by the Company of an Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Board, regardless of when the instrument, certificate, or letter evidencing the Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (e.g., Board consents, resolutions or minutes) documenting the corporate action approving the grant contain terms (e.g., exercise price, vesting schedule or number of shares) that are inconsistent with those in the Award Agreement or related grant documents as a result of a clerical error in the papering of the Award Agreement or related grant documents, the corporate records will control and the Participant will have no legally binding right to the incorrect term in the Award Agreement or related grant documents.

(c) Stockholder Rights. No Participant will be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to an Award unless and until (i) such Participant has satisfied all requirements for exercise of, or the issuance of shares of Common Stock under, the Award pursuant to its terms, and (ii) the issuance of the Common Stock subject to such Award has been entered into the books and records of the Company.

(d) No Employment or Other Service Rights. Nothing in the Plan, any Award Agreement or any other instrument executed thereunder or in connection with any Award granted pursuant thereto will confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Award was granted or will affect the right of the Company or an Affiliate to terminate (i) the employment of an Employee with or without notice and with or without cause, (ii) the service of a Consultant pursuant to the terms of such Consultant's agreement with the Company or an Affiliate, or (iii) the service of a Director pursuant to the bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state or foreign jurisdiction in which the Company or the Affiliate is domiciled or incorporated, as the case may be.

(e) Change in Time Commitment. In the event a Participant's regular level of time commitment in the performance of his or her services for the Company and any Affiliates is reduced (for example, and without limitation, if the Participant is an Employee of the Company and the Employee has a change in status from a full-time Employee to a part-time Employee or takes an extended leave of absence) after the date of grant of any Award to the Participant, the Board has the right in its sole discretion to (x) make a corresponding reduction in the number of shares or cash amount subject to any portion of such Award that is scheduled to vest or become payable after the date of such change in time commitment, and (y) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Award that is so reduced or extended.

(f) Incentive Stock Option Limitations. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Optionholder during any calendar year (under all plans of the Company and any Affiliates) exceeds \$100,000 (or such other limit established in the Code) or otherwise does not comply with the rules governing Incentive Stock Options, the Options or portions thereof that exceed such limit (according to the order in which they were granted) or otherwise do not comply with such rules will be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Option Agreement(s).

(g) Investment Assurances. The Company may require a Participant, as a condition of exercising or acquiring Common Stock under any Award, (i) to give written assurances satisfactory to the Company as to the Participant's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that such Participant is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Award; and (ii) to give written assurances satisfactory to the Company stating that the Participant is acquiring Common Stock subject to the Award for the Participant's own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, will be inoperative if (A) the issuance of the shares upon the exercise or acquisition of Common Stock under the Stock Award has been registered under a then currently effective registration statement under the Securities Act, or (B) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

(h) Withholding Obligations. Unless prohibited by the terms of an Award Agreement, the Company may, in its sole discretion, satisfy any federal, state or local tax withholding obligation relating to an Award by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Participant in connection with the Stock Award; *provided, however,* that no shares of Common Stock are withheld with a value exceeding the maximum amount of tax required to be withheld by law (or such lesser amount as may be necessary to avoid classification of the Stock Award as a liability for financial accounting purposes); (iii) withholding cash from an Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant; or (v) by such other method as may be set forth in the Award Agreement.

(i) Electronic Delivery. Any reference herein to a "written" agreement or document will include any agreement or document delivered electronically, filed publicly at www.sec.gov (or any successor website thereto) or posted on the Company's intranet (or other shared electronic medium controlled by the Company to which the Participant has access).

(j) Deferrals. To the extent permitted by applicable law, the Board, in its sole discretion, may determine that the delivery of Common Stock or the payment of cash, upon the exercise, vesting or settlement of all or a portion of any Award may be deferred and may establish programs and procedures for deferral elections to be made by Participants. Deferrals by Participants will be made in accordance with Section 409A of the Code. Consistent with Section 409A of the Code, the Board may provide for distributions while a Participant is still an employee or otherwise providing services to the Company. The Board is authorized to make deferrals of Awards and determine when, and in what annual percentages, Participants may receive payments, including lump sum payments, following the Participant's termination of Continuous Service, and implement such other terms and conditions consistent with the provisions of the Plan and in accordance with applicable law.

(k) Clawback/Recovery. All Awards granted under the Plan will be subject to recoupment in accordance with any clawback policy that the Company is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company's securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Board may impose such other clawback, recovery or recoupment provisions in an Award Agreement as the Board determines necessary or appropriate, including but not limited to a reacquisition right in respect of previously acquired shares of Common Stock or other cash or property upon the occurrence of an event constituting Cause. No recovery of compensation under such a clawback policy will be an event giving rise to a right to voluntarily terminate employment upon a "resignation for good reason," or for a "constructive termination" or any similar term under any plan of or agreement with the Company.

(l) Compliance with Section 409A of the Code. Unless otherwise expressly provided for in an Award Agreement, the Plan and Award Agreements will be interpreted to the greatest extent possible in a manner that makes the Plan and the Awards granted hereunder exempt from Section 409A of the Code, and, to the extent not so exempt, in compliance with Section 409A of the Code. If the Board determines that any Award granted hereunder is not exempt from and is therefore subject to Section 409A of the Code, the Award Agreement

evidencing such Award will incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code, and to the extent an Award Agreement is silent on terms necessary for compliance, such terms are hereby incorporated by reference into the Award Agreement. Notwithstanding anything to the contrary in this Plan (and unless the Award Agreement specifically provides otherwise), if the shares of Common Stock are publicly traded, and if a Participant holding an Award that constitutes “deferred compensation” under Section 409A of the Code is a “specified employee” for purposes of Section 409A of the Code, no distribution or payment of any amount that is due because of a “separation from service” (as defined in Section 409A of the Code without regard to alternative definitions thereunder) will be issued or paid before the date that is six months following the date of such Participant’s “separation from service” or, if earlier, the date of the Participant’s death, unless such distribution or payment can be made in a manner that complies with Section 409A of the Code, and any amounts so deferred will be paid in a lump sum on the day after such six month period elapses, with the balance paid thereafter on the original schedule.

9. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; OTHER CORPORATE EVENTS.

(a) Capitalization Adjustments. In the event of a Capitalization Adjustment, the Board will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a), (ii) the class(es) and maximum number of securities by which the share reserve is to increase automatically each year pursuant to Section 3(a), (iii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of Incentive Stock Options pursuant to Section 3(c), and (iv) the class(es) and number of securities and price per share of stock subject to outstanding Stock Awards. The Board will make such adjustments, and its determination will be final, binding and conclusive.

(b) Dissolution. Except as otherwise provided in the Stock Award Agreement, in the event of a Dissolution of the Company, all outstanding Stock Awards (other than Stock Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company’s right of repurchase) will terminate immediately prior to the completion of such Dissolution, and the shares of Common Stock subject to the Company’s repurchase rights or subject to a forfeiture condition may be repurchased or reacquired by the Company notwithstanding the fact that the holder of such Stock Award is providing Continuous Service; *provided, however*, that the Board may, in its sole discretion, cause some or all Stock Awards to become fully vested, exercisable and/or no longer subject to repurchase or forfeiture (to the extent such Stock Awards have not previously expired or terminated) before the Dissolution is completed but contingent on its completion.

(c) Transaction. The following provisions will apply to Stock Awards in the event of a Transaction unless otherwise provided in the instrument evidencing the Stock Award or any other written agreement between the Company or any Affiliate and the Participant or unless otherwise expressly provided by the Board at the time of grant of a Stock Award. In the event of a Transaction, then, notwithstanding any other provision of the Plan, the Board may take one or more of the following actions with respect to Stock Awards, contingent upon the closing or completion of the Transaction:

(i) arrange for the surviving corporation or acquiring corporation (or the surviving or acquiring corporation’s parent company) to assume or continue the Stock Award or to substitute a similar stock award for the Stock Award (including, but not limited to, an award to acquire the same consideration paid to the stockholders of the Company pursuant to the Transaction);

(ii) arrange for the assignment of any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to the Stock Award to the surviving corporation or acquiring corporation (or the surviving or acquiring corporation’s parent company);

(iii) accelerate the vesting, in whole or in part, of the Stock Award (and, if applicable, the time at which the Stock Award may be exercised) to a date prior to the effective time of such Transaction as the Board determines (or, if the Board does not determine such a date, to the date that is five days prior to the effective date of the Transaction), with such Stock Award terminating if not exercised (if applicable) at or prior to the effective time of the Transaction; *provided, however*, that the Board may require Participants to complete and deliver to the Company a notice of exercise before the effective date of a Transaction, which exercise is contingent upon the effectiveness of such Transaction;

(iv) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by the Company with respect to the Stock Award;

(v) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the Transaction, in exchange for such cash consideration, if any, as the Board, in its sole discretion, may consider appropriate; and

(vi) make a payment, in such form as may be determined by the Board equal to the excess, if any, of (A) the value of the property the Participant would have received upon the exercise of the Stock Award immediately prior to the effective time of the Transaction, over (B) any exercise price payable by such holder in connection with such exercise. For clarity, this payment may be \$0 if the value of the property is equal to or less than the exercise price. Payments under this provision may be delayed to the same extent that payment of consideration to the holders of the Company's Common Stock in connection with the Transaction is delayed as a result of escrows, earn outs, holdbacks or any other contingencies.

The Board need not take the same action or actions with respect to all Stock Awards or portions thereof or with respect to all Participants. The Board may take different actions with respect to the vested and unvested portions of a Stock Award.

(d) **Change in Control.** A Stock Award may be subject to additional acceleration of vesting and exercisability upon or after a Change in Control as may be provided in the Stock Award Agreement for such Stock Award or as may be provided in any other written agreement between the Company or any Affiliate and the Participant, but in the absence of such provision, no such acceleration will automatically occur.

10. PLAN TERM; EARLIER TERMINATION OR SUSPENSION OF THE PLAN.

The Board may suspend or terminate the Plan at any time. No Incentive Stock Options may be granted after the tenth anniversary of the earlier of (i) the date the Plan is adopted by the Board (the "**Adoption Date**"), or (ii) the date the Plan is approved by the stockholders of the Company. No Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

11. EXISTENCE OF THE PLAN; TIMING OF FIRST GRANT OR EXERCISE.

The Plan will come into existence on the Adoption Date; *provided, however*, that no Stock Award may be granted prior to the IPO Date. In addition, no Stock Award will be exercised (or, in the case of a Restricted Stock Award, Restricted Stock Unit Award, Performance Share Award, or Other Stock Award, no Stock Award will be granted) and no Performance Cash Award will be settled unless and until the Plan has been approved by the stockholders of the Company, which approval will be within 12 months after the date the Plan is adopted by the Board.

12. CHOICE OF LAW.

The laws of the State of Delaware will govern all questions concerning the construction, validity and interpretation of this Plan, without regard to that state's conflict of laws rules.

13. DEFINITIONS. AS USED IN THE PLAN, THE FOLLOWING DEFINITIONS WILL APPLY TO THE CAPITALIZED TERMS INDICATED BELOW:

(a) "**Affiliate**" means, at the time of determination, any "parent" or "subsidiary" of the Company as such terms are defined in Rule 405 of the Securities Act. The Board will have the authority to determine the time or times at which "parent" or "subsidiary" status is determined within the foregoing definition.

(b) "**Award**" means a Stock Award or a Performance Cash Award.

(c) "**Award Agreement**" means a written agreement between the Company and a Participant evidencing the terms and conditions of an Award.

(d) "**Board**" means the Board of Directors of the Company.

(e) "**Capital Stock**" means each and every class of common stock of the Company, regardless of the number of votes per share.

(f) "**Capitalization Adjustment**" means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Stock Award after the Adoption Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock

split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or any similar equity restructuring transaction, as that term is used in Statement of Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(g) **“Cause”** shall have the meaning ascribed to such term in any written agreement between the Participant and the Company defining such term and, in the absence of such agreement, such term means, with respect to a Participant, the occurrence of any of the following events: (i) such Participant’s commission of any felony or any crime involving fraud, dishonesty or moral turpitude under the laws of the United States or any state thereof; (ii) such Participant’s attempted commission of, or participation in, a fraud or act of dishonesty against the Company; (iii) such Participant’s intentional, material violation of any contract or agreement between the Participant and the Company or of any statutory duty owed to the Company; (iv) such Participant’s unauthorized use or disclosure of the Company’s confidential information or trade secrets; or (v) such Participant’s gross misconduct. The determination that a termination of the Participant’s Continuous Service is either for Cause or without Cause shall be made by the Company, in its sole discretion. Any determination by the Company that the Continuous Service of a Participant was terminated with or without Cause for the purposes of outstanding Awards held by such Participant shall have no effect upon any determination of the rights or obligations of the Company or such Participant for any other purpose.

(h) **“Change in Control”** means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) any Exchange Act Person becomes the Owner, directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company’s then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control will not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company, (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Exchange Act Person that acquires the Company’s securities in a transaction or series of related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities, (C) on account of the acquisition of securities of the Company by any individual who is, on the IPO Date, either an executive officer or a Director (either, an **“IPO Investor”**) and/or any entity in which an IPO Investor has a direct or indirect interest (whether in the form of voting rights or participation in profits or capital contributions) of more than 50% (collectively, the **“IPO Entities”**) or on account of the IPO Entities continuing to hold shares that come to represent more than 50% of the combined voting power of the Company’s then outstanding securities as a result of the conversion of any class of the Company’s securities into another class of the Company’s securities having a different number of votes per share pursuant to the conversion provisions set forth in the Company’s Amended and Restated Certificate of Incorporation; or (D) solely because the level of Ownership held by any Exchange Act Person (the **“Subject Person”**) exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control will be deemed to occur;

(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not Own, directly or indirectly, either (A) outstanding voting securities representing more than 50% of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than 50% of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar transaction, in each case in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such transaction; *provided, however*, that

a merger, consolidation or similar transaction will not constitute a Change in Control under this prong of the definition if the outstanding voting securities representing more than 50% of the combined voting power of the surviving Entity or its parent are owned by the IPO Entities;

(iii) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries to an Entity, more than 50% of the combined voting power of the voting securities of which are Owned by stockholders of the Company in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such sale, lease, license or other disposition; *provided, however*, that a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries will not constitute a Change in Control under this prong of the definition if the outstanding voting securities representing more than 50% of the combined voting power of the acquiring Entity or its parent are owned by the IPO Entities;

(iv) the stockholders of the Company approve or the Board approves a plan of complete dissolution or liquidation of the Company, or a complete dissolution or liquidation of the Company will otherwise occur, except for a liquidation into a parent corporation; or

(v) individuals who, on the IPO Date, are members of the Board (the “**Incumbent Board**”) cease for any reason to constitute at least a majority of the members of the Board; *provided, however*, that if the appointment or election (or nomination for election) of any new Board member was approved or recommended by a majority vote of the members of the Incumbent Board then still in office, such new member will, for purposes of this Plan, be considered as a member of the Incumbent Board.

Notwithstanding the foregoing definition or any other provision of the Plan, (A) the term Change in Control will not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company and (B) the definition of Change in Control (or any analogous term) in an individual written agreement between the Company or any Affiliate and the Participant will supersede the foregoing definition with respect to Awards subject to such agreement; *provided, however*, that if no definition of Change in Control or any analogous term is set forth in such an individual written agreement, the foregoing definition will apply.

(i) “**Code**” means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(j) “**Committee**” means a committee of one or more Directors to whom authority has been delegated by the Board in accordance with Section 2(c).

(k) “**Common Stock**” means, as of the IPO Date, the common stock of the Company, having one vote per share.

(l) “**Company**” means Bionano Genomics, Inc., a Delaware corporation.

(m) “**Consultant**” means any person, including an advisor, who is (i) engaged by the Company or an Affiliate to render consulting or advisory services and is compensated for such services, or (ii) serving as a member of the board of directors of an Affiliate and is compensated for such services. However, service solely as a Director, or payment of a fee for such service, will not cause a Director to be considered a “Consultant” for purposes of the Plan. Notwithstanding the foregoing, a person is treated as a Consultant under this Plan only if a Form S-8 Registration Statement under the Securities Act is available to register either the offer or the sale of the Company’s securities to such person.

(n) “**Continuous Service**” means that the Participant’s service with the Company or an Affiliate, whether as an Employee, Director or Consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Consultant or Director or a change in the entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant’s service with the Company or an Affiliate, will not terminate a Participant’s Continuous Service; *provided, however*, that if the Entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Board, in its sole discretion, such Participant’s Continuous Service will be considered to have terminated on the date such Entity ceases to qualify as an Affiliate. To the extent permitted by law, the Board or the chief executive officer of the Company, in that party’s sole discretion, may determine whether

Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Board or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate, or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in an Award only to such extent as may be provided in the Company's leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law.

(o) **"Corporate Transaction"** means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) a sale or other disposition of all or substantially all, as determined by the Board, in its sole discretion, of the consolidated assets of the Company and its Subsidiaries;

(ii) a sale or other disposition of more than 50% of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

(p) **"Director"** means a member of the Board.

(q) **"Disability"** means, with respect to a Participant, the inability of such Participant to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or that has lasted or can be expected to last for a continuous period of not less than 12 months, as provided in Sections 22(e)(3) and 409A(a)(2)(c)(i) of the Code, and will be determined by the Board on the basis of such medical evidence as the Board deems warranted under the circumstances.

(r) **"Dissolution"** means when the Company, after having executed a certificate of dissolution with the State of Delaware (or other applicable state), has completely wound up its affairs. Conversion of the Company into a Limited Liability Company (or any other pass-through entity) will not be considered a "Dissolution" for purposes of the Plan.

(s) **"Employee"** means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an "Employee" for purposes of the Plan.

(t) **"Entity"** means a corporation, partnership, limited liability company or other entity.

(u) **"Exchange Act"** means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(v) **"Exchange Act Person"** means any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act), except that "Exchange Act Person" will not include (i) the Company or any Subsidiary of the Company, (ii) any employee benefit plan of the Company or any Subsidiary of the Company or any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any Subsidiary of the Company, (iii) an underwriter temporarily holding securities pursuant to a registered public offering of such securities, (iv) an Entity Owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their Ownership of stock of the Company; or (v) any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act) that, as of the IPO Date, is the Owner, directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company's then outstanding securities.

(w) **“Fair Market Value”** means, as of any date, the value of the Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value of a share of Common Stock will be, unless otherwise determined by the Board, the closing sales price for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in a source the Board deems reliable.

(ii) Unless otherwise provided by the Board, if there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value will be the closing selling price on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, the Fair Market Value will be determined by the Board in good faith and in a manner that complies with Sections 409A and 422 of the Code.

(x) **“Incentive Stock Option”** means an option granted pursuant to Section 5 of the Plan that is intended to be, and qualifies as, an “incentive stock option” within the meaning of Section 422 of the Code.

(y) **“IPO Date”** means the date of the underwriting agreement between the Company and the underwriter(s) managing the initial public offering of securities of the Company, pursuant to which such securities are priced for the initial public offering.

(z) **“Non-Employee Director”** means a Director who either (i) is not a current employee or officer of the Company or an Affiliate, does not receive compensation, either directly or indirectly, from the Company or an Affiliate for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act (“Regulation S-K”)), does not possess an interest in any other transaction for which disclosure would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship for which disclosure would be required pursuant to Item 404(b) of Regulation S-K; or (ii) is otherwise considered a “non-employee director” for purposes of Rule 16b-3.

(aa) **“Nonstatutory Stock Option”** means any Option granted pursuant to Section 5 of the Plan that does not qualify as an Incentive Stock Option.

(bb) **“Officer”** means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act.

(cc) **“Option”** means an Incentive Stock Option or a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(dd) **“Option Agreement”** means a written agreement between the Company and an Optionholder evidencing the terms and conditions of an Option grant. Each Option Agreement will be subject to the terms and conditions of the Plan.

(ee) **“Optionholder”** means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(ff) **“Other Stock Award”** means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(d).

(gg) **“Other Stock Award Agreement”** means a written agreement between the Company and a holder of an Other Stock Award evidencing the terms and conditions of an Other Stock Award grant. Each Other Stock Award Agreement will be subject to the terms and conditions of the Plan.

(hh) **“Own,” “Owned,” “Owner,” “Ownership”** means a person or Entity will be deemed to “Own,” to have “Owned,” to be the “Owner” of, or to have acquired “Ownership” of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(ii) **“Participant”** means a person to whom an Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Stock Award.

(jj) **“Performance Cash Award”** means an award of cash granted pursuant to the terms and conditions of Section 6(c)(ii).

(kk) **“Performance Criteria”** means the one or more criteria that the Board will select for purposes of establishing the Performance Goals for a Performance Period. The Performance Criteria that will be used to establish such Performance Goals may be based on any one of, or combination of, the following as determined by the Board: (i) sales; (ii) revenues; (iii) assets; (iv) expenses; (v) market penetration or expansion; (vi) earnings from operations; (vii) earnings before or after deduction for all or any portion of interest, taxes, depreciation, amortization, incentives, service fees or extraordinary or special items, whether or not on a continuing operations or an aggregate or per share basis; (viii) net income or net income per common share (basic or diluted); (ix) return on equity, investment, capital or assets; (x) one or more operating ratios; (xi) borrowing levels, leverage ratios or credit rating; (xii) market share; (xiii) capital expenditures; (xiv) cash flow, free cash flow, cash flow return on investment, or net cash provided by operations; (xv) stock price, dividends or total stockholder return; (xvi) development of new technologies or products; (xvii) sales of particular products or services; (xviii) economic value created or added; (xix) operating margin or profit margin; (xx) customer acquisition or retention; (xxi) raising or refinancing of capital; (xxii) successful hiring of key individuals; (xxiii) resolution of significant litigation; (xxiv) acquisitions and divestitures (in whole or in part); (xxv) joint ventures and strategic alliances; (xxvi) spin-offs, split-ups and the like; (xxvii) reorganizations; (xxviii) recapitalizations, restructurings, financings (issuance of debt or equity) or refinancings; (xxix) or strategic business criteria, consisting of one or more objectives based on the following goals: achievement of timely development, design management or enrollment, meeting specified market penetration or value added, payor acceptance, patient adherence, peer reviewed publications, issuance of new patents, establishment of or securing of licenses to intellectual property, product development or introduction (including, without limitation, discovery of novel products, maintenance of multiple products in pipeline, product launch or other product development milestones), geographic business expansion, cost targets, cost reductions or savings, customer satisfaction, operating efficiency, acquisition or retention, employee satisfaction, information technology, corporate development (including, without limitation, licenses, innovation, research or establishment of third party collaborations), manufacturing or process development, legal compliance or risk reduction, patent application or issuance goals, or goals relating to acquisitions, divestitures or other business combinations (in whole or in part), joint ventures or strategic alliances; and (xxx) other measures of performance selected by the Board.

(ll) **“Performance Goals”** means, for a Performance Period, the one or more goals established by the Board for the Performance Period based upon the Performance Criteria. Performance Goals may be based on a Company-wide basis, with respect to one or more business units, divisions, Affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. The Board is authorized at any time in its sole discretion, to adjust or modify the calculation of a Performance Goal for such Performance Period in order to prevent the dilution or enlargement of the rights of Participants, (a) in the event of, or in anticipation of, any unusual or extraordinary corporate item, transaction, event or development; (b) in recognition of, or in anticipation of, any other unusual or nonrecurring events affecting the Company, or the financial statements of the Company in response to, or in anticipation of, changes in applicable laws, regulations, accounting principles, or business conditions; or (c) in view of the Board’s assessment of the business strategy of the Company, performance of comparable organizations, economic and business conditions, and any other circumstances deemed relevant. Specifically, the Board is authorized to make adjustment in the method of calculating attainment of Performance Goals and objectives for a Performance Period as follows: (i) to exclude the dilutive effects of acquisitions or joint ventures; (ii) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a Performance Period following such divestiture; and (iii) to exclude the effect of any change in the outstanding shares of common stock of the Company by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends. In addition, the Board is authorized to make adjustment in the method of calculating attainment of Performance Goals and objectives for a Performance Period as follows: (i) to exclude restructuring and/or other nonrecurring charges; (ii) to exclude exchange rate effects, as applicable, for non-U.S. dollar denominated net sales and operating earnings; (iii) to exclude the effects of changes to generally accepted accounting standards

required by the Financial Accounting Standards Board; (iv) to exclude the effects of any items that are “unusual” in nature or occur “infrequently” as determined under generally accepted accounting principles; (v) to exclude the effects to any statutory adjustments to corporate tax rates; and (vi) to make other appropriate adjustments selected by the Board.

(mm) “Performance Period” means the period of time selected by the Board over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant’s right to and the payment of a Stock Award or a Performance Cash Award. Performance Periods may be of varying and overlapping duration, at the sole discretion of the Board.

(nn) “Performance Stock Award” means a Stock Award granted under the terms and conditions of Section 6(c)(i).

(oo) “Plan” means this Bionano Genomics, Inc. 2018 Equity Incentive Plan, as amended.

(pp) “Restricted Stock Award” means an award of shares of Common Stock, which is granted pursuant to the terms and conditions of Section 6(a).

(qq) “Restricted Stock Award Agreement” means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. Each Restricted Stock Award Agreement will be subject to the terms and conditions of the Plan.

(rr) “Restricted Stock Unit Award” means a right to receive shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(ss) “Restricted Stock Unit Award Agreement” means a written agreement between the Company and a holder of a Restricted Stock Unit Award evidencing the terms and conditions of a Restricted Stock Unit Award grant. Each Restricted Stock Unit Award Agreement will be subject to the terms and conditions of the Plan.

(tt) “Rule 16b-3” means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(uu) “Securities Act” means the Securities Act of 1933, as amended.

(vv) “Stock Appreciation Right” or “SAR” means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(ww) “Stock Appreciation Right Agreement” means a written agreement between the Company and a holder of a Stock Appreciation Right evidencing the terms and conditions of a Stock Appreciation Right grant. Each Stock Appreciation Right Agreement will be subject to the terms and conditions of the Plan.

(xx) “Stock Award” means any right to receive Common Stock granted under the Plan, including an Incentive Stock Option, a Nonstatutory Stock Option, a Restricted Stock Award, a Restricted Stock Unit Award, a Stock Appreciation Right, a Performance Stock Award or any Other Stock Award.

(yy) “Stock Award Agreement” means a written agreement between the Company and a Participant evidencing the terms and conditions of a Stock Award grant. Each Stock Award Agreement will be subject to the terms and conditions of the Plan.

(zz) “Subsidiary” means, with respect to the Company, (i) any corporation of which more than 50% of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than 50%.

(aaa) “Ten Percent Stockholder” means a person who Owns (or is deemed to Own pursuant to Section 424(d) of the Code) stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or any Affiliate.

(bbb) “Transaction” means a Corporate Transaction or a Change in Control.

BIONANO GENOMICS, INC.
 9540 TOWNE CENTRE DRIVE
 SUITE 100
 SAN DIEGO, CA 92121

VOTE BY INTERNET

Before The Meeting - Go to www.proxyvote.com

Use the Internet to transmit your voting instructions and for electronic delivery of information up until 11:59 p.m. Eastern Time on June 29, 2020. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

During The Meeting - Go to www.virtualshareholdermeeting.com/BNGO2020

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

VOTE BY PHONE - 1-800-690-6903

Use any touch-tone telephone to transmit your voting instructions up until 11:59 p.m. Eastern Time on June 29, 2020. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL

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

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

D17519-P40587

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

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

<p>BIONANO GENOMICS, INC.</p> <p>The Board of Directors recommends you vote FOR the following:</p> <p>3. Election of Class II Directors</p> <p>Nominees:</p> <p>01) Albert Luderer 02) Kristiina Vuori 03) Hannah Mamuszka</p>	<p>For All</p> <p><input type="checkbox"/></p>	<p>Withhold All</p> <p><input type="checkbox"/></p>	<p>For All Except</p> <p><input type="checkbox"/></p>	<p>To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.</p> <p>_____</p>
<p>The Board of Directors recommends you vote FOR proposals 1 and 2.</p> <p>1. To approve a series of alternate amendments to the Company's Amended and Restated Certificate of Incorporation, to effect, at the discretion of the Company's Board of Directors: (i) a reverse split of the Company's common stock, whereby each outstanding 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20 shares of common stock would be combined and converted into one share of common stock; and (ii) for reverse splits in the range of 1-for-10 to 1-for-20, a reduction in the number of authorized shares of common stock from 200,000,000 to 40,000,000, 36,363,636, 33,333,334, 30,769,230, 28,571,428, 26,666,667, 25,000,000, 23,529,412, 22,222,222, 21,052,632 and 20,000,000 shares, respectively.</p> <p>2. To approve an amendment to the Company's 2018 Equity Incentive Plan, or the 2018 Plan, to, among other things, increase the number of shares of common stock authorized for issuance under the 2018 Plan by 4,658,803 shares (before any adjustment for any reverse stock split).</p>	<p>For</p> <p><input type="checkbox"/></p>	<p>Against</p> <p><input type="checkbox"/></p>	<p>Abstain</p> <p><input type="checkbox"/></p>	<p>The Board of Directors recommends you vote FOR proposal 4.</p> <p>4. To ratify the selection of BDO USA, LLP by the Audit Committee of the Board of Directors to serve as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2020.</p> <p>NOTE: In his best judgment, the proxy is authorized to vote upon such other business as may properly come before the Annual Meeting. This proxy, when properly executed, will be voted as directed herein by the undersigned stockholder. If no direction is made but the card is signed, this proxy will be voted FOR proposals 1 and 2, FOR all nominees in proposal 3 and FOR proposal 4.</p>
<p>Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.</p>				
Signature [PLEASE SIGN WITHIN BOX]	Date	Signature (Joint Owners)		Date

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:

The Notice and Proxy Statement and Annual Report are available at www.proxyvote.com.

D17520-P40587

**BIONANO GENOMICS, INC.
Annual Meeting of Stockholders
June 30, 2020, 10:00 AM (Local Time)
This proxy is solicited on behalf of the Board of Directors**

The undersigned hereby appoints R. Erik Holmlin, Ph.D. as the true and lawful attorney of the undersigned, with full power of substitution and revocation, and authorizes him to represent and to vote, as designated on the reverse side of this ballot, all the shares of capital stock of Bionano Genomics, Inc. which the undersigned is entitled to vote at the Annual Meeting of Stockholders to be held virtually, via live webcast at www.virtualshareholdermeeting.com/BNGO2020, on Tuesday, June 30, 2020, at 10:00 AM Local Time, and any adjournment or postponement thereof.

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

In his discretion, the proxy is authorized to vote upon such other business as may properly come before the meeting.

Votes must be received by 11:59 P.M., Eastern Time, on June 29, 2020.

Continued and to be signed on reverse side