
**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

INTREXON CORPORATION

(Name of Registrant as Specified In Its Charter)

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

Payment of Filing Fee (Check the appropriate box):

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

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

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

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

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Fee paid previously with preliminary materials.

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(1) Amount Previously Paid:

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

(3) Filing Party:

(4) Date Filed:



INTREXON CORPORATION
20374 Seneca Meadows Parkway
Germantown, Maryland 20876

NOTICE OF 2019 ANNUAL MEETING OF SHAREHOLDERS
To Be Held On June 12, 2019

To Our Shareholders:

You are cordially invited to attend the Annual Meeting of Shareholders (the “Annual Meeting”) of Intrexon Corporation (the “Company”) to be held at 9:00 a.m., Eastern Time, Wednesday, June 12, 2019, at the Esperante Conference Center, 222 Lakeview Avenue, West Palm Beach, Florida 33401, for the following purposes:

1. To elect the nine nominees named in the accompanying Proxy Statement to the Board of Directors, each to serve a one-year term expiring at the earlier of the next Annual Meeting or until his or her successor is duly elected and qualified;
2. To ratify the appointment by the Audit Committee of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019;
3. To approve a non-binding advisory resolution approving the compensation of the named executive officers;
4. To approve an amendment to the Amended and Restated Intrexon Corporation 2013 Omnibus Incentive Plan (the “2013 Plan”), which would provide for the availability of an additional five million shares of common stock under the 2013 Plan;
5. To approve the Intrexon Corporation 2019 Incentive Plan for Non-Employee Service Providers;
6. To approve an amendment to the Amended and Restated Articles of Incorporation, which would increase the number of authorized shares of common stock to 400 million;
7. To approve the adjournment of the Annual Meeting, if necessary, if a quorum is present, to solicit additional proxies if there are not sufficient votes to approve Proposal 6; and
8. To transact any other business that may properly be brought before the Annual Meeting or any adjournments or postponements thereof.

As of the date of this notice, the Company has received no notice of any matters, other than those set forth above, that may properly be presented at the Annual Meeting. If any other matters are properly presented for consideration at the meeting, the persons named as proxies on the proxy card, or their duly constituted substitutes, will be deemed authorized to receive notice on behalf of and to vote the shares represented by proxy or otherwise act on those matters in accordance with their business judgment.

The Board of Directors has fixed the close of business on April 16, 2019, as the record date for determining those shareholders entitled to notice of and to vote at the Annual Meeting. As permitted by rules adopted by the Securities and Exchange Commission, we are furnishing our Proxy Statement, 2018 Annual Report to Shareholders and proxy card over the internet to our shareholders. This means that our shareholders will receive

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only a notice containing instructions on how to access the proxy materials over the internet. If you would like to receive a paper copy of the proxy materials, the notice contains instructions on how you can request copies of these documents.

Your vote is very important to us. Please read the Proxy Statement and then, regardless of whether you plan to attend the Annual Meeting, vote your shares as promptly as possible. Please see page 4 for information about voting by internet, telephone, mail or in person at the Annual Meeting. Please note that in the absence of specific instructions as to how to vote, brokers may not vote your shares on the election of directors, the non-binding proposal regarding the compensation of the named executive officers, the proposal to approve the amendment to the 2013 Plan, the proposal to approve the 2019 Incentive Plan for Non-Employee Service Providers, the proposal to approve the amendment to the Amended and Restated Articles of Incorporation, or the proposal to adjourn the Annual Meeting, if necessary, if a quorum is present, to solicit additional proxies if there are not sufficient votes to approve the amendment to the Amended and Restated Articles of Incorporation. You may revoke your proxy at any time before the vote is taken by delivering to the Company's Corporate Secretary a written revocation, submitting a proxy with a later date or by voting your shares in person at the Annual Meeting, in which case your prior proxy will be disregarded. Please note that voting in advance in any of the ways described will not prevent you from attending the Annual Meeting should you choose to do so. I hope that you will attend the Annual Meeting, but even if you cannot, please vote your shares as promptly as possible.

By Order of the Board of Directors,
DONALD P. LEHR
Corporate Secretary

Germantown, Maryland
April 30, 2019

**IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE
ANNUAL MEETING OF SHAREHOLDERS TO BE HELD ON JUNE 12, 2019**

This Proxy Statement, including the accompanying notice and form of proxy, and our Annual Report are available online at <https://materials.proxyvote.com/default.aspx?ticker=46122T>. To obtain directions to the Esperante Conference Center to attend the Annual Meeting in person, please visit the “Investors” section of our website at www.dna.com or contact Investor Relations in writing at 20374 Seneca Meadows Parkway, Germantown, Maryland 20876.

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INTREXON CORPORATION
20374 Seneca Meadows Parkway
Germantown, Maryland 20876

PROXY STATEMENT
2019 Annual Meeting of Shareholders

This Proxy Statement and the accompanying proxy card are being furnished to you by the Board of Directors (the “Board”) of Intrexon Corporation to solicit your proxy to vote your shares at our 2019 Annual Meeting of Shareholders (the “Annual Meeting”), or at any adjournments or postponements thereof. The Board has designated the Esperante Conference Center, 222 Lakeview Avenue, West Palm Beach, Florida 33401 as the place of the Annual Meeting. The Annual Meeting will be called to order at 9:00 a.m., Eastern Time, on Wednesday, June 12, 2019. Unless the context otherwise indicates, reference to “Intrexon,” “we,” “us,” “our” or the “Company” means Intrexon Corporation.

On or about May 3, 2019, we will mail a notice to shareholders containing instructions on how to access the Proxy Statement, including the accompanying notice and form of proxy, and the 2018 Annual Report, and on how to vote. These materials will be made available to you on the internet, however, we will promptly deliver printed versions of these materials to you by mail upon your request.

QUESTIONS AND ANSWERS ABOUT THE ANNUAL MEETING

1. Who is asking for my vote and why am I receiving this document?

The Board asks that you vote on the matters listed in the Notice of 2019 Annual Meeting of Shareholders, which are more fully described in this Proxy Statement. We are providing this Proxy Statement and related proxy card to our shareholders in connection with the solicitation by the Board of proxies to be voted at the Annual Meeting. A proxy, if duly executed and not revoked, will be voted and, if it contains any specific instructions, will be voted in accordance with those instructions.

2. Who is entitled to vote?

Only holders of record of outstanding shares of our common stock at the close of business on April 16, 2019, are entitled to notice of and to vote at the Annual Meeting. At the close of business on April 16, 2019, there were 160,720,471 outstanding shares of common stock. Each share of common stock is entitled to one vote on each matter properly brought before the Annual Meeting.

3. What is a proxy?

A proxy is your legal designation of another person to vote the stock you own. If you designate someone as your proxy or proxy holder in a written document, that document is called a proxy or a proxy card.

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Mr. Randal Kirk, Mr. Rick Sterling and Mr. Donald Lehr have been designated as proxies or proxy holders for the Annual Meeting. A proxy properly executed and received by our Corporate Secretary prior to the Annual Meeting and not revoked will be voted in accordance with the terms thereof.

4. What is a voting instruction?

A voting instruction is the instruction form you receive from your bank, broker or its nominee if you hold your shares of common stock in street name. The instruction form instructs you how to direct your bank, broker or its nominee, as record holder, to vote your shares of common stock.

5. What am I voting on?

Shareholders are being asked to vote on each of the following items of business:

- The election of the nine nominees named in this Proxy Statement to the Board, each to serve a one-year term expiring at the earlier of the next Annual Meeting or until his or her successor is duly elected and qualified;
- The ratification of the appointment by the Audit Committee of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019;
- The approval of a non-binding advisory resolution approving the compensation of the named executive officers;
- The approval of an amendment to the 2013 Plan, which would provide for the availability of an additional five million shares of common stock under the 2013 Plan;
- The approval of the Intrexon Corporation 2019 Incentive Plan for Non-Employee Service Providers;
- The approval of an amendment to the Amended and Restated Articles of Incorporation, which would increase the number of authorized shares of common stock to 400 million; and
- The approval of the adjournment of the Annual Meeting, if necessary, if a quorum is present, to solicit additional proxies if there are not sufficient votes to approve the increase in the number of authorized shares of common stock.

In addition, any other matters that properly come before the Annual Meeting or any adjournment or postponement thereof will be considered. Management is presently aware of no other business to come before the Annual Meeting.

6. How many votes must be present to hold the Annual Meeting?

A majority of the outstanding shares of common stock entitled to be cast as of the record date must be present in person or represented by proxy at the Annual Meeting. This is referred to as a quorum. Abstentions, withheld votes and shares of record held by a broker or its nominee ("broker shares") that are voted on any matter are included in determining the existence of a quorum. Broker shares that are not voted on any matter ("broker non-votes") will not be included in determining whether a quorum is present.

7. What are the voting requirements to elect directors and approve the other proposals described in the Proxy Statement?

The vote required to elect directors and approve each of the matters scheduled for a vote at the annual meeting is set forth below:

| <u>Proposal</u> | <u>Vote Required</u> |
|--|---|
| 1. Election of directors | Majority of votes cast |
| 2. Ratification of appointment of PricewaterhouseCoopers LLP | Majority of votes cast |
| 3. Advisory vote on executive compensation | Majority of votes cast |
| 4. Amendment to 2013 Plan to increase the number of shares available under the 2013 Plan | Majority of votes cast |
| 5. Approval of the Intrexon Corporation 2019 Incentive Plan for Non-Employee Service Providers | Majority of votes cast |
| 6. Amendment to Amended and Restated Articles of Incorporation to increase the number of authorized shares of common stock | Majority of issued and outstanding shares |
| 7. Adjournment of the Annual Meeting, if necessary, if a quorum is present | Majority of votes cast |

Votes may be cast by proxy or in person. A “majority” of votes cast means that more votes were cast “for” the proposal than “against.” Abstentions and broker non-votes (described in Question 13 below) are not considered as votes cast and will have no effect on the vote outcome for Proposals 1, 2, 3, 4, 5 and 7. However, abstentions and broker non-votes will have the effect of a vote against Proposal 6. As it relates to the election of our directors, our Corporate Governance Guidelines provide that any nominee for director in an uncontested election who receives a greater number of shareholder votes cast “against” his or her election than votes “for” his or her election must promptly tender his or her resignation to the Board for consideration. For more details regarding the director resignation policy, please see “Election of Directors” on page 18.

8. What are the voting recommendations of the Board?

For the reasons set forth in more detail later in this Proxy Statement, THE BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE:

- **FOR** THE PROPOSED NOMINEES TO THE BOARD NAMED IN THIS PROXY STATEMENT;
- **FOR** THE RATIFICATION OF THE APPOINTMENT OF PRICEWATERHOUSECOOPERS LLP;
- **FOR** THE APPROVAL OF THE NON-BINDING ADVISORY RESOLUTION REGARDING APPROVAL OF THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS;
- **FOR** THE APPROVAL OF AN AMENDMENT TO THE 2013 PLAN INCREASING THE AVAILABLE SHARES;
- **FOR** THE APPROVAL OF THE INTREXON CORPORATION 2019 INCENTIVE PLAN FOR NON-EMPLOYEE SERVICE PROVIDERS;
- **FOR** THE APPROVAL OF AN AMENDMENT TO THE AMENDED AND RESTATED ARTICLES OF INCORPORATION INCREASING THE AUTHORIZED SHARES OF COMMON STOCK; and
- **FOR** THE ADJOURNMENT OF THE ANNUAL MEETING, IF NECESSARY, IF A QUORUM IS PRESENT, TO SOLICIT ADDITIONAL PROXIES IF THERE ARE NOT SUFFICIENT VOTES TO APPROVE THE INCREASE IN THE AUTHORIZED SHARES OF COMMON STOCK.

9. How do I vote?

Registered shareholders (shareholders who hold common stock in certificated form or book entry form on the records of our transfer agent as opposed to through a bank, broker or other nominee) may vote in person at the Annual Meeting or by proxy. There are three ways for registered shareholders to vote by proxy:

- By Internet: Connect to the internet at www.proxyvote.com and follow the instructions included on the proxy card or voting instruction. Your proxy will be voted according to your instructions. If you vote by internet, you do not need to mail in a proxy card or voting instruction.
- By Telephone: Call 1-800-690-6903 and follow the instructions included on the proxy card or voting instruction. If you vote by telephone, you do not need to mail in a proxy card or voting instruction.
- By Mail: If you received your proxy materials by mail, complete, properly sign, date and mail the enclosed proxy card or voting instruction.

Registered shareholders are urged to deliver proxies or voting instructions by using the internet, calling the toll-free telephone number or by completing and mailing the proxy card or voting instruction. The internet and telephone voting procedures are designed to authenticate shareholders' identities, to allow shareholders to give their proxies or voting instructions and to confirm that such instructions have been recorded properly. Instructions for voting over the internet or by telephone are included on the enclosed proxy card or voting instruction. If you received your proxy materials via mail, registered shareholders may send their proxies or voting instructions by completing, signing and dating the enclosed proxy card or voting instruction and returning it as promptly as possible in the enclosed prepaid envelope.

Shareholders who hold common stock through banks, brokers or other nominees ("street name shareholders") who wish to vote at the Annual Meeting should receive voting instructions from the institution that holds their shares. Please contact the institution that holds your shares if you have not received voting instructions. Street name shareholders may also be eligible to vote their shares electronically by following the voting instructions provided by the bank, broker or other nominee that holds the shares, using either the toll-free telephone number or the internet address provided on the voting instruction; or by completing, dating and signing the voting instruction and returning it promptly in the enclosed prepaid envelope.

The deadline for voting via the internet or telephone is 11:59 p.m., Eastern Time, on June 11, 2019.

10. Can I attend the Annual Meeting?

Yes. The Annual Meeting is open to all holders of our common stock as of the record date, April 16, 2019. You may attend the Annual Meeting and vote in person. However, even if you plan to attend the Annual Meeting, we encourage you to vote your shares by proxy.

All shareholders must present a form of personal photo identification in order to be admitted to the meeting. In addition, if you are a street name shareholder and your shares are held in the name of a broker, bank or other nominee, please bring with you a proxy, letter or account statement from your broker, bank or nominee confirming your ownership of Company common stock so that you can be admitted to the Annual Meeting. Cameras, recording devices and other electronic devices are not permitted at the Annual Meeting.

11. How will my shares be voted if I sign, date and return my proxy or voting instruction, but do not provide complete voting instructions with respect to each proposal?

Shareholders should specify their vote for each matter on the proxy or voting instruction. The proxies solicited by this Proxy Statement vest in the proxy holders voting rights with respect to the election of directors (unless the shareholder marks the proxy to withhold that authority) and on all other matters voted upon at the Annual Meeting.

Unless otherwise directed in the enclosed proxy card, the persons named as proxies therein will vote all properly executed, returned and not-revoked proxy cards or voting instruction cards (1) "**FOR**" the election

of the nine director nominees listed thereon; (2) “**FOR**” the proposal to ratify the appointment by the Audit Committee of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019; (3) “**FOR**” the non-binding proposal regarding approval of the compensation of the Company’s named executive officers; (4) “**FOR**” the approval of an amendment to the 2013 Plan increasing the number of available shares by five million; (5) “**FOR**” the approval of the Intrexon Corporation 2019 Incentive Plan for Non-Employee Service Providers; (6) “**FOR**” the approval of an amendment to the Amended and Restated Articles of Incorporation increasing the amount of authorized shares of common stock to 400 million; and (7) “**FOR**” the adjournment of the Annual Meeting, if necessary, if a quorum is present, to solicit additional proxies if there are not sufficient votes to approve the increase in the number of authorized shares of common stock. As to any other business that may properly come before the Annual Meeting, the persons named in the enclosed proxy card or voting instruction will vote the shares of common stock represented by the proxy in the manner as the Board may recommend, or otherwise at the proxy holders’ discretion. The Board does not presently know of any other such business.

12. How will my shares be voted if I do not return my proxy or my voting instruction?

It will depend on how your ownership of shares of common stock is registered. If you own your shares as a record holder, which means that your shares of common stock are registered in your name, your unvoted shares will not be represented at the Annual Meeting and will not count toward the quorum requirement, as explained under “6. *How many votes must be present to hold the Annual Meeting?*” on page 2, unless you attend the Annual Meeting to vote them in person.

If you are a street name shareholder and your shares are registered in the name of your bank, broker or its nominee, your shares may be voted even if you do not provide your bank, broker or other nominee with voting instructions. Under the rules of the New York Stock Exchange (the “NYSE”), and irrespective of the stock exchange on which a company is listed, your bank, broker or other nominee may vote your shares in its discretion on “routine” matters. However, NYSE rules do not permit your bank, broker or other nominee to vote your shares on proposals that are not considered routine. When a proposal is not a routine matter and your bank, broker or other nominee has not received your voting instructions with respect to such proposal, your bank, broker or other nominee cannot vote your shares on that proposal. When a bank, broker or other nominee does not cast a vote for a routine or a non-routine matter, it is called a “broker non-vote.”

Therefore, please note that in the absence of your specific instructions as to how to vote, your bank, broker or other nominee may not vote your shares with respect to the election of directors, the non-binding proposal regarding the compensation of the named executive officers, the proposal to approve the amendment to the 2013 Plan, the proposal to approve the 2019 Incentive Plan for Non-Employee Service Providers, the proposal to approve the amendment to the Amended and Restated Articles of Incorporation, and the proposal to adjourn the Annual Meeting, if necessary. Under NYSE rules, these matters are not considered routine matters. However, the ratification of the appointment by the Audit Committee of PricewaterhouseCoopers LLP is a routine matter under NYSE rules for which brokerage firms may vote on behalf of their clients if no voting instructions are provided. Therefore, if you are a street name shareholder whose shares of common stock are held with a bank, broker or other nominee and you do not return your voting instructions, your bank, broker or other nominee may vote your shares “**FOR**” the ratification of the appointment of PricewaterhouseCoopers LLP as our independent registered public accounting firm. **Please return your proxy so your vote can be counted.**

13. How are abstentions and broker non-votes counted?

Only votes cast “for” or “against” are included in determining the votes cast with respect to any matter presented for consideration at the Annual Meeting. As described above, when brokers do not have discretion to vote or do not exercise such discretion, the inability or failure to vote is referred to as a “broker non-vote.” Proxies marked as abstaining, and any proxies returned by brokers as “non-votes” on behalf of shares held in street name because beneficial owners’ discretion has been withheld as to one or more matters

to be acted upon at the Annual Meeting, will be treated as present for purposes of determining whether a quorum is present at the Annual Meeting. Broker non-votes and abstentions will not be included in the vote total for the proposal to elect the nominees for director and will not affect the outcome of the vote for the proposal. In addition, under Virginia corporate law, abstentions are not counted as votes cast on a proposal. Therefore, abstentions and broker non-votes will not count either in favor of or against (i) the election of directors, (ii) the ratification of the appointment of PricewaterhouseCoopers LLP, (iii) the non-binding proposal regarding the compensation of the named executive officers, (iv) the amendment to the 2013 Plan, (v) the approval of the Intrexon Corporation 2019 Incentive Plan for Non-Employee Service Providers or (vi) approval of the adjournment of the Annual Meeting, if necessary, if a quorum is present, to solicit additional proxies if there are not sufficient votes to approve the authorized share increase. However, abstentions and broker non-votes will have the same effect as votes against the proposal to increase the Company's authorized shares.

14. What if I change my mind after I vote?

Whether you vote by internet, telephone or by mail, you may later change or revoke your proxy at any time before it is voted by (i) submitting a properly signed proxy with a later date, (ii) voting by telephone or the internet at a later time, or (iii) voting in person at the Annual Meeting. See the proxy card for instructions. Attendance at the Annual Meeting alone without voting will not revoke a previously granted proxy.

If you are a street name shareholder whose stock is held with a bank, broker or other nominee, you must follow the instructions found on the voting instruction card provided by the bank, broker or other nominee, or contact your bank, broker or other nominee to change or revoke your previously given proxy.

15. Who pays the cost of proxy solicitation?

Intrexon will pay all expenses of soliciting proxies, including clerical work, printing and postage. Our officers and other employees may personally solicit proxies or solicit proxies by internet, telephone, mail or facsimile, but we will not provide any compensation for such solicitations. We will also reimburse banks, brokers and other persons holding shares in their names or in the names of nominees for expenses incurred sending material to beneficial owners and obtaining proxies from beneficial owners.

16. Could other matters be decided in the Annual Meeting?

The Board does not know of any other business that may be brought before the Annual Meeting. However, if any other matters should properly come before the Annual Meeting or at any adjournment or postponement thereof, it is the intention of the persons named in the accompanying proxy to vote on such matters as they, in their discretion, may determine.

17. How do I make a shareholder proposal for the 2020 Annual Meeting of Shareholders?

We must receive proposals from shareholders intended to be presented at the 2020 Annual Meeting of Shareholders, on or before January 1, 2020, to be considered for inclusion in our Proxy Statement and form of proxy/voting instruction card for that meeting pursuant to Rule 14a-8 under the Securities Exchange Act of 1934, as amended ("Exchange Act"), and for consideration at that meeting. Shareholders submitting such proposals are required to be the beneficial owners of shares of the common stock amounting to at least \$2,000 in market value and to have held such shares for at least one year prior to the date of submission.

Our Amended and Restated Bylaws (the "Bylaws") also set forth the procedures a shareholder must follow to nominate directors or to bring other business before shareholder meetings. For a shareholder to nominate a candidate for director or bring other matters from the floor at the 2020 Annual Meeting of Shareholders, we must receive notice of the nomination no later than March 14, 2020 and no earlier than February 13, 2020. For the nomination of a candidate for director, the notice must describe various matters regarding the

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nominee, including name, address, occupation and shares held. For bringing other matters from the floor at the 2020 Annual Meeting of Shareholders, the notice must include a description of the proposed business, the reasons therefor and other matters specified in our Bylaws. In each case, the notice must be timely given to our Corporate Secretary in writing, whose address is 20374 Seneca Meadows Parkway, Germantown, Maryland 20876. A printed copy of the Bylaws is available free of charge to any shareholder who requests it by contacting the Corporate Secretary in writing at Intrexon Corporation, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876.

CORPORATE GOVERNANCE

General

Our business and affairs are managed under the direction of the Board in accordance with the Virginia Stock Corporation Act and our Amended and Restated Articles of Incorporation and Bylaws. Our Bylaws provide that the number of directors shall be fixed from time to time by the Board, but shall not be more than ten. The Board is currently comprised of the following individuals: Randal Kirk, Cesar Alvarez, Steven Frank, Vinita Gupta, Fred Hassan, Jeffrey Kindler, Dean Mitchell, Robert Shapiro and James Turley. For more information regarding the members of our Board, please see “NOMINEES FOR ELECTION AS DIRECTORS” beginning on page 19.

Members of the Board are kept informed of our business through discussions with the Chairman and Chief Executive Officer and other officers, by reviewing materials provided to them and by participating in meetings of the Board and its committees. The corporate governance practices we follow are summarized below.

Corporate Governance Guidelines

The Board has adopted corporate governance guidelines (the “Corporate Governance Guidelines”) that set forth the practices of the Board with respect to the qualification, selection and election of directors, director orientation and continuing education, director responsibilities, Board composition and performance, director access to management and independent advisors, director compensation guidelines, management evaluation and succession, policies regarding the Lead Independent Director, meetings of the non-management directors, the policy on communicating with the non-management directors and various other issues. A copy of our Corporate Governance Guidelines is available on our website at <http://investors.dna.com> under the caption “Corporate Governance.” A printed copy is available free of charge to any shareholder who requests it by contacting the Corporate Secretary in writing at Intrexon Corporation, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876.

Board Standards of Independence

The Board sets our independence standards in our Corporate Governance Guidelines. The director independence standards provide that a majority of the Board must be independent under the independence standards established by the Corporate Governance Guidelines, The Nasdaq Stock Market (“Nasdaq”) and the Securities and Exchange Commission (the “SEC”) as in effect from time to time. For a Board member or candidate for election to the Board to qualify as independent, the Board must determine that the person and his or her immediate family members do not have a material relationship with us (either directly or as a partner, shareholder or officer of an organization that has a relationship with us) or any of our affiliates. Under the categorical standards adopted by the Board, a member of the Board is not independent if:

- The director is, or has been within the last three years, our employee, or whose family member is, or has been within the last three years, an executive officer of the Company;
- The director has received, or has a family member serving as an executive officer who has received, during any 12-month period within the three years preceding the determination of independence, more than \$120,000 in direct compensation from us, other than director and committee fees, compensation made to a family member who is an employee (other than an executive officer) of the Company and benefits under a tax-qualified retirement plan or non-discretionary compensation;
- (i) The director is a current partner of a firm that is our internal or external auditor; (ii) the director has a family member who is a current partner of such a firm; or (iii) the director, or a family member, was within the last three years a partner or employee of such a firm and personally worked on our audit within that time;
- The director or a family member is, or has been within the last three years, employed as an executive officer of another company where any of our present executive officers at the same time serves or served on that company’s compensation committee; or

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- The director is or a family member is, a partner in (excluding limited partners), or a controlling shareholder or executive officer of, any organization to which the Company made, or from which the Company received, payments for property or services in an amount which, in any of the last three fiscal years, exceeds the greater of \$200,000, or five percent, of such other company's consolidated gross revenues.

With the exception of Mr. Kirk, our Chairman of the Board and Chief Executive Officer, the Board has affirmatively determined that each member of the Board is independent in accordance with the above standards.

In determining that Mr. Alvarez is independent, the Board considered that Mr. Alvarez is the Senior Chairman of Greenberg Traurig, LLP ("Greenberg Traurig"). As discussed under "CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS," Greenberg Traurig provides legal services to us from time to time for which it has received, and may continue to receive, customary fees. During 2018, we paid Greenberg Traurig \$768,105 for legal services, constituting less than five percent of Greenberg Traurig's annual gross revenues. As the Senior Chairman, Mr. Alvarez does not participate in the provision of such services and does not materially benefit from the engagement, and his compensation from Greenberg Traurig is not based on such services provided to us. The Board has determined that this relationship is not material and that it does not impair Mr. Alvarez's independence.

In determining that Mr. Turley is independent, the Board considered that Mr. Turley is the former Chairman and Chief Executive Officer of Ernst & Young LLP. From time to time, Ernst & Young provides valuation and technical accounting services to us, for which it receives customary fees. As Mr. Turley retired from Ernst & Young in June 2013, Mr. Turley does not participate in such services and does not materially benefit from the engagement. The Board has determined that this relationship is not material and that it does not impair Mr. Turley's independence.

Board Meetings and Attendance at Annual Meeting of Shareholders

During fiscal year 2018, there were 12 meetings of the Board held either in person or by teleconference. Each director attended at least 75 percent of the combined meetings of the Board and the committees on which he or she served during the year. Our independent directors met in executive session without management at least quarterly.

Our Corporate Governance Guidelines provide that all directors are strongly encouraged to attend the Annual Meeting each year. All members of our Board at the time of the 2018 Annual Meeting attended the Annual Meeting.

Board Leadership Structure

As provided in the Corporate Governance Guidelines, the Board does not have a policy on whether the role of the Chief Executive Officer and Chairman of the Board should be separate or, if it is to be separate, whether the Chairman should be selected from the non-employee directors or be an employee. We currently operate with one individual, Mr. Kirk, serving as Chairman of the Board and Chief Executive Officer. The Board appointed Mr. Kirk as Chairman of the Board in February 2008 and Chief Executive Officer in April 2009. The Board believes that because Mr. Kirk owns a significant percentage of our common stock and has unique and extensive experience and understanding of our business, he is well-situated to lead and execute strategy and business plans to maximize shareholder value. The Board believes that combining the Chairman of the Board and Chief Executive Officer positions is the right corporate governance structure for us at this time because it most effectively utilizes Mr. Kirk's extensive experience and knowledge regarding the Company, including by allowing him to lead Board discussions regarding our business and strategy, and provides us with unified leadership.

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To ensure that the independent directors play a leading role in our current leadership structure, the Board established the position of Lead Independent Director in the Corporate Governance Guidelines. Mr. Shapiro currently serves as our Lead Independent Director. In his role as Lead Independent Director, Mr. Shapiro is in frequent contact with the Chairman of the Board and Chief Executive Officer and is regularly consulted on material matters. The Company currently maintains a significant majority of independent directors (Mr. Kirk is the only non-independent director). The Lead Independent Director is elected by the independent directors and ensures that the Board operates independently of management and directors and shareholders have an independent leadership contact.

The responsibilities of the Lead Independent Director of the Board include the following:

- preside over meetings of the non-management and independent Board members and, as appropriate, provide prompt feedback to the Chief Executive Officer and Chairman;
- together with the Chief Executive Officer and Chairman, and with input from the non-management and independent Board members, prepare the Board's agenda;
- serve as a point of contact between non-management and independent Board members and the Chief Executive Officer and Chairman to report or raise matters;
- call executive sessions of the Board or of the non-management and independent Board members;
- serve as a "sounding board" and mentor to the Chief Executive Officer and Chairman;
- take the lead in assuring that the Board carries out its responsibilities in circumstances where the Chief Executive Officer and Chairman is incapacitated or otherwise unable to act;
- consult with the Chairman of the Compensation Committee to provide performance feedback and compensation information to the Chief Executive Officer and Chairman; and
- perform such other duties and responsibilities as may be delegated to the Lead Independent Director by the Board from time to time.

Given our current circumstances and operating strategies, we believe having a combined Chairman of the Board and Chief Executive Officer, as well as having a Lead Independent Director and independent standing Board committees, is the most appropriate structure for our shareholders and the Company. We believe this structure demonstrates clear leadership to our employees, shareholders and other interested parties and eliminates the potential for redundancies and confusion. The Lead Independent Director protects the role of the independent directors by providing leadership to the independent directors and working closely with the Chairman of the Board and Chief Executive Officer.

As part of the Board's annual assessment process, the Board evaluates our Board leadership structure to ensure that it remains appropriate. The Board recognizes that there may be circumstances in the future that would lead it to separate the roles of Chief Executive Officer and Chairman of the Board, but believes that the absence of a policy requiring either the separation or combination of the roles of Chairman and Chief Executive Officer provides the Board with the flexibility to determine the best leadership structure.

The Board's Role in Risk Oversight

The Board is responsible for our risk oversight, and each committee of the Board is responsible for risk oversight within such committee's area of responsibility and regularly reports to the Board. Management is responsible for our risk management, including providing oversight and monitoring to ensure our policies are carried out and processes are executed in accordance with our performance goals and risk tolerance. On a regular basis, our management team identifies, discusses and assesses financial risk from current macro-economic, industry and company perspectives. Our management team also provides regular reports to the Board and its committees on areas of material risk to the Company, including operational, financial, legal and regulatory as well as strategic and reputational risks.

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The Audit Committee charter provides that the Audit Committee is responsible for discussing with management our major financial risk exposures and the steps and processes management has taken to monitor and control such exposures, including our risk assessment and risk management policies. As part of its regular reporting process, management reports and reviews with the Audit Committee our material risks, including, but not limited to, proposed risk factors and other public disclosures, mitigation strategies and our internal controls over financial reporting. The Audit Committee also engages in regular periodic discussions with the Chief Financial Officer and other members of management regarding risks as appropriate.

The Compensation Committee considers human resources risks and risks that may result from our executive compensation programs. The Nominating and Governance Committee considers succession planning and corporate governance risks.

Each committee regularly reports to the Board. Moreover, the Board reviews and oversees our various financial policies, financing programs, capital and operating plans, benefit plan management and certain risk management policies. We believe the current leadership structure of the Board supports the risk oversight functions described above by providing independent leadership at the committee level, with ultimate oversight by the full Board as led by the Chairman of the Board and Chief Executive Officer and the Lead Independent Director.

Board Committees

The Board maintains three standing committees: the Audit Committee, the Compensation Committee and the Nominating and Governance Committee. Each of these committees has a separate chairperson and is composed entirely of directors that meet the applicable independence requirements of the SEC and Nasdaq. Each committee operates under a written charter that has been approved by our Board. A current copy of each committee's charter is available on our website at <http://investors.dna.com> under the caption "Corporate Governance." Alternatively, you can request a printed copy of any of these documents free of charge by writing to the Corporate Secretary at Intrexon Corporation, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876.

Audit Committee

The members of our Audit Committee are Messrs. Kindler, Mitchell and Shapiro. Mr. Kindler is the chair of the Audit Committee. During 2018, our Audit Committee met 19 times. The Board has determined that each member of the Audit Committee is "independent" within the meaning of the enhanced independence standards for audit committee members in the Exchange Act, and the rules thereunder, as incorporated into the listing standards of Nasdaq, and the independence standards of our Corporate Governance Guidelines as discussed above under "CORPORATE GOVERNANCE — Board Standards of Independence" on page 8. The Board has further determined that each of the members of the Audit Committee is "financially literate." Our Board has further determined that Mr. Kindler qualifies as an "audit committee financial expert" within the meaning of SEC regulations and is "financially sophisticated" within the meaning of the Nasdaq rules. Our Audit Committee assists our Board in its oversight of our accounting and financial reporting process and the audits of our consolidated financial statements. Our Audit Committee's responsibilities include, among other things, overseeing:

- our accounting and financial reporting processes;
- the integrity of our consolidated financial statements;
- our compliance with laws and regulations;
- our independent registered public accounting firms qualifications and independence; and
- the performance of our internal audit functions and independent registered public accounting firm.

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The Audit Committee appoints, compensates, oversees and evaluates the performance of our independent registered public accounting firm for each fiscal year and approves the audit and non-audit fees we pay to such firm. The Audit Committee reviews the scope and the results of the work of the independent registered public accounting firm and reviews the adequacy of internal control over financial reporting. The functions and responsibilities of the Audit Committee are described in the “Audit Committee Report” on page 32.

The Audit Committee has adopted a written policy for the provision of audit services and permitted non-audit services by our independent registered public accounting firm. Our Chief Financial Officer has primary responsibility to the Audit Committee for administration and enforcement of this policy and for reporting non-compliance. Under the policy, our Audit Committee receives a presentation of an annual budget and plan for audit services and for any proposed audit-related, tax or other non-audit services to be performed by the independent registered public accounting firm, but management may, from time to time, seek approval of certain additional audit or non-audit services not provided for in the budget.

Compensation Committee

The members of our Compensation Committee are Messrs. Hassan, Kindler and Turley. Mr. Turley is the chair of the Compensation Committee. During 2018, our Compensation Committee met five times. The Compensation Committee’s responsibilities include, among other things:

- developing and maintaining an executive compensation policy and monitoring the results of that policy;
- considering the impact of our compensation policy and practices on our risk profile;
- recommending to the Board for approval compensation and benefit plans;
- reviewing and approving annually corporate and personal goals and objectives to serve as the basis for the Chief Executive Officer’s compensation, evaluating the Chief Executive Officer’s performance in light of those goals and objectives and determining the Chief Executive Officer’s compensation based on that evaluation;
- determining and approving the annual compensation for other executive officers;
- approving any grants of stock options, restricted stock units (“RSUs”), restricted stock, performance shares, stock appreciation rights, and other equity-based incentives to the extent provided under the our equity compensation plans;
- reviewing and making recommendations to the Board regarding the compensation of non-employee directors;
- reviewing and discussing with management the “Compensation Discussion and Analysis” to the extent required by SEC rules;
- preparing the Compensation Committee report when required by SEC rules;
- reviewing and recommending to the Board for approval our approach with respect to the advisory vote on executive compensation, or say-on-pay, and the frequency of the say-on-pay advisory vote; and
- considering the application of Section 162(m) of the Internal Revenue Code to our compensation practices and developing a related policy.

The Board has determined that the members of the Compensation Committee are “non-employee directors” (within the meaning of Rule 16b-3 of the Exchange Act) and “independent directors” (as defined under the applicable Nasdaq listing standards and our Corporate Governance Guidelines as discussed above under “CORPORATE GOVERNANCE — Board Standards of Independence” on page 8).

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While the Compensation Committee charter does not specify qualifications required for members, the members of the Compensation Committee have been members of other public company boards of directors, are current or former executive officers of public companies or have comparable positions.

The Compensation Committee is authorized to retain experts, consultants and other advisors to aid in the discharge of its duties. In 2018, the Compensation Committee retained F. Daniel Siciliano as its outside compensation consultant. Mr. Siciliano is the co-founder and Fellow of the Arthur and Toni Rembe Rock Center for Corporate Governance at Stanford Law School and the immediate past Faculty Director and Professor of the Practice at the Center. Mr. Siciliano is a noted authority on matters related to executive compensation and corporate governance. Mr. Siciliano was retained to (1) review the Company's historical compensation practices, (2) advise the Compensation Committee on compensation standards and trends, (3) assist in the implementation of compensation policies and programs, and (4) review recommendations from management on compensation matters. In retaining Mr. Siciliano, the Compensation Committee separately considered the six factors set forth in Section 10C-1(b)(4)(i) through (vi) of the Exchange Act and, based on such consideration, determined that the engagement of Mr. Siciliano did not raise any conflicts of interest.

The processes and procedures followed by our Compensation Committee in considering and determining executive compensation are described below under "Compensation Discussion and Analysis — The Compensation Review Process" on page 58.

Compensation Committee Interlocks and Insider Participation

None of our executive officers serve, or in the past has served, as a member of the board of directors or compensation committee, or other committee serving an equivalent function, of any entity that has one or more executive officers who serve as members of our Board or our Compensation Committee. None of the members of our Compensation Committee is an officer or employee of our Company, nor have any of them ever been an officer or employee of our Company.

Nominating and Governance Committee

The members of our Nominating and Governance Committee are Mr. Alvarez, Ms. Gupta and Mr. Shapiro. Mr. Alvarez is the chair of the Nominating and Governance Committee. The Nominating and Governance Committee met four times during fiscal year 2018. The Nominating and Governance Committee's responsibilities include, among other things:

- considering and reviewing periodically the desired composition of the Board and ensuring that the Board is composed so as to satisfy SEC listing requirements and Nasdaq rules, including the independence of directors and the financial and accounting experience of directors;
- establishing any qualifications and standards for individual directors;
- identifying, nominating and evaluating candidates for election to the Board;
- making recommendations to the Board regarding the size of the Board, the tenure and classifications of directors, and the composition of the Board's committees;
- reviewing and evaluating our various governance policies and guidelines;
- considering chief executive officer succession planning;
- reviewing committee structure and effectiveness; and
- considering other corporate governance and related matters as requested by the Board.

The Board has determined that all members of the Nominating and Governance Committee are "independent" within the meaning of the listing standards of Nasdaq and the independence standards set by the Board as discussed in the section entitled "CORPORATE GOVERNANCE — Board Standards of Independence" on page 8.

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Director Candidate Recommendations and Nominations by Shareholders. The Nominating and Governance Committee’s charter provides that the Nominating and Governance Committee will consider director candidate recommendations by shareholders. Shareholder recommendations for candidates to be nominees will be evaluated under the same standards as potential nominees recommended by management or the non-management members of the Board. Shareholders should submit any such director recommendations to the Nominating and Governance Committee through the method described in “QUESTIONS AND ANSWERS ABOUT THE ANNUAL MEETING — 17. How do I make a shareholder proposal for the 2020 Annual Meeting of Shareholders?” on page 6. The Nominating and Governance Committee did not receive any recommendations from any shareholders in connection with the Annual Meeting.

Nominating and Governance Committee Process for Identifying and Evaluating Director Candidates. The Nominating and Governance Committee identifies and evaluates all director candidates in accordance with the director qualification standards described in the Corporate Governance Guidelines. The Nominating and Governance Committee evaluates a candidate’s qualifications to serve as a member of the Board based on the background and expertise of individual Board members as well as the background and expertise of the Board as a whole. Nominees will be required to bring the skills, talents, knowledge and expertise to ensure that the composition, structure and operation of the Board serve the best interests of our shareholders. In addition, the Nominating and Governance Committee will evaluate a candidate’s independence and his or her background and expertise in the context of the Board’s needs.

We have no formal policy regarding Board diversity. Our priority in selection of Board members is identification of members who will further the interests of our shareholders through their established records of professional accomplishment, the ability to contribute positively to the collaborative culture among Board members, knowledge of our business and understanding of the competitive landscape of the industries in which we operate. We will consider, in identifying first-time candidates, assessing nominees for director (including incumbent directors), or evaluating individuals recommended by shareholders, the current composition of the Board in light of the diverse communities and geographies we serve and the interplay of the candidate’s or nominee’s diverse individual experience, education, skills, background and other qualities and attributes with those of the other Board members. The Nominating and Governance Committee and Board monitor the Board’s effectiveness through the Board’s self-evaluation process. As described under “NOMINEES FOR ELECTION AS DIRECTORS” beginning on page 19, the Nominating and Governance Committee and the Board believe that the current composition of the Board reflects a group of highly talented individuals with diverse backgrounds, skills, professional and industry experience, and other personal qualities and attributes best suited to perform oversight responsibilities for the Company and its shareholders.

Code of Business Conduct and Ethics

We have adopted a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, and persons performing similar functions. The code covers a broad range of professional conduct, including employment policies, conflicts of interest, intellectual property and the protection of confidential information, as well as adherence to all laws and regulations applicable to the conduct of our business. A copy of the code is available on our website at <http://investors.dna.com> under the caption “Corporate Governance.” If we make any substantive amendments to, or grant any waivers from, the code of business conduct and ethics for any officer or director, we intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K by disclosing the nature of such amendment or waiver on our website or in a current report on Form 8-K.

Political Contributions

In general, it is not our practice to make financial or in-kind political contributions with corporate assets, even when permitted by applicable law. We comply with all applicable state and federal laws related to the disclosure of lobbying activities.

Communications with the Board

Shareholders wishing to communicate with our Board of Directors may do so by writing to the Board, the Chairman, the Lead Independent Director, or the non-employee directors of the Board as a group, at: Intrexon Corporation, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876; Attn: Corporate Secretary.

The communication must prominently display the legend “BOARD COMMUNICATION” in order to indicate to the Corporate Secretary that it is a communication for the Board. Upon receiving such a communication, the Corporate Secretary will promptly forward the communication to the relevant individual or group to which it is addressed. The Board has requested that certain items that are unrelated to the Board’s duties and responsibilities be excluded, such as spam, junk mail and mass mailings, resumes and other forms of job inquiries, surveys and business solicitations or advertisements.

The Corporate Secretary will not forward any communication determined in his or her good faith belief to be frivolous, unduly hostile, threatening, illegal or similarly unsuitable. Each communication subject to this policy that was not forwarded because it was determined by the Corporate Secretary to be frivolous is retained for a reasonable period of time in the Company’s files and made available at the request of any member of the Board to whom such communication was addressed.

BENEFICIAL OWNERSHIP OF COMMON STOCK

The following table sets forth information regarding beneficial ownership of our share capital as of March 31, 2019 by (1) each of our directors, (2) each of our named executive officers, (3) all of our directors and executive officers as a group and (4) each person, or group of affiliated persons, known by us to beneficially own more than five percent of our shares of common stock.

The percentage ownership information is based on an aggregate 160,615,416 shares of common stock outstanding as of March 31, 2019.

Except as otherwise noted below, the address for each person or entity listed in the table is c/o Intrexon Corporation, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876.

| <u>Name of Beneficial Owner</u> | <u>Outstanding Shares Beneficially Owned(1)</u> | <u>Right to Acquire Beneficial Ownership(2)</u> | <u>Total Shares Beneficially Owned</u> | <u>Percentage of Shares Beneficially Owned</u> |
|--|---|---|--|--|
| Directors/director nominees | | | | |
| Cesar Alvarez | 125,368 | 138,711 | 264,079 | * |
| Steven Frank | 213,017 | 138,711 | 351,728 | * |
| Vinita Gupta | 28,491(3) | 91,696 | 120,187 | * |
| Fred Hassan | 32,358 | 106,836 | 139,194 | * |
| Jeffrey Kindler | 84,040 | 147,622 | 231,662 | * |
| Dean Mitchell | 49,661 | 138,711 | 188,372 | * |
| Robert Shapiro | 150,471(4) | 147,622 | 298,093 | * |
| James Turley | 33,812 | 159,502 | 193,314 | * |
| Named executive officers | | | | |
| Randal Kirk(5) | 67,791,169 | — | 67,791,169 | 42.2% |
| Rick Sterling | 94,647 | 316,972 | 411,619 | * |
| Donald Lehr | 47,957 | 367,864 | 415,821 | * |
| Nir Nimrodi(6) | 26,851 | 1,039,277 | 1,066,128 | * |
| Helen Sabzevari | 36,306 | 37,500 | 73,806 | * |
| Current executive officers and directors as a group(7) | 68,968,502(8) | 3,056,727 | 72,025,229 | 44.0% |
| Greater than 5% shareholders | | | | |
| Ares Trading SA(9) | 20,640,119 | 4,666,269 | 25,306,388 | 15.3% |

* Represents beneficial ownership of less than one percent of our outstanding shares of common stock

- (1) Beneficial ownership is determined in accordance with the rules and regulations of the SEC and includes sole or shared voting or investment power with respect to shares of our common stock. The information set forth in the table above is not necessarily indicative of beneficial ownership for any other purpose, and the inclusion of any shares deemed beneficially owned in this table does not constitute an admission of beneficial ownership of those shares. Except as otherwise noted, to our knowledge, the persons and entities named in the table above have sole voting and investment power with respect to all of the shares of common stock beneficially owned by them, subject to community property laws, where applicable.
- (2) Consists of shares of common stock subject to stock options exercisable as of, or within 60 days of March 31, 2019. Shares of common stock subject to stock options that are exercisable as of or within 60 days of March 31, 2019 are deemed to be outstanding and beneficially owned by the person holding the option for the purpose of calculating the percentage ownership of that person, but are not deemed outstanding for the purpose of calculating the percentage ownership of any other person.
- (3) Includes 3,000 shares held in the Sharma-Gupta Marital Property Trust, an affiliate of Vinita Gupta.
- (4) Includes 82,966 shares held in the Robert B. Shapiro Revocable Trust, an affiliate of Robert Shapiro.
- (5) Includes shares held by the following entities over which Mr. Kirk (or an entity over which he exercises exclusive control) exercises exclusive control: 213,805 shares held by ADC 2010, LLC, 151,746 shares held

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by JPK 2008, LLC, 814,571 shares held by JPK 2009, LLC, 879,537 shares held by JPK 2012, LLC, 14,140,139 shares held by Kapital Joe, LLC, 138,603 shares held by Kellie L. Banks (2009) Long Term Trust, 1,403 shares held by Lotus Capital (2000) Company Inc., 5,483,957 shares held by Mascara Kaboom, LLC, 152,701 shares held by MGK 2008, LLC, 941,191 shares held by MGK 2009, LLC, 976,523 shares held by MGK 2011, LLC, 13,340,645 shares held by NRM VI Holdings I, LLC, 243,001 shares held by NRM VII Holdings I, LLC, 16,146,867 shares held by R.J. Kirk Declaration of Trust, 678,323 shares held by Third Security Incentive 2010 LLC, 19,711 shares held by Third Security Incentive 2006 LLC, 59,133 shares held by Third Security Staff 2006 LLC, 118,266 shares held by Third Security Senior Staff 2006 LLC, 1,356,648 shares held by Third Security Senior Staff 2008 LLC, 58,800 shares held by Third Security Senior Staff LLC, 311,287 shares held by Third Security Staff 2001 LLC, 1,356,648 shares held by Third Security Staff 2010 LLC, 46,212 shares held by Third Security Senior Staff 2015 LLC, 46,212 shares held by Third Security Staff 2015 LLC, 1,582,524 shares held by Third Security, LLC, 8,325,000 shares held by TSCP V LLC, 124,495 shares held by ZSK 2008 LLC, and 83,221 shares held by ZSK 2009 LLC.

- (6) As of April 5, 2019, Mr. Nimrodi departed the Company. Mr. Nimrodi's amounts include 4,000 shares held in the Nimrodi Family Trust, an affiliate of Nir Nimrodi.
- (7) Consists of 16 persons as of April 30, 2019.
- (8) As of March 31, 2019, this amount includes 61,122 shares pledged by an executive as collateral for a loan obligation.
- (9) Information is based on the Schedule 13G that was filed with the SEC on January 7, 2019 by Ares Trading SA ("Ares Trading") and certain other information known to us. Includes 4,666,269 shares of common stock, based on a 10 day VWAP of \$5.3576, underlying a convertible note that is immediately convertible into shares of common stock as of March 31, 2019. Ares Trading is a dominantly controlled subsidiary of Merck Serono S.A., Coinsins, Switzerland, an affiliate of Merck KGaA, Darmstadt, Germany. Merck Serono S.A., Coinsins, Switzerland is a wholly owned indirect subsidiary of Merck KGaA, Darmstadt, Germany. Merck Serono S.A., Coinsins, Switzerland and Merck KGaA, Darmstadt, Germany may be deemed to possess sole voting and dispositive power with respect to the securities held of record by Ares Trading. The address of Ares Trading is Zone Industrielle de l'Outriettaz, 1170 Aubonne, Switzerland.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires our executive officers, directors and persons who beneficially own more than 10 percent of our equity securities, to file reports of ownership and changes in ownership with the SEC and provide us with copies of such reports.

Based solely on a review of the copies of these reports furnished to us, we believe that all filing requirements applicable to such officers and directors and greater than 10 percent shareholders were complied with during fiscal year 2018, with the exception of one late Form 4 filing for each non-employee director and each Section 16 officer during 2018, other than Mr. Kirk, in connection with annual equity grants, as well as a late Form 4 filing for Dr. Sabzevari in connection with a separate award of RSUs.

**PROPOSAL 1
ELECTION OF DIRECTORS**

ITEM 1 ON PROXY CARD

Background

Our Board currently consists of nine directors, all of whom were elected as directors by our shareholders at our 2018 Annual Meeting of Shareholders. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal. The Board unanimously approved the nine persons named below as nominees for election to the Board at the Annual Meeting. Each of the nominees: (i) is currently a member of the Board, (ii) has been nominated for election at the Annual Meeting to hold office until the next Annual Meeting of Shareholders or, if earlier, the election of his or her respective successor and (iii) has consented to being named as such and to serve as such if elected.

Our Bylaws provide that, in uncontested director elections (i.e., an election where the number of nominees is not greater than the number of directors to be elected), a nominee for director will be elected to the Board if the votes cast for such nominee's election exceed the votes cast against such nominee's election. However, directors will be elected by a plurality of the votes cast at any meeting of the shareholders for which (i) the Corporate Secretary receives a notice that a shareholder has nominated a person for election to the Board in compliance with the advance notice requirements for shareholder nominees for director set forth in the Bylaws, and (ii) such nomination has not been withdrawn by such shareholder on or prior to the 10th day preceding the date we first mail the notice of meeting for such meeting to the shareholders (i.e., if there is a contested director election). If directors are to be elected by a plurality of the votes cast, the shareholders may withhold votes, but will not be permitted to vote against a nominee.

Our Corporate Governance Guidelines provide that any nominee for director in an uncontested election who receives a greater number of shareholder votes cast "against" his or her election than votes "for" his or her election must promptly tender his or her resignation to the Board for consideration. The Nominating and Governance Committee will then evaluate the best interests of the Company and will recommend to the Board whether to accept or reject the tendered resignation. Following the Board's receipt of this recommendation and determination as to whether to accept the resignation, we will disclose the Board's decision and an explanation of how the decision was reached.

There were no nominee recommendations from shareholders or from any group of shareholders submitted in accordance with our Bylaws. Proxies solicited by the Board will be voted in favor of the nominees listed below unless otherwise specified in the proxy. We know of no reason why the nominees would not be available for election or, if elected, would be unable to serve. While we do not anticipate that any of the nominees will be unable to serve, if any should be unable to serve, the proxy holders reserve the right to substitute another person designated by the Board.

Vote Required and Board Recommendation

Each director nominee must receive the affirmative vote of a majority of the votes cast in order to be elected. As this proposal is not considered a "routine item," your bank, broker or other nominee cannot vote your shares without receiving your voting instructions. Abstentions and broker non-votes will not count "for" or "against" the election of any nominee.

THE BOARD UNANIMOUSLY RECOMMENDS THAT SHAREHOLDERS VOTE "FOR" ALL OF THE PROPOSED DIRECTOR NOMINEES LISTED.

NOMINEES FOR ELECTION AS DIRECTORS

Set forth below is information for each nominee concerning the individual's age, principal occupation, employment and directorships during the past five years, positions with the Company, the year in which he or she first became a director of the Company and his or her term of office as a director. Also set forth below is a brief discussion of the specific experience, qualifications, attributes or skills that led to the Board's conclusion that, in light of our business and structure, each nominee should serve as a director.

| <u>Name</u> <u>Period Served as Director</u> <u>Age</u> | <u>Business Experience During Past Five Years and Other Affiliations</u> |
|--|---|
| Randal Kirk, Chief Executive Officer and Chairman of the Board Director since 2008 Age 65 | <p>Mr. Kirk has served as our Chairman of the Board since February 2008 and as our Chief Executive Officer since April of 2009. Mr. Kirk provides a wealth of strategic, operational and management experience. Mr. Kirk currently serves as the Senior Managing Director and Chief Executive Officer of Third Security, LLC, an investment management firm founded by Mr. Kirk in March 1999. Additionally, Mr. Kirk founded and became Chairman of the Board of New River Pharmaceuticals Inc. (a biopharmaceutical company previously traded on Nasdaq prior to its acquisition by Shire plc in 2007) in 1996, and was President and Chief Executive Officer between October 2001 and April 2007.</p> <p>Since May 2015, Mr. Kirk has served as a member of the board of directors of the Edward Via College of Osteopathic Medicine. Previously, Mr. Kirk served as a member of the board of directors of Scios, Inc. (previously traded on Nasdaq prior to its acquisition by Johnson & Johnson) between February 2000 and May 2002, as a member of the board of directors of Halozyme Therapeutics, Inc. (Nasdaq: HALO), a clinical stage biotechnology company, from May 2007 to May 2018, as a member of the board of directors of ZIOPHARM Oncology, Inc. (Nasdaq: ZIOP), a biotechnology company, from January 2011 to October 2018, and as a member of the board of directors of Clinical Data, Inc. (previously traded on Nasdaq prior to its acquisition by Forest Laboratories, Inc. in April 2011) from September 2002 to April 2011, and was Chairman of the board of directors from December 2004 to April 2011.</p> <p>Mr. Kirk served on the board of visitors of Radford University from July 2003 to June 2009, was Rector of the board of directors from September 2006 to September 2008 and served on the board of directors of the Radford University Foundation, Inc. from September 1998 to May 2011. He served on the board of visitors of the University of Virginia and Affiliated Schools from July 2009 to October 2012, on the Virginia Advisory Council on Revenue Estimates from July 2006 to October 2012 and on the Governor's Economic Development and Jobs Creation Commission from April 2010 to October 2012.</p> <p>Mr. Kirk received a B.A. in Business from Radford University and a J.D. from the University of Virginia. We believe that Mr. Kirk's business experience, including his extensive business experience as chief executive officer of multiple companies, his experience as an investor, his service on committees of academic institutions and other public company boards, combined with his business acumen and judgment, provide our board of directors with valuable strategic and operational expertise and leadership skills.</p> |

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Name
Period Served as Director
Age
Cesar Alvarez,
Director since 2008
Age 71

Business Experience During Past Five Years and Other Affiliations

Mr. Alvarez has served as a Board member since 2008. Mr. Alvarez is the Senior Chairman of the international law firm of Greenberg Traurig, LLP. He previously served as the law firm's Executive Chairman for more than three years, beginning in 2012, and as its Chief Executive Officer from 1997 until his election as Executive Chairman. During his tenure as Chief Executive Officer and Executive Chairman, Mr. Alvarez led the firm to become one of the top ten law firms in the United States by leading its growth from 325 lawyers in eight offices to approximately 1,850 attorneys and government professionals in more than 36 locations in the United States, Europe, Asia and Latin America. Mr. Alvarez also serves as: Chairman of the board of directors of Mednax, Inc. (NYSE: MD), a provider of physician services, including newborn, maternal-fetal, pediatric subspecialties, and anesthesia care; Vice Chairman of the board of directors of Watsco, Inc. (NYSE: WSO), a distributor of air conditioning, heating and refrigeration equipment and related parts and supplies; director of Fairholme Funds, Inc. (FAIRX), a family of publicly traded focused investment funds; and The St. Joe Company (NYSE: JOE), a real estate development company. Mr. Alvarez served on the board of directors of Sears Holding Corporation, a retail company, from January 2013 to May 2017.

Mr. Alvarez holds a Bachelor of Science, a Masters of Business Administration, and a Juris Doctor from the University of Florida. Mr. Alvarez's qualifications to serve on the board of directors, include his experience as Chief Executive Officer, Executive Chairman, and Senior Chairman of one of the nation's largest law firms with approximately \$1.5 billion in revenues with professionals providing services in 39 locations across the country and abroad, as well as his many years of corporate experience, both advising clients in the fields of corporate and securities and serving on the boards of directors of publicly traded and private companies.

Steven Frank,
Director since 2008
Age 59

Mr. Frank has served as a Board member since February 2008. Mr. Frank joined J.P. Morgan Securities LLC, an investment bank, in June 2008 and currently serves as Chairman of Global Healthcare Investment Banking. Mr. Frank had previously been the head of Bear Stearns' Worldwide Health Care Investment Banking group in New York for 16 years and has provided general investment banking services to all types of health care companies. Specifically, Mr. Frank has led or played major roles in hundreds of mergers and acquisitions and financing transactions across the spectrum of deal structures. He has specialized in transactions involving pharmaceutical, medical device and biotechnology companies. Prior to joining Bear Stearns in 1993, Mr. Frank served over ten years as an institutional investor, primarily at State Farm Insurance Company, where he focused on a multi-billion dollar life-sciences portfolio.

Mr. Frank holds a B.S. from Illinois State University and an M.B.A. from the University of Chicago. We believe Mr. Frank's extensive knowledge of our industry and of finance and capital structure strengthen the Board's collective qualifications, skills and experience.

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Name
Period Served as Director
Age
Vinita Gupta,
Director since 2017
Age 51

Business Experience During Past Five Years and Other Affiliations

Ms. Gupta has served as a Board member since April 2017. Since September 2012, Ms. Gupta has served as the chief executive officer of Lupin Limited (“Lupin”). Lupin, headquartered in Mumbai, India, is an innovation led global pharmaceutical company developing and delivering a wide range of branded and generic formulations, biotechnology products and APIs. Ms. Gupta has served as a director of Lupin since 2001 and serves on its Risk Management Committee. In addition, Ms. Gupta has served as the chief executive officer and chairperson of Lupin Pharmaceuticals, Inc., the U.S. wholly owned subsidiary of Lupin, since 2003 and as director on the board of Lupin’s Japanese subsidiary Kyowa Pharmaceuticals since 2007. Ms. Gupta has held various positions at Lupin since joining the company in 1993.

Ms. Gupta was named 2015 Ernst & Young Entrepreneur of the Year and won the 2016 Forbes India Leadership Awards — Entrepreneur of the Year. Ms. Gupta is regularly named in Forbes Asia Top 50 Power Business women listings for Asia Pacific. Ms. Gupta graduated from the University of Mumbai with a degree in pharmacy and received her MBA from the Kellogg School of Management at Northwestern University. We believe Ms. Gupta’s qualifications to serve on our board of directors include her strong leadership and management experience within the pharmaceutical industry, including serving as the chief executive officer of a global pharmaceutical corporation and her significant knowledge of operations, strategy, government relations, regulatory, finance and investments and mergers and acquisitions, including the fact that she was not only responsible for setting up Lupin’s business in the U.S and Europe but was instrumental in formulating and executing strategy that has helped Lupin emerge as a global pharmaceutical corporation.

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Name
Period Served as Director
Age
Fred Hassan,
Director since 2016
Age 73

Business Experience During Past Five Years and Other Affiliations

Mr. Hassan has served as a Board member since June 2016. Mr. Hassan joined Warburg Pincus LLC, a global private equity investment institution, in 2010 and currently serves as Director. Previously, Mr. Hassan served as Chairman and Chief Executive Officer of Schering-Plough from 2003 to 2009. Before assuming these roles, from 2001 to 2003, Mr. Hassan was Chairman and Chief Executive Officer of Pharmacia Corporation, a company formed as a result of the merger of Monsanto Company and Pharmacia & Upjohn, Inc. He joined Pharmacia & Upjohn, Inc. as Chief Executive Officer in 1997. Mr. Hassan previously held leadership positions with Wyeth serving as Executive Vice President, and was a member of the board from 1995 to 1997. Earlier in his career, he spent a significant tenure with Sandoz Pharmaceuticals and headed the company's U.S. pharmaceuticals business.

Since July 2015, Mr. Hassan has served as a director of Amgen, Inc. (Nasdaq: AMGN), a leading biotechnology company. Mr. Hassan served as a director of Time Warner Inc. (now Warner Media, LLC), a global leader in media and entertainment, from October 2009 to June 2018. In the course of his career, he has held numerous directorships, including those at Avon Products, Inc. from 1999 to 2013, Bausch & Lomb from 2010 until its acquisition by Valeant Pharmaceuticals International, Inc. (NYSE: VRX) ("Valeant") in 2013, and Valeant from 2013 to 2014. Mr. Hassan has chaired notable pharmaceutical industry organizations including The Pharmaceutical Research and Manufacturers of America (PhRMA) and The International Federation of Pharmaceutical Manufacturers Associations (IFPMA) and is also a member of The Business Council. Mr. Hassan received a B.S. degree in chemical engineering from the Imperial College of Science and Technology at the University of London and an M.B.A. from Harvard Business School. We believe Mr. Hassan's qualifications to serve on our board of director include his strong leadership and management experience within our industry, including significant knowledge of operations, strategy, government relations, regulatory, finance and investments and mergers and acquisitions.

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Name
Period Served as Director
Age
Jeffrey Kindler,
Director since 2011
Age 63

Business Experience During Past Five Years and Other Affiliations

Mr. Kindler has served as a Board member since November 2011. He is the Chief Executive Officer of Centrexion Corporation, a privately held clinical stage biopharmaceutical company; a Venture Partner at Lux Capital, a leading venture capital firm; and a managing director at Starboard Capital Partners, a private equity firm. Mr. Kindler was Chief Executive Officer and Chairman of the Board of Pfizer, Inc. (NYSE:PFE), a pharmaceutical company, from 2006 until his retirement in December 2010. He joined Pfizer in 2002 as Executive Vice President and General Counsel and assumed positions of increasing responsibility until being named Chief Executive Officer in 2006. Prior to joining Pfizer, he was Chairman of Boston Market Corporation from 2000 to 2001 and President of the Partner Brands group of McDonald's Corporation during 2001.

In addition to serving on Intrexon's Board, Mr. Kindler currently serves on the boards of Siga Technologies, Inc. (Nasdaq:SIGA), a developer of novel antiviral therapeutics, vTV Therapeutics (Nasdaq:VTVT), a development-stage biopharmaceutical company, and Perrigo Company (NYSE:PRGO), a healthcare company. Mr. Kindler also serves as a board member for a number of privately held companies and for several civic, charitable, educational and other organizations. Previously, Mr. Kindler served on the board of Chipotle Mexican Grill, Inc. (NYSE:CMG), a chain of Mexican restaurants, from 2012 to 2014. Mr. Kindler received a B.A. from Tufts University and a J.D. from Harvard Law School. We believe Mr. Kindler brings leadership, extensive business, operating, legal and policy, and corporate strategy experience to our Board, along with tremendous knowledge of several of the industries in which we operate as well as the fundamentals of our business.

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Name
Period Served as Director
Age
Dean Mitchell,
Director since 2009
Age 63

Business Experience During Past Five Years and Other Affiliations

Mr. Mitchell has served as a Board member since March 2009. In July 2013, Mr. Mitchell was appointed Executive Chairman and board member of Covis Pharma Holdings S.a.r.l., a private specialty pharmaceutical company based in Luxembourg. Since 2012, he has served as a non-executive board member of ImmunoGen, Inc. (Nasdaq:IMGN), a public oncology company, and since July 2014 he has served as a board member of Theravance Biopharma, Inc. (Nasdaq:TBPH), a public specialty pharmaceutical company. Mr. Mitchell also served as Chairman and board member of PaxVax Inc., a specialty vaccine company, from December 2015 to October 2018 when it was acquired by Emergent BioSolutions Inc.

Previously, Mr. Mitchell was President and Chief Executive Officer and a board member of Lux Biosciences, Inc., a privately held ophthalmology company, from July 2010 until June 2013. Prior to that he was President and Chief Executive Officer of Alpharma Inc., a global specialty pharmaceutical company, and also was appointed a member of its board of directors in July 2006. Alpharma Inc. was acquired by King Pharmaceuticals, Inc. in December 2008, and Mr. Mitchell ceased to be an officer and a director of Alpharma Inc. in December 2008. Prior to this, he was President and Chief Executive Officer of Guilford Pharmaceuticals Inc., a public company, from December 2004 until its acquisition by MGI Pharma Inc., a public biopharmaceutical company focused in oncology and acute care, in October 2005, and was a non-executive director of MGI Pharma Inc. until its acquisition by Eisai Co., Ltd. in January 2008. Mr. Mitchell was at Bristol-Myers Squibb, a public company, from 2001 until 2004 in several key leadership roles including President International, President U.S. Primary Care and Vice President, Strategy. He also spent 15 years at Glaxo SmithKline, a public company, and its predecessor companies, most recently as Senior Vice President, Clinical Development and Product Strategy from 1999 to 2001, and prior to that as Vice President and General Manager, Specialty Divisions, Strategic Planning and Business Development, from 1995 to 1999.

Mr. Mitchell received an M.B.A. from City University Business School, in London, U.K., and a B.Sc. degree in Biology from Coventry University, U.K. We believe Mr. Mitchell brings to our Board extensive experience in the pharmaceutical industry, specifically in the areas of management, business and corporate development, sales and marketing and clinical development, as well as his significant experience serving on boards of directors of companies in our industry.

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Name
Period Served as Director
Age
Robert Shapiro,
Director since 2011
Age 80

Business Experience During Past Five Years and Other Affiliations

Mr. Shapiro has served as a Board member since November 2011. Mr. Shapiro is Chairman, Managing Director and Co-Founder of Sandbox Industries, a development firm that creates, launches and manages new business concepts. Sandbox Industries also manages venture funds, including the BlueCross BlueShield Venture Partners fund and the Cultivan Sandbox Food & Agriculture Venture Funds. Mr. Shapiro has served as Managing Director of Sandbox Industries since its formation in 2004. He was formerly Chairman and Chief Executive Officer of Monsanto Company from 1995 to 2000. Upon the merger of Monsanto Company with Pharmacia & Upjohn, he served as Chairman of the newly-formed Pharmacia Corporation. Previously, Mr. Shapiro was President and Chief Operating Officer of Monsanto Company from 1992 to 1995 and President of Monsanto Company's Agriculture Group from 1990 to 1992, Chairman and Chief Executive Officer of The NutraSweet Company, a subsidiary of Monsanto Company, from 1985 to 1990 and President of the NutraSweet Group of G.D. Searle & Co., or Searle, from 1982 to 1985, where he previously served as Vice President and General Counsel. Before joining Searle, Mr. Shapiro was Vice President and General Counsel of General Instrument Corporation from 1972 to 1979. Prior to this, he practiced law in New York City; served in government as Special Assistant to the General Counsel and later to the Undersecretary of the U.S. Department of Transportation; and served as a professor of law at Northeastern University in Boston and the University of Wisconsin in Madison.

Mr. Shapiro has served on the boards of directors of the New York Stock Exchange (later NYSE Euronext), Citigroup Inc., Rockwell International, Silicon Graphics Inc. and Sapphire Energy, Inc. He currently serves as a director of Advanced Animal Diagnostics, Inc., a privately-held corporation. Mr. Shapiro has served on the President's Advisory Committee on Trade Policy and on the White House Domestic Policy Review of Industrial Innovation. He is a Fellow of the American Academy of Arts and Sciences. Mr. Shapiro is a graduate of Harvard College and holds a J.D. from Columbia University School of Law. As a result of these and other professional experiences, we believe Mr. Shapiro possesses particular knowledge and experience in: strategic planning and leadership of complex organizations; accounting, finance and capital structure; legal, regulatory and government affairs; people management; and board practices of other entities, which strengthen the Board's collective qualifications, skills and experience.

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Name
Period Served as Director
Age
James Turley,
Director since 2014
Age 63

Business Experience During Past Five Years and Other Affiliations

Mr. Turley has served as a Board member since April 2014. Mr. Turley previously served as the Chairman and Chief Executive Officer of Ernst & Young LLP (“Ernst & Young”) from 2001 until his retirement in June 2013. From 1994 to 2001, Mr. Turley served as Regional Managing Partner of Ernst & Young. Mr. Turley serves on the board of directors of Citigroup Inc. (NYSE:C), a leading global bank, Citibank, N.A., the commercial banking operations of Citigroup Inc., Emerson Electric Co. (NYSE:EMR), a global leader in bringing technology and engineering together to provide innovative solutions for customers in industrial, commercial, and consumer markets around the world, and Northrop Grumman Corporation (NYSE:NOC), a leading global security company providing innovative systems, products and solutions to government and commercial customers worldwide. Mr. Turley is also a board member of the Boy Scouts of America, a board member of Kohler Company (a privately-held company) and a board member of the MUNY Theatre of St. Louis and Theatre Forward.

Mr. Turley holds an undergraduate degree and a master’s degree in accounting from Rice University. We believe Mr. Turley’s extensive management experience as the former Chairman and Chief Executive Officer of one of the world’s largest accounting firms, his accounting and financial expertise and his experience in serving on the boards of directors of publicly traded companies make him well-qualified to serve on our Board. Having served as Chair and CEO of Ernst & Young, Mr. Turley developed significant expertise in the areas of compensation, litigation, corporate affairs, and corporate governance. Mr. Turley also possesses extensive knowledge and expertise in the areas of financial reporting, business, and risk management.

DIRECTOR COMPENSATION

Non-Employee Director Compensation

The compensation of our non-employee directors is established by our Compensation Committee. This compensation is periodically reviewed by the committee based on market practice information provided by our outside compensation consultant, F. Daniel Siciliano, to ensure continued alignment with company goals and shareholder interest. Under our current policy, adopted in December 2017, our non-employee directors receive the compensation set forth in the table below. We also reimburse our non-employee directors for reasonable out-of-pocket expenses incurred in connection with attending our Board and committee meetings.

| <u>Element of Compensation</u> | <u>Compensation Amount</u> |
|---|---|
| Annual Retainer ⁽¹⁾ | \$50,000 |
| Committee Chair Additional Retainer ⁽¹⁾ | \$12,500 |
| Committee Member Additional Retainer ⁽¹⁾ | \$6,500 |
| Annual Equity Awards | \$125,000 fixed value options ⁽²⁾ \$125,000 fixed value RSUs ⁽³⁾ |
| Initial Appointment Equity Awards | \$180,000 fixed value options ⁽⁴⁾ \$180,000 fixed value RSUs ⁽⁵⁾ |

- (1) Non-employee directors have the option to receive shares of common stock, valued at the fair market value at the time of issuance, in lieu of cash retainers. We do not issue, nor do we pay cash for, fractional shares. Annual retainer fees are payable in advance at the first regularly scheduled meeting of the Board for the calendar year.
- (2) All non-employee directors are entitled to an annual grant of options to purchase shares of common stock (with an exercise price equal to the fair market value on the date of grant), which are granted at the first regularly scheduled meeting of the Board for the calendar year and are fully vested at the time of grant.
- (3) All non-employee directors are entitled to an annual grant of RSUs, which are granted at the first regularly scheduled meeting of the Board for the calendar year and vest in full on the one year anniversary of the date of the grant.
- (4) Any newly appointed non-employee director receives, upon appointment, a one-time grant of options to purchase shares of common stock (with an exercise price equal to the fair market value on the date of grant) with one quarter of such options vesting each year on the anniversary of appointment to the Board, subject to continued Board service.
- (5) Any newly appointed non-employee director receives, upon appointment, a one-time grant of RSUs, which vest in full on the one year anniversary of appointment to the Board, subject to continued Board service.

DIRECTOR COMPENSATION TABLE FOR 2018

The following table discloses all compensation provided to the non-employee directors for the most recently completed fiscal year ended December 31, 2018:

| <u>Name(1)</u> | <u>Fees Earned or Paid in Cash(2)</u> <u>(\$)</u> | <u>Stock Awards(3,5)</u> <u>(\$)</u> | <u>Option Awards(4,5)</u> <u>(\$)</u> | <u>Total</u> <u>(\$)</u> |
|-----------------|--|---|--|-----------------------------|
| Cesar Alvarez | \$ 62,500 | \$ 124,994 | \$ 124,996 | \$312,490 |
| Steven Frank | \$ 49,991 | \$ 124,994 | \$ 124,996 | \$299,981 |
| Vinita Gupta | \$ 56,485 | \$ 124,994 | \$ 124,996 | \$306,475 |
| Fred Hassan | \$ 56,485 | \$ 124,994 | \$ 124,996 | \$306,475 |
| Jeffrey Kindler | \$ 68,999 | \$ 124,994 | \$ 124,996 | \$318,989 |
| Dean Mitchell | \$ 56,485 | \$ 124,994 | \$ 124,996 | \$306,475 |
| Robert Shapiro | \$ 62,995 | \$ 124,994 | \$ 124,996 | \$312,985 |
| James Turley | \$ 62,489 | \$ 124,994 | \$ 124,996 | \$312,479 |

- (1) Randal Kirk, our Chief Executive Officer and Chairman of the Board, is not included in this table. He is an employee of the Company and receives no compensation for service as a director. The compensation received by Mr. Kirk is shown in the Summary Compensation Table on page 62.
- (2) Our directors may elect to receive any portion of their annual retainer fees in shares of our common stock instead of cash. During 2018, Mr. Alvarez elected to receive all annual retainer fees in cash and our remaining directors elected to receive all annual retainer fees in shares of our common stock.
- (3) Represents the aggregate grant date fair market value of the annual grant of RSUs, computed in accordance with Financial Accounting Standards Board (“FASB”) Accounting Standards Codification Topic 718 (“ASC Topic 718”).
- (4) Represents the aggregate grant date fair market value of the annual grant of stock options, computed in accordance with ASC Topic 718, based on the closing price of our common stock on the date of grant. For a full description of the assumptions we use in computing this amount, see Note 2 to our consolidated financial statements for the year ended December 31, 2018, which is included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018, as filed with the SEC on March 1, 2019.
- (5) The following table provides information regarding the aggregate outstanding equity awards held by each non-employee director as of December 31, 2018:

| <u>Name</u> | <u>RSUs Outstanding (#)</u> | <u>Stock Options Outstanding (#)</u> | <u>Unvested Stock Options (#)</u> |
|-----------------|-----------------------------|--------------------------------------|-----------------------------------|
| Cesar Alvarez | 7,911 | 99,229 | — |
| Steven Frank | 7,911 | 99,229 | — |
| Vinita Gupta | 7,911 | 69,246 | 30,000 |
| Fred Hassan | 7,911 | 84,466 | 20,080 |
| Jeffrey Kindler | 7,911 | 105,172 | — |
| Dean Mitchell | 7,911 | 105,167 | — |
| Robert Shapiro | 7,911 | 105,172 | — |
| James Turley | 7,911 | 117,052 | — |

Equity Ownership for Board of Directors

The Board believes that directors should hold meaningful equity ownership positions in the Company to help align the interests of directors with those of shareholders. Under our stock ownership guidelines for directors, non-employee directors are expected to be beneficial owners of shares of common stock in the Company with a market value equivalent to at least five times the amount of annual cash retainer fees (not including any additional retainer for service as a Committee Chair or Lead Independent Director, and as adjusted

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from time to time). Non-employee directors have five years to satisfy the ownership requirement, which is measured from the later of June 2018 (when the current requirement was adopted) or the date of appointment for newly appointed non-employee directors. Compliance with the requirement is measured on an annual basis each year using the closing price of our common stock as of December 31st.

For purposes of the equity ownership guidelines described above, a non-employee director's shareholdings include, in addition to shares held outright, any stock underlying vested but unexercised stock options assuming the stock options have been "net exercised." Stock underlying equity awards that remain unvested will not count towards the requirement, regardless of whether the award is time- or performance-based.

Until a non-employee director has met our equity ownership guidelines, he or she is expected to hold 100 percent of any stock acquired through exercise of a stock option or vesting of restricted stock, net of shares sold to cover the cost of acquisition and any tax obligation. In addition, non-employee directors must further hold all net shares for a minimum of one year following exercise, in the case of stock options, or vesting, in the case of other equity awards.

**PROPOSAL 2
RATIFICATION OF APPOINTMENT OF INDEPENDENT
REGISTERED PUBLIC ACCOUNTING FIRM**

ITEM 2 ON PROXY CARD

Background

After consideration of the firm’s qualifications and past performance, the Board, through the Audit Committee, has appointed PricewaterhouseCoopers LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019. PricewaterhouseCoopers LLP also served as independent registered public accounting firm for the fiscal year ended December 31, 2018 and has served as our auditor since 2006. Pursuant to its charter, the Audit Committee of our Board approved in advance each professional service performed by PricewaterhouseCoopers LLP during fiscal year 2018 and considered the possible effect of the provision of such service on the auditors’ independence. Information relating to fees paid to PricewaterhouseCoopers LLP over the past two years is set forth in the table below.

Under the Sarbanes-Oxley Act of 2002 and the rules of the SEC promulgated thereunder, the Audit Committee is solely responsible for the selection, appointment, compensation and oversight of the work of our independent registered public accounting firm. Although submission of the appointment of an independent registered public accounting firm to shareholders for ratification is not required by law, the Board considers the appointment of our independent registered public accounting firm to be an important matter of shareholder concern and is submitting the appointment of PricewaterhouseCoopers LLP for ratification by our shareholders, as a matter of good corporate practice. One or more representatives of PricewaterhouseCoopers LLP are expected to be present at the Annual Meeting with the opportunity to make a statement if they so desire and to be available to respond to appropriate questions.

If shareholders do not ratify the selection of PricewaterhouseCoopers LLP, the Board may, but is not required to, reconsider its selection if the shareholders’ action so warrants. Even if the selection is ratified, the Audit Committee, exercising its own discretion, may select different auditors at any time during the year if it determines that such a change would be in our best interests and in the best interests of our shareholders.

Required Vote and Board Recommendation

The affirmative vote of a majority of the votes cast on the matter is required for the approval of this item. As this proposal is considered a “routine item,” your bank, broker or other nominee may vote your shares “FOR” the proposal without receiving your voting instructions. Abstentions and broker non-votes will not count either in favor of or against the proposal.

THE BOARD UNANIMOUSLY RECOMMENDS THAT SHAREHOLDERS VOTE “FOR” THE RATIFICATION OF THE APPOINTMENT OF PRICEWATERHOUSECOOPERS LLP.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**Principal Accountant Fees**

The following table summarizes the aggregate fees of PricewaterhouseCoopers LLP, our independent registered public accounting firm, billed to us for the fiscal years ended December 31, 2018 and 2017 for audit and other services:

| | Fiscal Year Ended December 31, | |
|--------------------|-----------------------------------|---------------------|
| | 2018 | 2017 |
| Audit Fees | \$ 3,023,864 | \$ 1,716,117 |
| Audit-Related Fees | — | 53,000 |
| Tax Fees | 149,100 | 115,588 |
| All Other Fees | — | — |
| Total Fees | <u>\$ 3,172,964</u> | <u>\$ 1,884,705</u> |

Audit Fees. Audit fees include professional services rendered by PricewaterhouseCoopers LLP for the audit of our annual financial statements, including the reviews of the financial statements included in our quarterly reports on Form 10-Q. This category also includes fees for assistance with complex accounting transactions, fees for audits provided in connection with subsidiaries and statutory filings or services that generally only the principal auditor can reasonably provide to a client, and consents and assistance with and review of documents filed with the SEC.

Audit-Related Fees. Audit-related fees consist of amounts for assurance and related services for expanded audit procedures and reporting consultations for recent accounting pronouncements to be adopted.

Tax Fees. Tax fees include original and amended tax returns, studies supporting tax return amounts as may be required by Internal Revenue Service regulations, claims for refunds, assistance with tax audits and other work directly affecting or supporting the payment of taxes, planning, research and advice supporting our efforts to maximize the tax efficiency of our operations for fiscal years 2018 and 2017.

All Other Fees. All other fees are fees for products or services other than those in the above three categories. In fiscal years 2018 and 2017, PricewaterhouseCoopers LLP did not provide any services other than those described above.

Pre-Approval Policy

The Audit Committee has adopted a written policy for the provision of audit services and permitted non-audit services by our independent registered public accounting firm. Our Chief Financial Officer has primary responsibility to the Audit Committee for administration and enforcement of this policy and for reporting non-compliance. Under the policy, our Audit Committee receives a presentation of an annual budget and plan for audit services and for any proposed audit-related, tax or other non-audit services to be performed by the independent registered public accounting firm, but management may, from time to time, seek approval of certain additional audit or non-audit services not provided for in the budget.

AUDIT COMMITTEE REPORT

In accordance with the Audit Committee Charter, the Audit Committee assists the Board in fulfilling its responsibility for oversight of the integrity of the accounting, auditing and financial reporting practices of the Company. During the fiscal year ended December 31, 2018, the Audit Committee met 19 times. The Audit Committee reviewed and discussed the interim financial information contained in the Company's Quarterly Reports on Form 10-Q with our Chief Financial Officer, our Chief Legal Officer and the independent registered public accounting firm prior to public release.

In discharging its oversight responsibility as to the audit process, the Audit Committee has received the written disclosures and the letter from the independent registered public accounting firm required by applicable requirements of the Public Company Accounting Oversight Board regarding the independent registered public accounting firm's communications with the Audit Committee concerning independence, and has discussed with the independent registered public accounting firm the independent registered public accounting firm's independence. The Audit Committee also discussed with management the quality and adequacy of the Company's internal controls. The Audit Committee reviewed with the independent registered public accounting firm their audit plans, audit scope and identification of audit risks.

The Audit Committee members are not professional accountants or auditors, and their functions are not intended to duplicate or to certify the activities of management or the Company's independent registered public accounting firm. The Audit Committee oversees the Company's financial reporting process on behalf of the Board. The Company's management has primary responsibility for the financial statements and reporting process, including the Company's internal control over financial reporting. The independent registered public accounting firm is responsible for performing an integrated audit of the Company's financial statements and internal control over financial reporting in accordance with the auditing standards of the Public Company Accounting Oversight Board.

The Audit Committee reviewed and discussed with the independent registered public accounting firm all communications required by generally accepted auditing standards, including those described in Statement on Auditing Standards No. 1301 ("Communication with Audit Committees") as adopted by the Public Company Accounting Oversight Board and, with and without management present, discussed and reviewed the results of the independent registered public accounting firm's audit of the financial statements. The Audit Committee also considered, as it determined appropriate, tax matters and other areas of financial reporting and the audit process over which the Audit Committee has oversight.

The Audit Committee reviewed and discussed the audited financial statements of the Company as of and for the fiscal year ended December 31, 2018, with management and the independent registered public accounting firm. Management has the responsibility for the preparation of the Company's financial statements and the independent registered public accounting firm has the responsibility for the audit of those statements.

Based on the above-mentioned review and discussions with management and the independent registered public accounting firm, the Audit Committee recommended to the Board that the Company's audited financial statements be included in its Annual Report on Form 10-K for the fiscal year ended December 31, 2018, for filing with the SEC. The Audit Committee also reappointed PricewaterhouseCoopers LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2019.

THE AUDIT COMMITTEE

Jeffrey Kindler, Chair
Dean Mitchell
Robert Shapiro

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The “Audit Committee Report” above shall not be deemed incorporated by reference by any general statement incorporating this Proxy Statement into any filing under the Securities Act of 1933, as amended, or under the Securities Exchange Act of 1934, as amended, except to the extent that we specifically incorporate this information by reference, and shall not otherwise be deemed filed under such Acts.

PROPOSAL 3
NON-BINDING PROPOSAL TO APPROVE THE COMPENSATION OF THE
NAMED EXECUTIVE OFFICERS

ITEM 3 ON PROXY CARD

General

Our Board has determined to provide our shareholders the opportunity to vote each year to approve, on an advisory basis, the compensation of our named executive officers, as disclosed in this Proxy Statement. The compensation of our named executive officers is described in the Compensation Discussion and Analysis, the compensation tables and the accompanying narrative on pages 50 to 78 of this Proxy Statement.

The Compensation Committee designs our executive compensation program to attract, motivate, and retain executive officers, who are critical to our success. Under these programs, our named executive officers are rewarded for the achievement of our near-term and longer-term financial and strategic goals and for driving corporate financial performance and stability. The programs contain elements of cash and equity-based compensation and are designed to align the interests of our executives with those of our shareholders.

Our compensation program reflects competition and best practices in the marketplace. The mix of compensation components is competitive with that of other companies of similar size and operational characteristics, links compensation to individual and corporate performance and encourages stock ownership by senior management. Based on its review of the total compensation of our named executive officers for fiscal year 2018, the Compensation Committee believes that the total compensation for each of the named executive officers is reasonable and effectively achieves the objective of aligning compensation with performance measures directly related to our financial goals and creation of shareholder value without encouraging our named executive officers to take unnecessary or excessive risks.

The Compensation Discussion and Analysis section of this Proxy Statement and the accompanying tables and narrative provide a comprehensive review of our named executive officer compensation objectives, program and rationale. We urge you to read this disclosure before voting on this proposal.

Pursuant to Section 14A of the Exchange Act, our Board is requesting shareholders approve an advisory vote on the following resolution:

“RESOLVED, that our shareholders approve, on a non-binding advisory basis, the compensation of the named executive officers as disclosed in the Proxy Statement for the 2019 Annual Meeting of Shareholders pursuant to the compensation disclosure rules of the Securities and Exchange Commission, including the Compensation Discussion and Analysis, the Summary Compensation Table, the other related tables and the accompanying narrative.”

As an advisory vote, your vote on this proposal will be non-binding on the Board. However, the Board values the opinions that our shareholders express in their votes and will consider the outcome of the vote when making future executive compensation decisions as it deems appropriate.

The Company seeks shareholder approval of the Company’s executive compensation on an annual basis. The next opportunity for our shareholders to approve on a non-binding basis the compensation of our named executive officers will be at our 2020 Annual Meeting.

Vote Required and Board Recommendation

The affirmative vote of a majority of the votes cast on the matter is required for the approval of this item. As this proposal is not considered a “routine item,” your bank, broker or other nominee cannot vote your shares without receiving your voting instructions. Abstentions and broker non-votes will not count either in favor of or against the proposal.

THE BOARD UNANIMOUSLY RECOMMENDS THAT SHAREHOLDERS VOTE TO APPROVE THE NON-BINDING ADVISORY PROPOSAL APPROVING THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS.

PROPOSAL 4 APPROVAL OF AN AMENDMENT TO THE AMENDED AND RESTATED INTREXON CORPORATION 2013 OMNIBUS INCENTIVE PLAN

ITEM 4 ON PROXY CARD

Overview

The Board requests that shareholders approve the proposed amendment (the “Amendment”) to the Amended and Restated Intrexon Corporation 2013 Omnibus Incentive Plan (the “2013 Plan”) to increase the number of shares of common stock authorized for issuance under the 2013 Plan by 5,000,000 shares. Other than the increase in the number of shares authorized for issuance under the 2013 Plan reflected in the proposed Amendment, there are no other changes proposed to the 2013 Plan. A summary of the material terms of the 2013 Plan appears in “EQUITY COMPENSATION PLANS AND OTHER BENEFIT PLANS” beginning on page 66 and a copy of the 2013 Plan and the Amendment are attached as an appendix to this Proxy Statement, all of which are incorporated herein by reference.

Share Increase

The 2013 Plan was approved by the shareholders shortly before our initial public offering in August 2013 and has served as an important part of our overall compensation program. The 2013 Plan enables us to grant equity-based compensation awards designed to provide an additional incentive for our officers, employees, non-employee directors and other service providers who are critical to the achievement of our long-term financial and strategic goals. We believe that the Amendment, which amends the 2013 Plan to increase by 5,000,000 the number of shares of common stock authorized for issuance under the 2013 Plan, supports our ability to attract, motivate and retain the most competent and skilled officers, employees, non-employee directors and other service providers which is a significant factor for our long-term success. Awards made under the 2013 Plan, including annual cash incentive awards, long-term incentive equity grants, and grants of RSUs representing the salary of our Chief Executive Officer, are designed to align the individual interests of our officers, employees, non-employee directors and other service providers with the interests of our shareholders and reward them for the creation of long-term shareholder value.

We believe that the number of shares currently available for issuance under the 2013 Plan may not be sufficient in view of our compensation structure and strategy and that the availability of the additional shares sought in this proposal will help us to continue to have a sufficient number of shares of common stock authorized for issuance of awards under the 2013 Plan. As a result, the Compensation Committee and the Board have approved the Amendment, subject to the approval of our shareholders at the Annual Meeting.

As of March 31, 2019, there were options to purchase an aggregate of 11,312,743 shares of common stock outstanding under the 2013 Plan at a weighted-average exercise price of \$27.19 per share and a weighted-average remaining term of 6.91 years, 2,288,017 RSUs outstanding under the 2013 Plan, and 2,561,296 shares of common stock reserved for future issuance under the 2013 Plan, which is our only plan under which equity awards can currently be made to officers, employees, non-employee directors and other service providers. As of March 31, 2019, all of our employees were eligible to receive awards under the 2013 Plan, including ten executive officers. As of March 31, 2019, eight non-employee directors were also eligible to receive awards under the 2013 Plan. The granting of awards under the 2013 Plan is discretionary, and we cannot now determine the number or type of awards to be granted in the future to any particular person or group.

In making the recommendation to increase the 2013 Plan’s share reserve by an additional 5,000,000 shares, we considered a number of factors, including:

Importance of Long-Term Equity Incentives. Long-term equity incentives are an important component of our executive compensation program, motivating officers, employees, non-employee directors and other service

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providers to make decisions that focus on creating long-term value for shareholders, aligning their interests with the interests of shareholders and serving as an effective recruitment and retention tool.

Historical Burn Rate. We are committed to managing the use of our equity incentives prudently to balance the benefits equity compensation brings to our compensation program with the dilution it causes our shareholders. As part of our analysis when considering the proposed share increase, we considered the 2013 Plan's "burn rate," or the number of shares subject to equity awards granted since our initial public offering in August 2013, divided by the weighted average number of shares outstanding for that period. We also considered that in 2018 we made equity grants from the 2013 Plan in connection with the following: leadership appointments to advance efforts in the Company and within our operating subsidiaries; the compensation of employees who we believe are critical to furthering our business strategy; incentivizing key officers and employees of the Company; our Services Agreement with Third Security; and the RSU Agreement with Mr. Kirk. We believe these new hires and compensation decisions are critical to the development and strength of our senior management team to attract the experience and talent necessary to further implement our strategy.

Shareholder Value Transfer Test. When evaluating the appropriate number of shares to increase the share reserve under the Plan, we reviewed the shareholder value transfer of the proposed increase, calculated as the value of available shares and plan awards as a percentage of our market capitalization, and determined that the addition of 5,000,000 shares to the 2013 Plan share reserve was reasonable and consistent with industry guidelines.

Expected Duration. We expect that the shares available for future awards, including the additional shares if this proposal is approved by our shareholders, will be sufficient for currently-anticipated awards under the 2013 Plan for the foreseeable future. Expectations regarding future share usage could be impacted by a number of factors such as hiring and promotion activity at the executive level; the rate at which shares are returned to the 2013 Plan reserve upon awards' expiration, forfeiture or cash settlement; the future performance of our stock price; consequences of acquiring other companies; and other factors. While we believe that the assumptions we used are reasonable, future share usage may differ from current expectations. If, however, the shareholders do not approve the Amendment to increase the number of shares reserved for issuance under the 2013 Plan, there may not be a sufficient number of shares of our common stock available to achieve our recruiting and retention objectives.

Text of the Amendment

The first paragraph of Section 6.02 of the 2013 Plan would be revised as follows:

"6.02 Aggregate Limit

The maximum aggregate number (the "Maximum Aggregate Number") of shares of Common Stock which may be subject to Awards under this Plan is ~~20,000,000~~ 25,000,000 shares of Common Stock."

Aggregate Grants under the 2013 Plan

The following table provides information with respect to the aggregate number of options and RSUs granted under the 2013 Plan to our (i) named executive officers, (ii) our current executive officers as a group, (iii) our current non-employee directors and (iv) all employees as a group except current officers, from inception of the 2013 Plan through March 31, 2019. It is not possible to determine the number of options or RSUs that will be granted in the future to participants under the 2013 Plan.

| <u>Name and Position</u> | <u>Options Awarded(1)</u> | <u>RSUs Awarded</u> |
|---|-------------------------------|-------------------------|
| Randal Kirk, Chairman and Chief Executive Officer | — | 533,682 |
| Rick Sterling, Chief Financial Officer | 432,841 | 128,595 |
| Donald Lehr, Chief Legal Officer | 432,855 | 128,595 |
| Nir Nimrodi, Former Chief Business Officer | 1,039,277 | 128,595 |
| Helen Sabzevari, President, Precigen, Inc. | 150,000 | 223,503 |
| Current executive officers as a group | 2,642,810 | 1,528,755 |
| Cesar Alvarez, Director | 117,932 | 32,614 |
| Steven Frank, Director | 117,932 | 32,614 |
| Vinita Gupta, Director | 111,696 | 32,614 |
| Fred Hassan, Director | 126,916 | 32,614 |
| Jeffrey Kindler, Director | 117,932 | 32,614 |
| Dean Mitchell, Director | 117,932 | 32,614 |
| Robert Shapiro, Director | 117,932 | 32,614 |
| James Turley, Director | 159,502 | 32,614 |
| All employees as a group except current officers | 19,565,417 | 1,523,002 |

- (1) The numbers of options reflect antidilution adjustments made to outstanding options in connection with distributions of shares of common stock of ZIOPHARM Oncology, Inc. and AquaBounty Technologies, Inc. to the Company's shareholders in June 2015 and January 2017, respectively, in accordance with the 2013 Plan.

Vote Required and Board Recommendation

The affirmative vote of a majority of the votes cast on the matter is required for the approval of this item. As this proposal is not considered a "routine item," your bank, broker or other nominee cannot vote your shares without receiving your voting instructions. Abstentions and broker non-votes will have no effect on the vote.

THE BOARD UNANIMOUSLY RECOMMENDS THAT THE SHAREHOLDERS VOTE "FOR" THE APPROVAL OF THE AMENDMENT TO THE 2013 PLAN.

PROPOSAL 5
APPROVAL OF THE INTREXON CORPORATION
2019 INCENTIVE PLAN FOR NON-EMPLOYEE SERVICE PROVIDERS

ITEM 5 ON PROXY CARD

Overview

The Board requests that shareholders consider and approve the Intrexon Corporation 2019 Incentive Plan for Non-Employee Service Providers (the “2019 Plan”). Upon recommendation of our Compensation Committee, the Board adopted the 2019 Plan in April 2019.

If our shareholders approve the 2019 Plan, it will become effective on the date of the Annual Meeting, June 12, 2019. The Board believes that approval of the 2019 Plan is in the best interests of the Company and its shareholders to enable the Company to continue recruiting and retaining the services of highly-qualified non-employee service providers, including consultants, advisors and non-employee directors.

Regardless of whether the 2019 Plan is approved by shareholders, grants to non-employee directors may continue to be made under the Intrexon Corporation 2013 Omnibus Incentive Plan to the extent shares of common stock remain available for issuance under that plan. As of April 16, 2019, the fair market value of a share of our common stock was \$5.07, measured as the closing sale price on that date, as reported by the Nasdaq Global Select Market.

Summary of Material Terms of the 2019 Plan

The following summary of the material terms of the 2019 Plan is qualified in its entirety by reference to the full text of the 2019 Plan, a copy of which is attached as Annex A to this Proxy Statement and which is incorporated by reference into this proposal. Shareholders should refer to Annex A for a more complete description of the 2019 Plan.

Purpose; Eligibility. We established the 2019 Plan to attract, retain and motivate our non-employee service providers and to promote the success of our business by linking the personal interests of our consultants, advisors, non-employee directors and other non-employee service providers to those of our shareholders. The 2019 Plan permits the grant of stock options (“Options”), stock appreciation rights (“SARs”), restricted stock awards (“Restricted Stock Awards”), restricted stock units (“RSUs”), incentive awards (“Incentive Awards”), other stock-based awards (“Stock Based Awards”) and dividend equivalents (“Dividend Equivalents”). As of March 31, 2019, we had eight non-employee directors that would be eligible to participate in the 2019 Plan, and approximately 100 non-employee service providers that would be eligible to receive awards under the 2019 Plan.

Administration. The 2019 Plan is administered by our Compensation Committee, which has the authority to grant awards to such persons and upon such terms and conditions (not inconsistent with the provisions of the 2019 Plan) as it may consider appropriate. Our Compensation Committee may act through subcommittees or, with respect to awards granted to individuals who are not subject to the reporting and other provisions of Section 16 of the Exchange Act, who are not members of our Board or the board of directors of our Affiliates (as defined by the 2019 Plan), delegate to one or more officers all or part of its duties with respect to such awards. Our Compensation Committee may, at its discretion, accelerate the time at which any award may be exercised, become transferable or nonforfeitable or become earned and settled including without limitation (i) in the event of the participant’s death, disability, retirement or involuntary termination of service (including a voluntary termination of service for good reason) or (ii) in connection with a Change in Control (as defined in the 2019 Plan).

Authorized Shares. Under the 2019 Plan, we may issue a maximum aggregate of 5,000,000 shares of common stock, all of which may be issued pursuant to Options, SARs, Restricted Stock Awards, RSUs, Incentive

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Awards, Stock-Based Awards or Dividend Equivalents. Each share issued in connection with an award will reduce the number of shares available under the 2019 Plan by one, and each share covered under the exercised portion of a SAR will reduce the number of shares available under the 2019 Plan by one, even though the share is not actually issued upon settlement of the SAR. Shares relating to awards that are terminated by expiration, forfeiture, cancellation or otherwise without issuance of shares of common stock, settled in cash in lieu of shares, or exchanged prior to the issuance of shares for awards not involving shares, will again be available for issuance under the 2019 Plan. Shares not issued as a result of net settlement of an award, tendered or withheld to pay the exercise price, purchase price or withholding taxes of an award or shares purchased on the open market with the proceeds of the exercise price of an award will be deemed delivered under the 2019 Plan and will not again be available for issuance under the 2019 Plan.

Written Agreements. All awards granted under the 2019 Plan will be governed by separate written agreements between the participants and us. The written agreements will specify the terms of the particular awards.

Transferability. Generally, an award is non-transferable except by will or the laws of descent and distribution, and during the lifetime of the participant to whom the award is granted, the award may only be exercised by, or payable to, the participant. However, the Compensation Committee may provide that awards may be gifted by a participant to immediate family members or trust or other entities on behalf of the Participant and/or family members. Any such transfer will be permitted only if (i) the participant does not receive any consideration for the transfer and (ii) the Committee expressly approves the transfer. The holder of the transferred award will be bound by the same terms and conditions that governed the award during the period that it was held by the participant, except that such transferee may only transfer the award by will or the laws of descent and distribution.

Maximum Award Period. No award shall be exercisable or become vested or payable more than ten years after the date of grant.

Compliance with Applicable Law. No award shall be exercisable, vested or payable except in compliance with all applicable federal and state laws and regulations (including, without limitation, tax and securities laws), any listing agreement with any stock exchange to which we are a party, and the rules of all domestic stock exchanges on which our shares may be listed.

Payment. The exercise or purchase price of an award, and any taxes required to be withheld with respect to an award, may be paid in cash or, if the written agreement so provides, the Compensation Committee may allow a participant to pay all or part of the exercise or purchase price, and any required withholding taxes, by tendering shares of common stock the participant already owns, through a broker-assisted cashless exercise, by means of “net exercise” procedure whereby shares of common stock shall be withheld from delivery, or any other specified medium of payment or combination thereof.

Shareholder Rights. No participant shall have any rights as our shareholder as a result of issuance of an award until the award is settled by the issuance of common stock (other than a Restricted Stock Award or RSUs for which certain shareholder rights may be granted).

Forfeiture Provisions. Awards do not confer upon any individual any right to continue in our service or in the service of our affiliated entities. All rights to any award that a participant has will be immediately forfeited if the participant is discharged from service.

Types of Awards

Options. All Options granted under the 2019 Plan shall be non-qualified stock options. Our Compensation Committee determines the eligible individuals to whom grants of Options will be made, the number of shares

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subject to each option, the exercise price per share, the time or times at which the option may be exercised, whether any performance or other conditions must be satisfied before a participant may exercise an option, the method of payment by the participant, the method of delivery of shares to a participant and all other terms and conditions of the award. However, the exercise price of an Option may not be less than the fair market value of a share of common stock on the date the Option is granted. At the Compensation Committee's discretion, an Option may be granted with or without a Corresponding SAR (as defined below).

SARs. A SAR entitles the participant to receive, upon exercise, the excess of the fair market value on that date of each share of common stock subject to the exercised portion of the SAR over the fair market value of each such share on the date of the grant of the SAR. A SAR can be granted alone or in tandem with an Option. A SAR granted in tandem with an Option is called a Corresponding SAR and entitles the participant to exercise the Option or the SAR, at which time the other tandem award expires with respect to the number of shares being exercised. The Compensation Committee is authorized to determine the eligible individuals to whom grants of SARs will be made, the number of shares of common stock covered by the grant, the time or times at which a SAR may be exercised and all other terms and conditions of the SAR.

Restricted Stock Awards and RSUs. A Restricted Stock Award is the grant or sale of shares of common stock, which may be subject to forfeiture for a period of time or subject to certain conditions. An RSU entitles the participant to receive, upon vesting, shares of our common stock. We will deliver to the participant one share of common stock for each RSU that becomes earned and payable. With regard to Restricted Stock Awards, the Compensation Committee is authorized to determine the eligible individuals to whom grants will be made, the number of shares subject to such grants, the purchase price, if any, to be paid for each share subject to the award of restricted stock, the time or times at which the restrictions will terminate, and all other terms and conditions of the restricted stock. With regards to RSUs, the Compensation Committee is authorized to determine the eligible individuals to whom grants will be made, the number of shares subject to such grants and the vesting conditions entitling a participant to settlement of the RSUs.

Incentive Awards. An Incentive Award entitles the participant to receive cash or common stock when certain conditions are met. The Compensation Committee has the authority to determine the eligible individuals to whom grants will be made and all other terms and conditions of the Incentive Award.

Stock-Based Awards. Stock-Based Awards may be denominated or payable in, valued by reference to or otherwise based on shares of common stock, including awards convertible or exchangeable into shares of common stock (or the cash value thereof) and common stock purchase rights and awards valued by reference to the fair market value of the common stock. The Compensation Committee has the authority to determine the eligible individuals to whom grants will be made and all other terms and conditions of Stock-Based Awards. However, the purchase price for the common stock under any Stock-Based Award in the nature of a purchase right may not be less than the fair market value of a share of common stock as of the date the award is granted. Cash awards, as an element of or supplement to any other award under the 2019 Plan, may also be granted.

Our Compensation Committee is also authorized under the 2019 Plan to grant shares of common stock or other awards in lieu of any of our obligations or of our affiliates to pay cash or to deliver other property under the 2019 Plan or under any other of our plans or compensatory arrangements or any of our affiliates.

Dividend Equivalents. Our Compensation Committee may also grant Dividend Equivalents under the 2019 Plan. A Dividend Equivalent is an award that entitles the participant to receive cash, shares of common stock, other awards or other property equal in value to all or a specified portion of dividends paid with respect to shares of our common stock. The Compensation Committee is authorized to determine the eligible individuals to whom grants will be made and all other terms and conditions of the Dividend Equivalents. However, no Dividend Equivalents may be awarded in connection with an Option, SAR or Stock-Based Award in the nature of purchase rights.

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Eligibility. Any of our non-employee service providers or service providers of our Affiliates (as defined in the 2019 Plan), non-employee members of our Board or of any board of directors of our Affiliates and any entity that is a wholly-owned alter ego of such member of the Board or board of directors of an Affiliate or other person or entity that provides services is eligible to receive an award under the 2019 Plan.

Performance Criteria. Our Compensation Committee has the discretion to establish performance conditions for when performance-based awards will become vested, exercisable and payable.

Our Compensation Committee has the discretion to select one or more periods of time over which the attainment of one or more of the performance conditions will be measured for the purpose of determining when an award will become vested, exercisable or payable. The Compensation Committee has the authority to adjust goals and awards in the manner set forth in the 2019 Plan.

Change in Control. In the event of a “Change in Control” (as defined in the 2019 Plan) and, with respect to awards that are subject to Section 409A of the Internal Revenue Code of 1986, as amended, or the Code, and such awards, 409A Awards, only to the extent permitted by Section 409A of the Code, our Compensation Committee in its discretion may, on a participant-by-participant basis (i) accelerate the vesting of all unvested and unexercised Options, SARs or Stock-Based Awards in the nature of purchase rights and/or terminate such awards, without any payment therefore, immediately prior to the date of any such transaction after giving the participant at least seven days written notice of such actions; (ii) fully vest and/or accelerate settlement of any awards; (iii) terminate any outstanding Options, SARs or Stock-Based Awards in the nature of purchase rights after giving the participant notice and a chance to exercise such awards (to the extent then exercisable or exercisable upon the change in control); (iv) cancel any portion of an outstanding award that remains unexercised or is subject to restriction or forfeiture in exchange for a cash payment to the participant of the value of the award; or (v) require that the award be assumed by the successor corporation or replaced with interests of an equal value in the successor corporation.

Amendment and Termination. The 2019 Plan expires 10 years after its original effective date, unless terminated earlier by our Board. Any award that is outstanding as of the date the 2019 Plan expires will continue in force according to the terms set out in the award agreement. Our Board may terminate, amend or modify the 2019 Plan at any time. However, shareholder approval may be required for certain types of amendments under applicable law or regulatory authority. Except as may be provided in an award agreement or the 2019 Plan, no amendment to the 2019 Plan may adversely affect the terms and conditions of any existing award in any material way without the participant’s consent.

An amendment will be contingent on approval of our shareholders, to the extent required by law, by the rules of any stock exchange on which our securities are then traded or if the amendment would (i) increase the benefits accruing to participants under the 2019 Plan, including without limitation, any amendment to the 2019 Plan or any agreement to permit a re-pricing or decrease in the exercise price of any outstanding awards, (ii) increase the aggregate number of shares of common stock that may be issued under the 2019 Plan, or (iii) modify the eligibility requirements for participation in the 2019 Plan.

Material U.S. Federal Income Tax Consequences of Awards under the 2019 Plan

The following discussion summarizes the principal federal income tax consequences associated with awards under the 2019 Plan. The discussion is based on laws, regulations, rulings and court decisions currently in effect, all of which are subject to change.

Options. A participant will not recognize any taxable income on the grant of an Option. On the exercise of an Option, the participant will recognize as ordinary income the excess of the fair market value of the common stock acquired over the exercise price. A participant’s tax basis in the common stock then is the amount paid for the shares of common stock plus any amounts included in income on exercise of the Options. Special rules apply

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if a participant pays the exercise price by delivery of common stock. The exercise of an Option generally will entitle us to claim a federal income tax deduction equal to the amount of ordinary income the participant recognizes on exercise of the Option.

SARs. A participant will not recognize any taxable income at the time SARs are granted. The participant at the time of receipt will recognize as ordinary income the amount of cash and the fair market value of the common stock that he or she receives on exercise of the SAR. We generally will be entitled to a federal income tax deduction equal to the amount of ordinary income the participant recognizes on exercise of the SAR.

Restricted Stock Awards and RSUs. With regard to Restricted Stock Awards, a participant will recognize ordinary income on account of a Restricted Stock Award on the first day that the shares are either transferable or no longer subject to a substantial risk of forfeiture. The ordinary income recognized will equal the excess of the fair market value of the common stock on such date over the price, if any, paid for the stock. However, even if the shares under a Restricted Stock Award are both nontransferable and subject to a substantial risk of forfeiture, the participant may make a special "83(b) election" to recognize income, and have his or her tax consequences determined, as of the date of grant of the Restricted Stock Award. The participant's tax basis in the shares received under the Restricted Stock Award will equal the income recognized plus the price, if any, paid for the Restricted Stock Award. We generally will be entitled to a federal income tax deduction equal to the ordinary income the participant recognizes with respect to the Restricted Stock Award. With regard to RSUs, a participant will not recognize any taxable income at the time RSUs are granted. When the terms and conditions to which the RSUs are subject have been satisfied and the RSUs are paid, the participant will recognize as ordinary income the fair market value of the common stock he or she receives on settlement of the RSUs. We generally will be entitled to a federal income tax deduction equal to the amount of ordinary income the participant recognizes on settlement of the RSUs.

Incentive Awards. A participant will not recognize any taxable income at the time an Incentive Award is granted. When the terms and conditions to which an Incentive Award is subject have been satisfied and the award is paid, the participant will recognize as ordinary income the amount of cash and the fair market value of the common stock he or she receives on settlement of the Incentive Award. We generally will be entitled to a federal income tax deduction equal to the amount of ordinary income the participant recognizes on settlement of the Incentive Award.

Stock-Based Awards. A participant will recognize ordinary income on receipt of cash or shares of common stock paid with respect to a Stock-Based Award. We generally will be entitled to a federal income tax deduction equal to the amount of ordinary income the participant recognizes.

Dividend Equivalents. A participant will recognize as ordinary income the amount of cash and the fair market value of any common stock he or she receives on payment of the Dividend Equivalents. To the extent the Dividend Equivalents are paid in the form of other awards, the participant will recognize income as otherwise described herein. We generally will be entitled to a federal income tax deduction equal to the amount of ordinary income the participant recognizes.

Other Tax Rules. The 2019 Plan is designed to enable our Compensation Committee to structure awards that will not be subject to Section 409A of the Code, which imposes certain restrictions and requirements on nonqualified deferred compensation. However, our Compensation Committee may grant awards that are subject to Section 409A of the Code. In that case, the terms of such 409A Award will be (a) subject to the deferral election requirements of Section 409A of the Code; and (b) may only be paid upon a separation from service, a set time, death, disability, a change in control or an unforeseeable emergency, each within the meaning of Section 409A of the Code. Our Compensation Committee shall not have the authority to accelerate or defer a 409A Award other than as permitted by Section 409A of the Code. Moreover, any payment on a separation from service of a "Specified Employee" (as defined in the 2019 Plan) will not be made until six months following the participant's separation from service (or upon the participant's death, if earlier) to the extent required to avoid a violation of Section 409A of the Code.

Third Security

On October 30, 2015, the independent members of the Board approved a Services Agreement (the “Services Agreement”), effective as of November 1, 2015, between us and Third Security, LLC (“Third Security”). Pursuant to the terms of the Services Agreement, as amended, Third Security provides us with services necessary or appropriate to support us and Mr. Kirk in his role as Chief Executive Officer. In exchange for the services, we pay Third Security a fee of \$800,000 per month, which payment is made in fully-vested shares of our common stock.

Mr. Randal J. Kirk, our Chairman of the Board and Chief Executive Officer, currently serves as the Senior Managing Director and Chief Executive Officer of Third Security and owns 100 percent of the equity interests in Third Security. Third Security is the manager to certain funds that own shares of our common stock, and, therefore may be deemed to have beneficial ownership in us of approximately 32.1 percent.

If this Proposal 5 is approved by our shareholders, then payments made by us under the Services Agreement will be made under the 2019 Plan and will be subject to the terms of the 2019 Plan.

New Plan Benefits

The future benefits that will be awarded or paid under the 2019 Plan to non-employee directors are not currently determinable, as they are within the discretion of the Compensation Committee, and the amounts that would have been received by the non-employee directors during 2018 if the 2019 Plan had been in effect are not determinable, as grants may have also been made under the 2013 Plan. No awards may be made under the 2019 Plan to employees.

Vote Required and Board Recommendation

The affirmative vote of a majority of the votes cast on the matter is required for the approval of this item. As this proposal is not considered a “routine item,” your bank, broker or other nominee cannot vote your shares without receiving your voting instructions. Abstentions and broker non-votes will have no effect on the vote.

THE BOARD UNANIMOUSLY RECOMMENDS THAT THE SHAREHOLDERS VOTE “FOR” THE APPROVAL OF THE INTREXON CORPORATION 2019 INCENTIVE PLAN FOR NON-EMPLOYEE SERVICE PROVIDERS.

PROPOSAL 6
APPROVAL OF AN AMENDMENT TO THE AMENDED AND RESTATED ARTICLES OF INCORPORATION

ITEM 6 ON PROXY CARD

General

Our Board of Directors has unanimously approved, and recommended that our shareholders approve, an amendment to our Amended and Restated Articles of Incorporation, in substantially the form attached hereto as Annex B (the “Articles of Amendment”) (in the event it is deemed by the Board to be advisable), to increase the number of authorized shares of common stock from 200,000,000 to 400,000,000. If the shareholders approve the authorized share amendment, the authorized share increase will become effective upon the filing of the Articles of Amendment with the State Corporation Commission of the Commonwealth of Virginia.

As of March 31, 2019, there were 160,615,416 shares of our common stock outstanding. As of that date, we also have reserved 16,555,154 shares of our common stock for issuance under our equity compensation plans, 133,264 shares issuable upon the exercise of outstanding warrants, and 14,958,860 shares potentially issuable upon conversion of our 3.50% convertible senior notes due 2023. In addition, we have reserved shares for issuance pursuant to a convertible note issued in December 2018 (the “2018 Convertible Note”). The conversion rate for the 2018 Convertible Note varies based on the trading price of our common stock. Had it been converted on March 31, 2019, the 2018 Convertible Note would have converted into 4,666,269 shares of our common stock. Accordingly, taking into account the shares reserved for future issuance and using the conversion rate applicable to our 2018 Convertible Note assuming conversion on March 31, 2019, we had 3,071,037 shares of our common stock available as of March 31, 2019 for all other corporate purposes, including additional capital raising activities, prior to the addition of the shares for which we are seeking approval pursuant to this proposal.

Although at present there are no specific plans, arrangements or understandings to issue any of the newly authorized shares, the Board believes an increase in the number of authorized shares of common stock is necessary because the availability of additional authorized but unissued shares will provide us with greater flexibility in considering actions that may be desirable or necessary to accomplish our business objectives and that involve the issuance of our common stock. An increase in the number of authorized shares would allow us to issue common stock for a variety of corporate purposes, such as raising additional capital, without the delay associated with soliciting shareholder approval and convening a special meeting of shareholders. Capital that we raise through the issuance of additional shares could be used to continue or expand our current clinical development programs, or to expand or diversify our business or research and development programs through the acquisition of other businesses or products.

If the shareholders do not approve the proposed amendment, we will be limited by the lack of unissued and unreserved authorized shares of common stock in our ability to use shares of common stock for equity financings or collaborations, and our shareholder value may be harmed by this limitation. The inability to use equity financings in order to raise capital could lead to delays to or the suspension of our clinical programs as a result of the lack of funding. The inability to raise capital could also have a negative impact on potential collaborations, partnerships, and other business opportunities integral to our growth and success by creating a perception that we do not have reasonable access to capital and because some collaborators and partners will be interested in acquiring some of our equity as part of collaborations, partnerships or other ventures. Similarly, we may have difficulty attracting, retaining and motivating skilled and experienced employees, officers and directors if they also perceive that we do not have access to capital, and ability to use authorized capital, for general corporate purposes. In short, if our shareholders do not approve this proposal, we may not be able to access the capital markets, complete corporate collaborations, partnerships or other strategic transactions, attract, retain and motivate employees, and pursue other business opportunities integral to our growth and success. Without access to additional authorized shares for these fundamental activities, our Board may be forced to seek strategic

alternatives with third parties who will have enhanced leverage because they will be aware that the Company's options are limited.

If the shareholders approve the proposed amendment, our Board may cause the issuance of the additional shares of common stock without further approval, except as may be required by law, regulatory authorities, or the rules of Nasdaq or any other stock exchange on which our shares may be listed. The proposed new authorized shares of common stock would become part of the existing class of common stock and, if and when issued, would have the same rights and privileges as the shares of common stock presently issued and outstanding. Our shareholders do not have any preemptive right to purchase or subscribe for any part of any new or additional issuance of our securities. The increase in the authorized shares of common stock will not itself cause any changes in our capital accounts or have any immediate effect on the rights of existing shareholders. However, to the extent that additional authorized shares of common stock are issued in the future, the issuance could have the effect of diluting existing shareholder earnings per share, book value per share and voting power.

Vote Required and Board Recommendation

The affirmative vote of a majority of the shares issued and outstanding is required for the approval of this item. As this proposal is not considered a "routine item," your bank, broker or other nominee cannot vote your shares without receiving your voting instructions. Abstentions and broker non-votes will have the effect of a vote against the proposal.

THE BOARD UNANIMOUSLY RECOMMENDS THAT THE SHAREHOLDERS VOTE "FOR" THE APPROVAL OF THE AMENDMENT TO THE AMENDED AND RESTATED ARTICLES OF INCORPORATION.

**PROPOSAL 7
ADJOURNMENT OF THE ANNUAL MEETING**

ITEM 7 ON PROXY CARD

General

Our shareholders are being asked to consider and vote upon an adjournment of the Annual Meeting, if necessary, if a quorum is present, to solicit additional proxies if there are insufficient votes in favor of approval of a proposed amendment to our Amended and Restated Articles of Incorporation to increase the authorized shares of common stock as described in Proposal 6.

Vote Required and Board Recommendation

The affirmative vote of a majority of the votes cast on the matter is required for the approval of this item. As this proposal is not considered a “routine item,” your bank, broker or other nominee cannot vote your shares without receiving your voting instructions. Abstentions and broker non-votes will have no effect on the vote.

THE BOARD UNANIMOUSLY RECOMMENDS THAT THE SHAREHOLDERS VOTE “FOR” THE ADJOURNMENT OF THE ANNUAL MEETING, IF A QUORUM IS PRESENT, TO SOLICIT ADDITIONAL PROXIES IF THERE ARE INSUFFICIENT VOTES TO APPROVE PROPOSAL 6.

IDENTIFICATION OF EXECUTIVE OFFICERS

Set forth below is information regarding the position, age and business experience of each of our executive officers.

Randal Kirk, age 65, Chief Executive Officer and Chairman of the Board. For more information about Mr. Kirk, please see his biography under the caption “NOMINEES FOR ELECTION AS DIRECTORS” on page 19.

Rick Sterling, age 55, Chief Financial Officer. Mr. Sterling has served as our Chief Financial Officer since 2007. Prior to joining us, he was with KPMG where he worked in the audit practice for over 17 years, with a client base primarily in the healthcare, technology and manufacturing industries. Mr. Sterling is currently a member of the board of directors of AquaBounty Technologies Inc., a public biotechnology company (Nasdaq: AQB) and a majority-owned subsidiary of Intrexon. Mr. Sterling’s experience includes serving clients in both the private and public sector, including significant experience with SEC filings and Sarbanes-Oxley compliance. He received a B.S. in Accounting and Finance from Virginia Tech and is a licensed Certified Public Accountant.

Lt. Gen (Ret.) Thomas Bostick Ph.D., P.E., N.A.E., age 62, Chief Operating Officer. Dr. Bostick has served as our Chief Operating Officer since November 2017. Prior to this, Dr. Bostick served as our Senior Vice President, Environment Sector from September 2016 to November 2017. Dr. Bostick brings to Intrexon extensive experience in environmental sustainability, significant leadership skills and an established track record in engineering solutions for the nation’s toughest challenges. After 38 years of distinguished service to the U.S. Army, he retired in 2016 as the 53rd U.S. Army Chief of Engineers and the Commanding General of the U.S. Army Corps of Engineers (USACE). In this position, he served as the senior military officer overseeing and supervising most of the nation’s civil works infrastructure and military construction, hundreds of environmental protection projects, as well as managing 34,000 civilian employees and military personnel in over 110 countries around the world. Before his command of USACE, Lt. Gen. Bostick served in a variety of command and staff assignments with the U.S. Army both in the U.S. and abroad including the Deputy Chief of Staff, G-1, Personnel, U.S. Army, Commanding General, U.S. Army Recruiting Command, Assistant Division Commander, 1st Cavalry Division, Executive Officer to the Chief of Engineers, Executive Officer to the Army Chief of Staff, and Deputy Director of Operations for the National Military Command Center, J-3, the Joint Staff in the Pentagon. Additionally, he was a special assistant to the Secretary of Veterans Affairs during his time as a White House Fellow. Dr. Bostick graduated with a Bachelor’s of Science degree from the U.S. Military Academy at West Point and later returned to the Academy to serve as an Assistant Professor of Mechanical Engineering. He holds Master’s degrees in Civil Engineering and Mechanical Engineering from Stanford University and a Doctorate in Systems Engineering from George Washington University.

Donald Lehr, age 44, Chief Legal Officer. Mr. Lehr has served as our Chief Legal Officer since 2011. From 2009 to 2011 he served as our Associate General Counsel. Mr. Lehr has broad experience in the areas of corporate, securities, and general business law. Prior to joining us, he practiced law with the law firm of Hogan Lovells LLP (formerly Hogan & Hartson, LLP) in Baltimore, Maryland from 2002 to 2009. While at Hogan Lovells, his practice included the representation of privately and publicly held corporations across many industries, including biotechnology, pharmaceuticals, health care, software, technology, and manufacturing. Prior to his time at Hogan Lovells, Mr. Lehr served as a judicial clerk for the Honorable Irma S. Raker of the Court of Appeals of Maryland. Mr. Lehr received a B.A. from Swarthmore College and received a J.D. from the University of Maryland School of Law.

Jeffrey Perez, age 47, Senior Vice President, Intellectual Property Affairs. Mr. Perez has served as our Senior Vice President, Intellectual Property Affairs since August 2014. Before joining Intrexon, Mr. Perez was Managing Director and Associate General Counsel and Intellectual Property at Third Security, LLC, where he evaluated potential investments of Third Security’s managed investment funds. Additionally, Mr. Perez worked with Third Security portfolio companies in evaluating and developing their intellectual property strategies and

general corporate activities. Prior to joining Third Security, Mr. Perez practiced intellectual property law with the law firm of Hunton & Williams LLP in Washington D.C. Mr. Perez's previous work involved client consultation, litigation, agreement work, opinion drafting and patent procurement. Mr. Perez received a B.S. from Cornell University and his J.D. from George Mason University School of Law.

Thomas Reed, Ph.D., age 53, Founder and Chief Science Officer. Dr. Reed co-founded Intrexon in 1998 and has served as our Chief Science Officer since 2001. Dr. Reed is a molecular geneticist with over 30 years of experience spanning many aspects of molecular and cellular biology. Dr. Reed envisioned and built Intrexon's proprietary UltraVector platform that enables design and assembly of gene programs which facilitate control over the quality, function, and performance of living cells. He has developed sophisticated transgenic model systems for studying the role of gene products in neuronal, cardiovascular, and cancer systems. Dr. Reed is actively involved in seeking out and assessing new biotechnologies and innovative companies that complement the portfolio of Intrexon products. Dr. Reed has published numerous peer-reviewed articles in the fields of subcellular modulation, gene regulation and cardiac function and is an inventor on numerous patents. Dr. Reed earned his B.S. in Genetics from the University of California-Davis, his M.S. in Biological Science from Wright State University, and his Ph.D. in Molecular and Developmental Biology from the University of Cincinnati College of Medicine.

Helen Sabzevari, age 57, President, Precigen, Inc. Dr. Sabzevari has served as President of Precigen, Inc., a wholly owned subsidiary of the Company, since November 2017. Prior to this, Dr. Sabzevari served as our Senior Vice President, Intrexon Health Therapeutics as well as Head of Research and Development of Precigen Inc. from July 2017 to November 2017. Dr. Sabzevari brings extensive expertise in research and development of immunotherapy-based therapeutics as well as experience translating novel treatments from pre-clinical stage into the clinic. Prior to Intrexon, from 2015 to 2017, Dr. Sabzevari co-founded and served as Chief Scientific Officer of Compass Therapeutics LLC, a fully-integrated drug discovery and development company focused on manipulating the immune system to treat human disease. From 2008 to 2014, Dr. Sabzevari served as Senior Vice President of Immuno-Oncology as well as Global Head of Immunotherapy, Oncology, Global Research and Early Development at EMD Serono (a subsidiary of Merck KGaA, Darmstadt, Germany). During her tenure, she led the immuno-oncology discovery and early development translational innovation platform and brought forward numerous pre-clinical and clinical assets including avelumab, an approved programmed death ligand-1 (PD-L1) checkpoint inhibitor. From 1998 to 2008, Dr. Sabzevari led the Molecular Immunology Group at the Laboratory of Tumor Immunology and Biology at the US National Cancer Institute (LTIB-NCI), where she was focused on design, development and delivery of novel vaccines and immunotherapies for a range of human cancers. Dr. Sabzevari's contributions in the field of tumor immunology earned her the National Institutes of Health (NIH) merit award for major contribution to the field of cancer immunotherapy, and she also received the Mass High Tech's Women to Watch Award and the PharmaVOICE 100 Award. Dr. Sabzevari received her doctorate degree in cell and molecular immunology and completed her postdoctoral work at the department of immunology at the Scripps Research Institute working on various immunotherapeutic modalities in the treatment of cancer and autoimmune diseases.

Robert Walsh, III, age 60, Senior Vice President, Energy & Fine Chemicals Platforms. Mr. Walsh has served as our Senior Vice President, Energy and Fine Chemicals Platforms since November 2017. Prior to this, since May 2013, Mr. Walsh served as our Senior Vice President, Energy Sector. Mr. Walsh has over 30 years of experience in the petroleum and chemical industries. From 2011 to 2013, Mr. Walsh served as Chief Commercial Officer of ZeaChem Inc., a cellulosic biofuel and biochemical company. Prior to his time at ZeaChem, Mr. Walsh held several leadership positions, including Chief Executive Officer of Aurora Algae, Inc., an algae production company, President of LS9, Inc., an industrial biotechnology company, Senior Vice President and Chief Operating Officer of Chemoil Corporation, and General Manager Supply, Europe for Shell Europe Oil Products. Mr. Walsh received a B.S. in Chemical Engineering from Purdue University.

COMPENSATION DISCUSSION AND ANALYSIS

The Compensation Committee oversees our executive compensation programs, which include our named executive officers. In this role, the Compensation Committee reviews and approves all compensation decisions relating to our named executive officers. To assist with its duties, the Compensation Committee has engaged F. Daniel Siciliano as its outside compensation consultant to provide competitive compensation data and assist with the analysis and implementation of various aspects of our executive compensation decisions. Mr. Siciliano coordinates the procurement of data through third party data providers and synthesizes that data and related information in order to provide advice that our Compensation Committee considers in making its executive compensation decisions.

This section discusses the principles underlying our executive compensation programs, policies and decisions and explains the process the Compensation Committee uses to determine compensation and benefits for our named executive officers. It provides qualitative information regarding the manner and context in which compensation is earned by and awarded to our named executive officers and is intended to place in perspective the data presented in the tables and narrative that follow.

The discussion and analysis of our compensation program for our named executive officers should be read in conjunction with the tables and text elsewhere in this Proxy Statement that describe the compensation awarded to, earned by or paid to our named executive officers.

The individuals who served as our Chief Executive Officer and Chief Financial Officer during fiscal 2018, as well as the other individuals included in the Summary Compensation Table, are referred to throughout this Proxy Statement as the “named executive officers” and, to the extent they remain employed by us, together with the other executives of management as the “executive officers.”

Our named executive officers for fiscal year 2018 are:

| Name | Position |
|-----------------|---|
| Randal Kirk | Chief Executive Officer and Chairman of the Board |
| Rick Sterling | Chief Financial Officer |
| Donald Lehr | Chief Legal Officer |
| Nir Nimrodi | Former Chief Business Officer |
| Helen Sabzevari | President, Precigen, Inc. |

Executive Summary

Our goal with respect to executive compensation is to provide a comprehensive package that is sufficient to attract, motivate and retain executives of outstanding ability, performance and potential. The Compensation Committee seeks to establish and maintain an appropriate relationship between executive compensation and the creation of shareholder value. The Committee believes that the most effective compensation program is one that provides competitive base pay, rewards the achievement of established annual and long-term goals and objectives, and provides incentives for retention.

The Compensation Committee assists the Board in fulfilling its oversight responsibilities with respect to the compensation of our executive officers. The Compensation Committee is responsible for:

- establishing and administering the base salaries and annual cash incentive awards of our executive officers, and
- administering and making recommendations and awards under our 2013 Plan.

The Compensation Committee monitors the compensation paid to our executive officers to ensure it is fair, reasonable and competitive and is substantially tied to our performance. The Compensation Committee

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evaluates, both subjectively and objectively, our financial performance, competitive position, future potential, and the individual and group performance of the members of executive management. In such evaluation, the Compensation Committee reviews data prepared by management and employs the business experience of the individual members of the Compensation Committee. The Compensation Committee also utilizes, from time to time, the assistance of Mr. Siciliano as its outside compensation consultant.

Key Compensation Corporate Governance Practices

The Compensation Committee and the Board regularly review the evolving practices in executive compensation and corporate governance. We have adopted certain policies and practices that we believe are consistent with industry best practices, as tailored to our unique business model and strategic direction. We have also strived to adopt policies that will foster the Company's growth and the continual realization of value to our shareholders by encouraging appropriate risk taking and entrepreneurship in support of our unique and dynamic business model. The Compensation Committee and the Board also actively scrutinize the anticipated effect of compensation practices on the ultimate goals of the Company.

What We Do:

- ✓ We use what we believe to be an appropriate mix of short-term and long-term compensation.
- ✓ We conduct an annual review and assessment of potential and existing risks arising from our compensation programs and policies.
- ✓ We engage an outside compensation consultant to advise on executive compensation matters.

What We Do Not Do:

- × We do not allow hedging of Company stock.
- × We do not provide excessive perquisites or offer executive officers a tax gross-up on any perquisites, except for *de minimis* amounts related to short-term disability insurance premiums.
- × We do not allow repricing of stock options without shareholder approval.

Our Compensation Philosophy

Our compensation philosophy is guided by the principle of pay-for-performance. Our compensation programs are designed to support our business goals by rewarding achievement of short-term and progress towards long-term objectives in a manner that links compensation of our executive officers with the value created for our shareholders. While aligning our executive officers' compensation with our short-term and long-term business goals, we aim to provide the incentives needed to attract, motivate, reward and retain our management talent, which is crucial to our long-term success. As our largest shareholder and owner of a substantial percentage of our outstanding shares of common stock, we believe our Chief Executive Officer's interests are closely aligned with those of our shareholders and he is extremely focused on enabling our executive officers to drive increased shareholder value. The members of our Compensation Committee share this focus.

Principles of Our Compensation Framework

Our executive compensation program is designed to attract, retain, motivate and reward talented individuals who will execute our business plan so that we can succeed in the competitive and highly volatile business environment in which we operate. The Compensation Committee believes that the compensation program for our executive officers should reward the achievement of our short-term and long-term objectives and that compensation should be related to the value created for our shareholders. Furthermore, the compensation

program should reflect competition and best practices in the marketplace. The following objectives serve as the Compensation Committee’s guiding principles for all compensation decisions:

- Our executive compensation and benefits should attract, motivate, reward and retain the management talent necessary to achieve our business objectives at compensation levels that are fair, equitable and competitive with those of comparable companies.
- Compensation should be set based on the leadership of each executive officer, which reflects skill sets, experience and achievement, to create a competitive framework for talent acquisition and retention.
- Compensation should be linked to individual and corporate performance by aligning our executive compensation program to company-wide performance, which is assessed in terms of financial and non-financial performance and creation of long-term value for our shareholders.
- There should be an appropriate mix and weighting among base salary, annual incentive awards and long-term equity incentive awards such that an adequate amount of each executive officer’s total compensation is performance-based or “at risk.” Further, as an executive’s responsibilities increase, the portion of “at-risk” compensation for the executive should also increase as a percentage of total compensation.

In addition, the Compensation Committee believes that the various elements of our compensation program effectively align compensation with performance measures that are directly related to our financial goals and creation of shareholder value without encouraging executives to take unnecessary and excessive risks.

Developments in Executive Compensation for Fiscal Year 2018

The Compensation Committee attempts to set reasonable but rigorous goals and objectives for each of our executive officers. We review our executive compensation practices annually to ensure that our plans and practices are supportive of our goals, remain competitive and are in keeping with the best interests of our shareholders and our unique business model and operating environment. In January 2018, after a review of trending practices among similarly situated companies and further deliberation about our competitiveness in recruitment and retention, the Compensation Committee updated our equity grant strategy to adopt the use of RSUs as part of the mix of equity grants made to our executive officers. In December 2018, the Compensation Committee reviewed public and non-public compensation data for similarly situated companies, which had been assembled by Mr. Siciliano with the assistance of a third party data provider. The Compensation Committee, with the assistance of Mr. Siciliano, used this information as a reference point in considering whether our executive compensation program remains appropriate and competitive, but did not target a specific percentile for comparing compensation or place specific weights on the sources of pay information.

Elements of Our Compensation Program

The Compensation Committee has a mix of compensation components that it utilizes, with the intent to make each component of total direct compensation competitive while also linking compensation to individual and corporate performance and encouraging stock ownership by our executive officers. The table below describes each compensatory element in our program and briefly explains how it promotes our objectives. We believe the combination of these elements provides an appropriate balance of rewards, incentives and benefits to our executives and enables us to meet our desired compensation objectives, strengthen our ability to attract and retain highly qualified individuals and to appropriately link pay to performance.

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| <u>Element of Compensation</u> | <u>Description</u> | <u>How this Element Promotes Our Objectives</u> |
|--|--|---|
| <i>Annual Compensation</i> Base Salary | Fixed annual compensation that is certain in payment and provides continuous income. | Aids in both recruitment and retention; designed to be competitive in the marketplace. |
| Annual Incentive Awards | Performance-based compensation for achieving established goals and objectives. | Motivates and rewards achievement of annual corporate objectives by providing at-risk comprehensive pay opportunities linked to performance. |
| <i>Long-term Compensation</i> Equity Incentive Awards | Grants of options and/or restricted stock units (“RSUs”) that are part of our long-term incentive program; time-based vesting, generally over four years. | Promotes retention, increases long-term equity ownership and aligns executive and long-term shareholder interests by linking a portion of their compensation to changes in company stock price. RSUs additionally provide officers with awards that have immediate value. |
| <i>Other Compensation</i> Post-Termination Payments and Benefits | Payments and benefits upon termination of an executive’s employment in specified circumstances, such as retirement, death, disability or a change in control, as described in greater detail beginning on page 74. | Provides assurance of financial security, which is desirable in lateral recruiting and executive retention and permits objective evaluation by executives of potential changes to our strategy and structure. |
| Other Benefits | Executives participate in employee benefit plans generally available to our employees. | Fair and competitive programs to provide for the health and well-being of executives and their families. |

We do not provide our executives with any meaningful perquisites that are not provided to employees generally. We also do not have any deferred compensation programs or retirement programs other than our 401(k) Plan that is generally available to all employees. We enroll all eligible employees, other than our Chief Executive Officer, in the same health, dental and life and disability insurance programs.

Base Salary

General. Base salary levels for our executive officers, with the exception of our Chief Executive Officer, are recommended to the Compensation Committee by our Chief Executive Officer and are subject to approval by the Compensation Committee and the Board. In setting the base salary level for each executive officer (other than our Chief Executive Officer), the Compensation Committee generally considers the executive officer’s experience level, demonstrated capabilities, time and placement in position, our geographic region, individual performance and potential future contributions to our company. In addition, the Compensation Committee may consider executive compensation data for the industry as a whole, including data from similarly situated companies. Base salaries are reviewed annually by the Compensation Committee. When making decisions to adjust executive salaries, the Compensation Committee will also consider our overall financial performance in addition to the factors identified above. No particular weight is assigned to any one factor.

Compensatory Arrangements for the Chief Executive Officer. The base salary for our Chief Executive Officer, Mr. Kirk, is defined pursuant to the terms of a Restricted Stock Unit Agreement (the “RSU Agreement”). On October 30, 2015, the Compensation Committee and the independent members of our Board approved the RSU Agreement as a compensation arrangement for Mr. Kirk. Previously, Mr. Kirk did not receive compensation for his services as the Chief Executive Officer of the Company other than through his participation in the Company’s Annual Incentive Plan, as defined below, which became effective January 1, 2015. Under the arrangement, Mr. Kirk receives as compensation a payment of \$200,000 per month, which payment is made in fully-vested shares of our common stock that are subject to a three-year lockup on resale from the date of issuance. Beginning in April 2019, the number of RSUs underlying each award is based on the volume weighted average price of the common stock over the 30 day period ending on the last day of the month, as opposed to previously being based on the closing price on the last calendar day of the month. The RSU Agreement, and Mr. Kirk’s employment, is terminable at will by the decision of the independent members of the Board.

The RSU Agreement became effective in November 2015 and had an initial term of 12 months. The independent members of our Board, with the recommendation of the Compensation Committee, have subsequently approved extensions of the RSU Agreement, with the current term lasting through March 31, 2020. All such extensions have been on substantially similar terms as the original RSU Agreement, with the exception of the stock calculation as noted above.

Mr. Kirk is also entitled to participate in executive incentive compensation plans adopted by our Board or the Compensation Committee from time to time, including the Annual Incentive Plan described below.

2018 Base Salary Adjustments. In March 2018, the Compensation Committee, in consultation with our outside compensation consultant, reviewed the 2017 base salaries of each of our named executive officers. In addition to the factors described above, the Compensation Committee considered its ongoing review of market data and trends in executive compensation, as well as the performance of the Company as a whole, and determined, in light of that review, to not make any significant changes to base salary for our named executive officers. Subsequently, in September 2018, the Compensation Committee reviewed Mr. Sterling’s contributions to the Company and, based on several factors including retention, determined to increase Mr. Sterling’s base salary from \$450,000 to \$515,000.

Annual Incentive Awards

In June 2015, our shareholders approved the Intrexon Corporation Annual Executive Incentive Plan, or Annual Incentive Plan, promulgated under the 2013 Plan, under which our executives may receive awards for achievement of Company and individual performance goals and objectives using metrics as determined by the Compensation Committee. The plan became effective January 1, 2015.

General. The Annual Incentive Plan is administered by the Compensation Committee, which has sole authority to formulate adjustments and make interpretations under the Annual Incentive Plan as it deems appropriate. Eligibility is determined by the Compensation Committee each calendar year within a select group of management or key employees of the Company or any of its subsidiaries. For each incentive period, the Compensation Committee establishes the terms of the bonus awards under the Annual Incentive Plan, including the eligible employees, the corporate performance objectives by which the aggregate incentive pool will be determined and the individual performance levels that must be achieved for payment of each incentive award to an individual participant. The Compensation Committee is also empowered to determine whether any awards will be paid in cash, equity securities, or a combination thereof. We maintain a strong link between performance and pay through emphasis on incentives and use of financial, operational and leadership measures, which we believe are key drivers of long-term value creation for shareholders. These criteria are used together with

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non-financial metrics that the Compensation Committee believes are leading indicators of the creation of long-term shareholder value. While these criteria serve as guidelines, the Compensation Committee has great discretion to determine the annual cash incentive awards to each participant, as discussed below.

Committee Discretion. Under the Annual Incentive Plan, the Compensation Committee retains the authority to award compensation absent attainment of a relevant performance goal, provide for cash incentive awards in excess of the target base percentages, reduce or eliminate awards entirely, or provide for partial payment if performance goals are only partially met, in each case if the Compensation Committee determines appropriate in its discretion. The Compensation Committee may determine an adjustment to an incentive payout on the basis of such factors as it deems relevant, and is not required to prospectively establish any weighting with respect to the factors it considers. We believe that maintaining this flexibility is helpful in ensuring that executive officers are appropriately compensated for their performance and are neither rewarded nor penalized as a result of unusual circumstances not foreseeable at the time performance measures were developed.

Performance Objectives. Under the terms of the Annual Incentive Plan, the Compensation Committee may consider any of the following when selecting performance objectives:

- market capitalization growth,
- revenue,
- earnings before interest, taxes, depreciation and amortization (“EBITDA”) or adjusted EBITDA as consistently defined for purposes of our normal earnings releases,
- cash earnings (earnings before amortization of intangibles),
- operating income (before or after taxes),
- pre- or after-tax income (before or after allocation of corporate overhead and bonus),
- earnings per share,
- net cash flow,
- net cash flow per share,
- net earnings,
- return on equity,
- return on total capital,
- return on sales,
- return on net assets employed,
- return on assets or net assets,
- total shareholder return,
- improvement in or attainment of expense levels and/or cost recovery levels,
- improvement in or attainment of working capital levels,
- net sales,
- revenue growth or product revenue growth,
- return on equity,
- appreciation in and/or maintenance of the price of the shares of common stock,
- market share,
- gross profits,
- comparisons with various stock market indices,
- reductions in cost,
- cash flow or cash flow per share (before or after dividends),
- return on capital (including return on total capital or return on invested capital),
- cash flow return on investments,
- improvement in or attainment of expense levels or working capital levels,
- shareholder equity and
- any other objective business criteria that the Compensation Committee may determine appropriate.

2018 Performance Objectives. In March 2018, in consultation with management and our outside compensation consultant, the Compensation Committee reviewed the potential performance objectives as set forth in the Annual Incentive Plan and approved the 2018 corporate performance objectives, which included: (1) market capitalization growth, (2) adjusted EBITDA plus change in deferred revenues related to upfront and milestone payments (targeting break-even through 2018), (3) target corporate proceeds from external financings of \$250 million, (4) the development of intrinsic value within the enterprise, and (5) comparisons with biotech and other applicable market indices. While the Compensation Committee elected not to assign specific weighting to the objectives, it reserved the right to assign such weighting as it deemed appropriate at the close of fiscal year 2018.

Discretionary Committee Action Relative to 2018 Corporate Performance. In January 2019, the Compensation Committee reviewed our performance in 2018 relative to the performance objectives identified above. The Compensation Committee determined that although certain objectives were not met, the Company had exceeded its target of \$250 million in corporate proceeds and had developed intrinsic value within the enterprise through (i) significant progress on clinical programs, (ii) significant platform technology advances and (iii) third party validation of its technology. The Compensation Committee also considered that the Company had achieved several significant transformational objectives beyond those that were contemplated in March 2018. The Compensation Committee made no determination as to the funding of the incentive pool under the Annual Incentive Plan. However, noting retention and recruitment concerns arising from no annual incentives being paid in fiscal years 2016 and 2017 under the Annual Incentive Plan, the Compensation Committee determined that a one-time incentive, valued at \$300,000, would be awarded to each of our named executive officers for performance in fiscal year 2018 as follows:

- a \$100,000 cash incentive award;
- an award of fully vested RSUs with a grant date fair value of \$100,000, based upon the closing price of the Company's common stock on the date of the grant; and
- an award of RSUs, vesting ratably over four years, with a grant date fair value of \$100,000, based upon the closing price of the Company's common stock on the date of the grant.

This determination was consistent with the recommendations of management and our outside compensation consultant. In particular, the decision to use common stock and RSUs for two-thirds of the value of the award reflected a desire to limit our use of cash and to provide additional retention incentives for our executive officers. The comparative executive compensation review performed with the assistance of Mr. Siciliano in December 2018 reflected that, at the time, our executives had limited in-the-money equity awards, and that the use of equity awards would provide a retention benefit to the Company.

Long-Term Equity Incentive Awards

General. Our primary objectives in granting long-term equity incentive awards are to encourage significant ownership of our common stock by management and to provide long-term financial incentives linked directly to our long-term performance. The Compensation Committee believes that significant ownership of our common stock by senior management helps to align the interests of management and the shareholders.

Our long-term equity incentive awards have historically been in the form of time-vested stock options, generally vesting over four years. However, in a change prompted by (i) a desire to further align long-term compensation with company performance and (ii) an effort to strategically respond to the evolving recruitment and retention strategies of current or future competitors for our desired pool of executive talent, the Compensation Committee determined that, beginning in fiscal year 2018, it was appropriate to incorporate RSUs into the mix of long-term equity incentive awards contemplated as part of its long-term compensation strategy. The inclusion of RSUs is reflected in the 2018 long-term equity grants to executives, and is expected to continue to be a component of the Company's long-term equity incentive compensation strategy.

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Although we do not have a formal policy with respect to the grant of equity incentive awards to our executive officers, or any formal equity ownership guidelines applicable to them, we believe that equity grants provide our executives with a strong link to our long-term performance, create an ownership culture, and help to align the ownership interests of our executives and our shareholders. In addition, we believe that equity grants with a time-based vesting feature promote executive retention by incentivizing our executive officers to remain in our employment during the vesting period. Further, the levels at which they are granted, we believe, are competitive and appropriate for a company such as ours that is in a stage of anticipated growth with anticipated potential upside in stock performance over the long term. The size of the awards has historically taken into account a number of factors, including company performance as defined by the achievement of strategic objectives, individual performance, stock price performance, salary level and tenure. The Compensation Committee believes that broad and significant employee ownership of our common stock effectively motivates the building of shareholder wealth.

With the exception of significant promotions and new hires, equity grants, when awarded, have generally been awarded toward the beginning of the fiscal year. The Compensation Committee selects this timing because it enables us to consider the prior year performance of the Company and the participants' and our expectations for the next performance period.

The Compensation Committee's practice when granting stock options has been to use the closing price of our common stock on the day of the grant as the exercise price. As a matter of formal written policy, we have not and do not time the grant of stock options around the disclosure of non-public information or back-date stock options.

2018 Equity Awards. In January 2018, the Compensation Committee considered long-term equity incentive awards for fiscal year 2018 in connection with its review of 2017 executive compensation and in light of certain retention and recruitment concerns. The Committee approved a grant of 39,063 RSUs to each of the named executive officers as set forth below and as listed in the Grants of Plan Based Awards table on page 63. These grants reflected the recommendations of the outside compensation consultant as appropriate to incentivize and retain the recipients. Subsequently, in March 2018, the Compensation Committee reviewed Dr. Sabzevari's incentive equity holdings and, in consideration of a number of factors including Dr. Sabzevari's oversight of several of the Company's health platforms, and the importance to the Company of maintaining Dr. Sabzevari in her present position and incentivizing her maximum performance to help realize value for the Company and its shareholders, determined an additional grant of 100,000 RSUs was appropriate to incentivize and retain Dr. Sabzevari. All 2018 equity awards were granted under the 2013 Plan. Each award vests in 25 percent increments over a four-year period beginning one year from the date of grant, with the exception of Dr. Sabzevari's March 2018 grant, which vests in 25 percent increments over a four-year period beginning one year from the date of her hire on July 17, 2017.

| Name | Grant Date | RSU Grant |
|-----------------|-------------------|------------------|
| Randal Kirk | — | — |
| Rick Sterling | 1/2/2018 | 39,063 |
| Donald Lehr | 1/2/2018 | 39,063 |
| Nir Nimrodi | 1/2/2018 | 39,063 |
| Helen Sabzevari | 1/2/2018 | 39,063 |
| | 3/28/2018 | 100,000 |

Severance Policies

For 2018, we did not provide contractual severance protection to our executive officers, other than through the terms of any equity awards granted under the 2013 Plan, which provide for vesting upon a change in control, death, or disability.

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Deferred Compensation

We do not provide a deferred compensation plan.

Other Benefits

The Compensation Committee believes employee benefits are an essential component of our competitive total compensation package. These benefits are designed to attract and retain our employees. The executive officers may participate in, and the Company makes contributions on their behalf to, the same benefit plans that are provided to all of our eligible employees, which include medical, health and dental insurance, long-term disability insurance, accidental death and disability insurance and our 401(k) Plan. As part of the 401(k) Plan, we generally match 100 percent of the first three percent of compensation contributed by the employee into the 401(k) Plan subject to the Internal Revenue Code and our 401(k) Plan limits. We have disclosed all company matches for our named executive officers in the column labeled "All Other Compensation," in the Summary Compensation Table on page 62, and separately disclosed each amount in the All Other Compensation Table on page 63 of this Proxy Statement.

The Compensation Review Process

Process for Approval of Compensation Measures. Management makes a recommendation to the Compensation Committee and the Board regarding key financial goals, operational goals and performance measures that will guide us for the relevant fiscal year. Specific metrics are recommended by the Compensation Committee and approved by the Board and become the compensation measures for the executive officers.

Role of the Compensation Committee and Management. Governance of our compensation program is the responsibility of the Compensation Committee, which consists solely of independent directors. At the direction of the Compensation Committee, our Chief Executive Officer prepares compensation recommendations regarding the compensation of each of our executive officers, other than himself, and presents those recommendations to the Compensation Committee for approval. The Compensation Committee evaluates the overall performance of the executive officers based on the Company's achievement of corporate performance objectives and goals and individual performance. The Compensation Committee then reviews and takes into account all elements of executive compensation in setting policies and determining compensation amounts.

Role of Compensation Consultant. As discussed above, the Compensation Committee is authorized to retain experts, consultants and other advisors to aid in the discharge of its duties. In 2018, the Compensation Committee retained F. Daniel Siciliano as its outside compensation consultant. Mr. Siciliano is the co-founder and Fellow of the Arthur and Toni Rembe Rock Center for Corporate Governance at Stanford Law School and the immediate past Faculty Director and Professor of the Practice at the Center. Mr. Siciliano is a noted authority on matters related to executive compensation and corporate governance. Mr. Siciliano was retained to (1) review the Company's historical compensation practices, (2) advise the Compensation Committee on compensation standards and trends, (3) assist in the implementation of compensation policies and programs, and (4) review recommendations from management on compensation matters. All work completed by Mr. Siciliano is subject to the approval of the Compensation Committee. Mr. Siciliano's role includes providing independent advice and counsel to the Compensation Committee. The Compensation Committee does not delegate authority to its outside advisor or to other parties.

In retaining Mr. Siciliano, the Compensation Committee separately considered the six factors set forth in Section 10C-1(b)(4)(i) through (vi) of the Exchange Act and, based on such consideration, determined that the engagement of Mr. Siciliano did not raise any conflicts of interest.

No Formal Peer Group Analysis. We believe we have structured a fair and competitive compensation package for our executive officers. The Board and the Compensation Committee believe that, due to the unique and rapidly evolving nature of our business, there is neither a robust nor stable cohort of peer companies available to use as a formal peer group for our Company. For this reason, we did not undertake a formal peer

group analysis of executive compensation or target compensation to specific benchmarks against any peer group companies. However, the Compensation Committee does regularly monitor certain compensation practices at a variety of similarly situated or similarly structured companies, which often vary, and does discuss compensation data for companies with which it believes we compete for executive talent. The Compensation Committee also uses information gathered from other sources, including from members of our Compensation Committee, human resources staff and our outside compensation consultant in assessing and making compensation decisions.

Establishing Total Direct Remuneration

Total direct remuneration is the sum of base salary, annual incentive awards, long-term equity incentive awards and other benefits. A major portion of each executive officer's remuneration is established by performance-based incentives, which require achievement of performance objectives and goals as a condition to earning annual incentive awards, and long-term equity incentive awards, the value of which depends on our stock price upon vesting or exercise. The at-risk portion of total direct remuneration provides increased pay for higher levels of corporate and/or business sector performance.

In setting each executive officer's total direct remuneration opportunity, the Compensation Committee takes into account factors such as the responsibilities, experience, performance, contributions and service of the executive. We do not set total direct remuneration or the component parts at levels to achieve a mathematically precise market position. In determining executive compensation, the Compensation Committee reviews all components of each executive officer's total compensation, including retirement benefits and the costs of any perquisites received, to ensure such compensation meets the goals of the program. As a part of this review, the Compensation Committee considers corporate performance and the recommendations of senior management. The Compensation Committee also takes into consideration individual and overall company operating performance to ensure executive compensation reflects past performance as well as future potential and, we believe, adequately differentiates among employees, based on the scope and complexity of the employee's job position, individual performance and experience and our ability to pay. The Compensation Committee reviews annually each executive officer's performance prior to considering changes in compensation. The individual performance of each executive officer is evaluated in light of our overall performance (as described in greater detail below) and non-financial goals and strategic objectives approved by the Compensation Committee and the Board. The Compensation Committee and the Board believe that the competitive environment, including for executive talent, is dynamic and evolving. For this reason, while the Compensation Committee believes the total compensation for each of the executive officers is reasonable and appropriate, the Committee continues to actively consider methods to further improve the effectiveness of the Company's approach to executive compensation.

Consideration of Say-on-Pay Vote Results

Our Board has determined to provide our shareholders the opportunity to vote each year to approve, on an advisory basis, the compensation of our named executive officers as disclosed in our Proxy Statement ("say-on-pay"). As an advisory vote, the vote on executive compensation is non-binding on the Board and should not be construed as (i) overruling a decision by the Board, (ii) creating or implying any change to our fiduciary duties, or (iii) creating or implying any additional fiduciary duties for the Board. Although the vote is non-binding, the Board and the Compensation Committee value the opinions of our shareholders, and consider our shareholders' views when making executive compensation decisions, as they deem appropriate.

At our 2018 Annual Meeting of Shareholders, we held a non-binding shareholder say-on-pay vote. Our shareholders approved our 2018 executive compensation proposal, with 96.9 percent of the shares that were cast on the proposal voted in favor of the say-on-pay resolution. We did not make any significant changes in our policies or programs in response to this vote. However, we will continue to consider the outcome of the say-on-pay vote for future compensation decisions for our executive officers.

Other Executive Compensation Practices

Anti-Hedging Policy

To ensure alignment of the interests of our shareholders, directors and executive officers, the Company's Insider Trading Policy does not permit directors, officers or employees to engage in short-term or speculative transactions involving the Company's securities, including short sales, publicly-traded options or hedging the Company's securities.

Compensation Recovery Policies

It is the Board's policy that in the event the Board determines that a significant restatement or correction of our financial results or other metrics is required for the prior fiscal year for which audited financial statements have been completed, and, had the results or metrics been properly calculated initially, our officers would have received less compensation, the Board has the authority to obtain reimbursement of any portion of any performance based compensation paid or awarded, whether cash or equity based, to the officers and to other employees responsible for accounting errors resulting in the restatement or correction that is greater than would have been paid or awarded calculated based upon the restated or corrected financial results or metrics. Further, it is the policy of the Board to seek recoupment in all instances where Section 304 of the Sarbanes-Oxley Act of 2002 requires us to seek recoupment.

United States Federal Income Tax Limits on Deductibility

Prior to the enactment of the Tax Act, which was signed into law on December 22, 2017, a public corporation's covered employees included its chief executive officer and three other most highly compensated executive officers (other than the chief financial officer), and certain "qualified performance-based compensation" was excluded from the \$1 million deduction limit. The Tax Act made certain changes to Section 162(m), effective for taxable years beginning after December 31, 2017, including, among others, expanding the definition of "covered employee" to include the chief financial officer and repealing the qualified performance-based compensation exception, subject to a transition rule for remuneration provided pursuant to a written binding contract in effect on November 2, 2017, and which was not modified in any material respect on or after that date. Our policy is to qualify compensation paid to our executive officers for deductibility for federal income tax purposes to the extent feasible. However, to retain highly skilled executives and remain competitive with other employers, our Compensation Committee may authorize compensation that would not be deductible under Section 162(m) of the Code or otherwise if it determines that such compensation is in the best interests of us and our shareholders.

The Annual Incentive Plan is not designed to comply with Section 162(m) of the Internal Revenue Code, as it would require our Annual Incentive Plan awards to be entirely formulaic and not allow for the Compensation Committee to exercise an acceptable level of discretion in determining individual performance. In considering the structure of the Annual Incentive Plan, the Compensation Committee carefully assessed the potential cost of making awards under a plan that do not comply with Section 162(m) against the limitations such compliance would place upon the structure of the Annual Incentive Plan. We believe our Annual Incentive Plan is closely aligned with Company performance and also will appropriately reward our executives for their individual contributions to the Company's success while giving the Compensation Committee critical flexibility in compensation decisions regarding our executives.

COMPENSATION COMMITTEE REPORT

The Compensation Committee has reviewed and discussed the Compensation Discussion and Analysis required by Item 402(b) of Regulation S-K with management and, based on such review and discussion, the Compensation Committee recommended to the Board that it be included in this Proxy Statement.

THE COMPENSATION COMMITTEE

James Turley, Chair
Fred Hassan
Jeffrey Kindler

The “Compensation Committee Report” above shall not be deemed incorporated by reference by any general statement incorporating this Proxy Statement into any filing under the Securities Act of 1933, as amended, or under the Securities Exchange Act of 1934, as amended, except to the extent that we specifically incorporate this information by reference, and shall not otherwise be deemed filed under such Acts.

Compensation Risk Assessment

As part of its oversight of our executive compensation program, the Compensation Committee considers the impact of our executive compensation program, and the incentives created by the compensation awards that it administers, on our risk profile. In addition, we review all our compensation policies and procedures, including the incentives that they create and factors that may reduce the likelihood of excessive risk-taking, to determine whether they present a significant risk to us. The Compensation Committee concluded that our compensation programs are designed with the appropriate balance of risk and reward in relation to our overall business strategy and that the balance of compensation elements discourages excessive risk taking. The Compensation Committee, therefore, determined that the risks arising from our compensation policies and practices for employees are not reasonably likely to have a material adverse effect on us. The Compensation Committee will continue to consider compensation risk implications while deliberating the design of our executive compensation programs. In its discussions, the Compensation Committee considered the attributes of our programs, including:

- Appropriate pay philosophy in light of our business model;
- Balance with respect to the mix of cash and equity compensation; and measures of performance against both annual and multi-year standards;
- Short and long-term incentives linked to stock price performance;
- Performance goals are set at levels that are sufficiently high to encourage strong performance and support the resulting compensation expense, but within reasonably attainable parameters to discourage pursuit of excessively risky business strategies;
- Long-term incentives generally have multi-year vesting to ensure a long-term focus and appropriate balance against short-term goals;
- Independent Compensation Committee oversight, with Compensation Committee discretion to reduce incentives based on subjective evaluation of individual performance; and
- Anti-hedging policies.

SUMMARY COMPENSATION TABLE

The following table sets forth the compensation paid to or accrued by our named executive officers during the fiscal years ended December 31, 2018, 2017 and 2016.

| Name and Principal Position | Year | Salary (\$) | Bonus (\$) | Stock Awards(1) (\$) | Option Awards(2) (\$) | All Other Compensation(3) (\$) | Total (\$) |
|--|-------------|------------------------|-----------------------|-------------------------------------|--------------------------------------|---|-----------------------|
| Randal Kirk | 2018 | \$ — | \$100,000 | \$1,956,450 | \$ — | \$ — | \$2,056,450 |
| Chief Executive Officer and Chairman of the Board | 2017 | \$ — | \$ — | \$1,907,879 | \$ — | \$ — | \$1,907,879 |
| | 2016 | \$ — | \$ — | \$1,860,629 | \$ — | \$ — | \$1,860,629 |
| Rick Sterling | 2018 | \$466,250 | \$100,000 | \$ 526,179 | \$ — | \$ 31,220 | \$1,123,649 |
| Chief Financial Officer | 2017 | \$442,509 | \$ — | \$ — | \$2,702,880 | \$ 31,261 | \$3,176,650 |
| | 2016 | \$342,500 | \$ — | \$ — | \$ — | \$ 30,097 | \$ 372,597 |
| Donald Lehr(4) | 2018 | \$575,000 | \$100,000 | \$ 526,179 | \$ — | \$ 31,234 | \$1,232,413 |
| Chief Legal Officer | 2017 | \$564,593 | \$ — | \$ — | \$2,702,880 | \$ 31,352 | \$3,298,825 |
| Nir Nimrodi | 2018 | \$515,000 | \$100,000 | \$ 526,179 | \$ — | \$ 21,636 | \$1,162,815 |
| Former Chief Business Officer | 2017 | \$513,759 | \$ — | \$ — | \$ — | \$ 30,010 | \$ 543,770 |
| | 2016 | \$500,000 | \$ — | \$ — | \$ — | \$ 20,948 | \$ 520,948 |
| Helen Sabzevari(5) | 2018 | \$500,000 | \$100,000 | \$2,108,179 | \$ — | \$ 14,625 | \$2,722,804 |
| President, Precigen, Inc. | | | | | | | |

- (1) Represents the grant date fair value computed by us for financial reporting purposes, computed in accordance with ASC Topic 718. In November 2015, Mr. Kirk began receiving \$200,000 per month payable in fully vested shares of our common stock, which are subject to a three year lock-up on resale. For the years ended December 31, 2018, 2017 and 2016, Mr. Kirk received 187,749, 129,977 and 87,041 shares of common stock, respectively. The three year lock-up on resale results in a discount to the monthly value for financial reporting purposes. This column does not include for 2018 the grant date fair value of RSUs granted as part of the incentive award for performance in 2018 because the awards were granted in 2019.
- (2) Represents the grant date fair value computed by us for financial reporting purposes, computed in accordance with ASC Topic 718. For a full description of the assumptions we use in computing these amounts, see Note 2 to our consolidated financial statements for the year ended December 31, 2018, which is included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018, as filed with the SEC on March 1, 2019. The actual value a named executive officer may receive depends on market prices and there can be no assurance that the amounts reflected in the Option Awards column will actually be realized. No gain to a named executive officer is possible without an appreciation in stock value after the date of grant.
- (3) The amounts in this column are further detailed in the “ALL OTHER COMPENSATION TABLE FOR 2018” on page 63.
- (4) Compensation information is provided only for fiscal years 2017 and 2018 because, as Mr. Lehr was not a named executive officer until 2017, information for previous years is not required to be disclosed.
- (5) Compensation information is provided only for fiscal year 2018 because, as Dr. Sabzevari was not a named executive officer until 2018, information for previous years is not required to be disclosed.

ALL OTHER COMPENSATION TABLE FOR 2018

The table below reflects the types and dollar amounts of perquisites, additional compensation and other personal benefits provided to the named executive officers during fiscal year 2018. For purposes of computing the dollar amounts of the items listed below, we used the actual out-of-pocket costs to us of providing the perquisite or other personal benefit to the named executive officer. The named executive officers paid any taxes associated with these benefits without reimbursement from us.

| <u>Name</u> | <u>Company-Paid Welfare and Life Benefits Premiums (\$)</u> | <u>401(k) Plan Company Contributions (\$)</u> | <u>Total (\$)</u> |
|-----------------|---|---|-------------------|
| Randal Kirk | — | — | — |
| Rick Sterling | 22,970 | 8,250 | 31,220 |
| Donald Lehr | 22,984 | 8,250 | 31,234 |
| Nir Nimrodi | 21,636 | — | 21,636 |
| Helen Sabzevari | 6,375 | 8,250 | 14,625 |

GRANTS OF PLAN-BASED AWARDS FOR 2018

The following table presents information regarding grants of plan-based awards to the named executive officers during the fiscal year ended December 31, 2018.

| <u>Name</u> | <u>Grant Date</u> | <u>All Other Stock Awards: Number of Shares of Stock or Units (#)</u> | <u>Grant Date Fair Value of Stock and Option Awards(1)</u> |
|-----------------|-------------------|---|--|
| Randal Kirk | 1/31/2018 | 15,384 | \$ 159,984 |
| | 2/28/2018 | 15,360 | \$ 162,950 |
| | 3/29/2018 | 13,046 | \$ 162,956 |
| | 4/30/2018 | 11,001 | \$ 159,989 |
| | 5/31/2018 | 12,062 | \$ 159,980 |
| | 6/29/2018 | 14,347 | \$ 162,958 |
| | 7/31/2018 | 13,642 | \$ 162,953 |
| | 8/31/2018 | 13,003 | \$ 166,248 |
| | 9/30/2018 | 11,614 | \$ 169,554 |
| | 10/31/2018 | 17,301 | \$ 162,960 |
| | 11/30/2018 | 20,408 | \$ 162,959 |
| | 12/31/2018 | 30,581 | \$ 162,960 |
| Rick Sterling | 1/2/2018 | 39,063 | \$ 526,179 |
| Donald Lehr | 1/2/2018 | 39,063 | \$ 526,179 |
| Nir Nimrodi | 1/2/2018 | 39,063 | \$ 526,179 |
| Helen Sabzevari | 1/2/2018 | 39,063 | \$ 526,179 |
| | 3/28/2018 | 100,000 | \$ 1,582,000 |

(1) Represents the grant date fair value of the equity awards determined in accordance with ASC Topic 718.

OUTSTANDING EQUITY AWARDS AT 2018 FISCAL YEAR END

The following table sets forth specified information concerning unexercised stock options and unvested RSUs for each of the named executive officers outstanding as of December 31, 2018.

| Name | Grant Date | Option Awards | | | | Stock Awards | |
|-----------------|------------|--|---|----------------------------|------------------------|--|--|
| | | Number of Securities Underlying Unexercised Options: Exercisable | Number of Securities Underlying Unexercised Options: Unexercisable ⁽¹⁾ | Option Exercise Price (\$) | Option Expiration Date | Number of Shares or Units of Stock Not Vested (#) ⁽¹⁾ | Market Value of Shares or Units of Stock Not Vested (\$) |
| Randal Kirk | — | — | — | — | — | — | — |
| Rick Sterling | 3/20/2014 | 204,472 | — | 29.56 | 3/20/2024 | — | — |
| | 2/2/2017 | 56,250 | 168,750 | 20.94 | 2/2/2027 | — | — |
| | 1/2/2018 | — | — | — | — | 39,063 | 255,472 |
| Donald Lehr | 7/1/2011 | 47,509 | — | 6.85 | 7/1/2021 | — | — |
| | 3/20/2014 | 207,855 | — | 29.56 | 3/20/2024 | — | — |
| | 2/2/2017 | 56,250 | 168,750 | 20.94 | 2/2/2027 | — | — |
| | 1/2/2018 | — | — | — | — | 39,063 | 255,472 |
| Nir Nimrodi | 3/17/2014 | 1,039,277 | — | 28.81 | 3/17/2024 | — | — |
| | 1/2/2018 | — | — | — | — | 39,063 | 255,472 |
| Helen Sabzevari | 7/17/2017 | 37,500 | 112,500 | 22.83 | 7/17/2027 | — | — |
| | 1/2/2018 | — | — | — | — | 39,063 | 255,472 |
| | 3/28/2018 | — | — | — | — | 100,000 | 654,000 |

(1) Each award vests in four equal annual installments beginning on the anniversary of the grant date.

OPTION EXERCISES AND STOCK AWARDS VESTED FOR 2018

The following table sets forth specified information concerning exercises of stock options and stock vesting for each of the named executive officers outstanding as of December 31, 2018.

| Name | Option Awards | | Stock Awards | |
|----------------------------|---|---------------------------------|--|--|
| | Number of Shares Acquired on Exercise (#) | Value Realized on Exercise (\$) | Number of Shares Acquired on Vesting (#) | Value Realized on Vest (\$) ⁽¹⁾ |
| Randal Kirk ⁽²⁾ | — | — | 15,384 | \$ 199,992 |
| | — | — | 15,360 | \$ 199,987 |
| | — | — | 13,046 | \$ 199,995 |
| | — | — | 11,001 | \$ 199,998 |
| | — | — | 12,062 | \$ 199,988 |
| | — | — | 14,347 | \$ 199,997 |
| | — | — | 13,642 | \$ 199,992 |
| | — | — | 13,003 | \$ 199,986 |
| | — | — | 11,614 | \$ 199,993 |
| | — | — | 17,301 | \$ 200,000 |
| | — | — | 20,408 | \$ 199,998 |
| | — | — | 30,581 | \$ 200,000 |
| Rick Sterling | — | \$ — | — | \$ — |
| Donald Lehr | — | \$ — | — | \$ — |
| Nir Nimrodi | — | \$ — | — | \$ — |
| Helen Sabzevari | — | \$ — | 25,000 | \$ 366,000 |

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- (1) The amounts in the “Value Realized on Vesting” column are calculated based on the closing market price per share of our common stock on the date of vesting. This calculation differs from the grant date fair value of the equity awards determined in accordance with ASC Topic 718.
- (2) During 2018, Mr. Kirk received a total of 187,749 fully vested shares of common stock pursuant to his RSU Agreement.

EQUITY COMPENSATION PLANS AND OTHER BENEFIT PLANS

Intrexon Corporation 2008 Equity Incentive Plan

The Intrexon Corporation 2008 Equity Incentive Plan, as amended, which we refer to as the 2008 Plan, was adopted by our Board and our shareholders in April 2008.

The 2008 Plan provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights (“SARs”), restricted stock awards, RSU awards and incentive awards. Our employees, directors, consultants and advisors, and the employees, directors, consultants and advisors of our affiliated entities, are eligible to receive awards under the 2008 Plan; however, incentive stock options may only be granted to our employees or the employees of our subsidiaries. In accordance with the terms of the 2008 Plan, the Compensation Committee of our Board administers the 2008 Plan and, subject to any limitations in the 2008 Plan, selects the recipients of awards and determines, among other things:

- the number of shares of common stock covered by options and the dates upon which those options become exercisable;
- the exercise prices of options;
- the duration of options (subject to certain limitations set forth in the plan);
- the methods of payment of the exercise price of options;
- the number of shares of common stock subject to any SARs and the terms and conditions of those rights, including the term (subject to certain limitations set forth in the plan), the conditions for exercise and payment upon exercise;
- the number of shares of common stock subject to any restricted stock awards and RSU awards and the terms and conditions of those awards, including the price, if any, restriction period (subject to certain limitations set forth in the plan) and conditions for repurchase (with respect to restricted stock awards); and
- the number of shares of common stock subject to any incentive awards and the terms and conditions of those awards, including the payment terms and award or the dollar amount of any incentive award period (subject to certain limitations set forth in the plan).

In the event of a change in control, as defined in the 2008 Plan, the Compensation Committee has the discretion to take one or more of the following actions with respect to outstanding awards on or before the date of the change in control:

- provide, upon notice to the participant, that some or all of the outstanding options and SARs shall terminate on or before the change in control without payment to the holder of such option or SAR if not exercised by the holder (to the extent such options and SARs are then exercisable or exercisable by the change in control) prior to the change in control;
- provide that all outstanding awards shall terminate on or before the change in control in consideration for payment to the holders (to the extent such awards are then exercisable or exercisable, vested or otherwise payable by the change in control) of the excess, if any, of the fair market value of the common stock subject to the award minus the exercise price or initial value, if any (as applicable); and
- take such other action as the Compensation Committee determines reasonable to permit the holder of the award to realize the value of the award (to the extent such awards are then exercisable or exercisable by the change in control).

As of March 31, 2019, there were options to purchase an aggregate of 393,098 shares of common stock outstanding under the 2008 Plan at a weighted-average exercise price of \$7.36 per share and a weighted average remaining term of 2.95 years. On and after the effective date of the 2013 Plan described below, we have not granted any further stock options or other awards under the 2008 Plan.

Intrexon Corporation 2013 Omnibus Incentive Plan

The 2013 Plan became effective upon the closing of our initial public offering in August 2013 and was approved by our shareholders at our 2014 Annual Meeting. At each of our 2015 and 2016 Annual Meetings, our shareholders authorized an additional 3,000,000 shares of common stock for issuance pursuant to the 2013 Plan. At each of our 2017 and 2018 Annual Meetings, our shareholders authorized an additional 2,000,000 shares of common stock for issuance pursuant to the 2013 Plan. The material terms of the 2013 Plan are summarized below.

As of March 31, 2019, there were options to purchase an aggregate of 11,312,743 shares of common stock outstanding under the 2013 Plan at a weighted-average exercise price of \$27.19 per share and a weighted average remaining term of 6.91 years, 2,288,017 RSUs outstanding under the 2013 Plan, and 2,561,296 shares of common stock reserved for future issuance under the 2013 Plan, which is our only plan under which equity awards can currently be made to employees and non-employee directors. As described in Proposal 4 of this Proxy Statement on page 36, the Board has approved, subject to shareholder approval, authorizing an additional 5,000,000 shares of common stock for issuance pursuant to the 2013 Plan. As of April 16, 2019, the fair market value of a share of our common stock was \$5.07, measured as the closing sale price on that date, as reported by the Nasdaq Global Select Market.

Summary of the Material Terms of the 2013 Plan

Purpose. We established the 2013 Plan to attract, retain and motivate our employees, officers and non-employee directors, to promote the success of our business by linking the personal interests of our employees, officers, consultants, advisors and non-employee directors to those of our shareholders and to encourage stock ownership on the part of management. The 2013 Plan is intended to permit the grant of stock options (both incentive stock options, or “ISOs”, and non-qualified stock options, or “NQSOs,” and, collectively, “Options”), SARs, restricted stock awards, or Restricted Stock Awards, RSUs, incentive awards, or Incentive Awards, other stock-based awards, or Stock Based Awards, and dividend equivalents, or Dividend Equivalents.

Administration. The 2013 Plan is administered by our Compensation Committee, which has the authority to grant awards to such persons and upon such terms and conditions (not inconsistent with the provisions of the 2013 Plan) as it may consider appropriate. Our Compensation Committee may act through subcommittees or, with respect to awards granted to individuals who are not subject to the reporting and other provisions of Section 16 of the Exchange Act, who are not members of our Board or the board of directors of our Affiliates (as defined by the 2013 Plan) and who are not a covered employee subject to the \$1 million deduction limit under Section 162(m) of the Code, delegate to one or more officers all or part of its duties with respect to such awards. Our Compensation Committee may, at its discretion, accelerate the time at which any award may be exercised, become transferable or nonforfeitable or become earned and settled including without limitation (i) in the event of the participant’s death, disability, retirement or involuntary termination of employment or service (including a voluntary termination of employment or service for good reason) or (ii) in connection with a Change in Control (as defined in the 2013 Plan).

Authorized Shares. Under the 2013 Plan, we may issue a maximum aggregate of 20,000,000 shares of common stock (25,000,000 shares of common stock if the shareholders approve the Amendment to the 2013 Plan as discussed under Proposal 4 above), all of which may be issued pursuant to Options, SARs, Restricted Stock Awards, RSUs, Incentive Awards, Stock-Based Awards or Dividend Equivalents. Each share issued in connection with an award will reduce the number of shares available under the 2013 Plan by one, and each share covered under the exercised portion of a SAR will reduce the number of shares available under the 2013 Plan by one, even though the share is not actually issued upon settlement of the SAR. Shares relating to awards that are terminated by expiration, forfeiture, cancellation or otherwise without issuance of shares of common stock, settled in cash in lieu of shares, or exchanged prior to the issuance of shares for awards not involving shares, will again be available for issuance under the 2013 Plan. Shares not issued as a result of net settlement of an award,

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tendered or withheld to pay the exercise price, purchase price or withholding taxes of an award or shares purchased on the open market with the proceeds of the exercise price of an award will be deemed delivered under the 2013 Plan and will not again be available for issuance under the 2013 Plan.

Written Agreements. All awards granted under the 2013 Plan will be governed by separate written agreements between the participants and us. The written agreements will specify the terms of the particular awards.

Transferability. Generally, an award is non-transferable except by will or the laws of descent and distribution, and during the lifetime of the participant to whom the award is granted, the award may only be exercised by, or payable to, the participant. However, the Compensation Committee may provide that awards, other than ISOs or a Corresponding SAR that is related to an ISO, may be gifted by a participant to immediate family members or trust or other entities on behalf of the Participant and/or family members. Any such transfer will be permitted only if (i) the participant does not receive any consideration for the transfer and (ii) the Committee expressly approves the transfer. The holder of the transferred award will be bound by the same terms and conditions that governed the award during the period that it was held by the participant, except that such transferee may only transfer the award by will or the laws of descent and distribution.

Maximum Award Period. No award shall be exercisable or become vested or payable more than ten years after the date of grant. An ISO granted to a Ten Percent Shareholder (as defined in the 2013 Plan) or a corresponding SAR that relates to such an ISO may not be exercisable more than five years after the date of grant.

Compliance with Applicable Law. No award shall be exercisable, vested or payable except in compliance with all applicable federal and state laws and regulations (including, without limitation, tax and securities laws), any listing agreement with any stock exchange to which we are a party, and the rules of all domestic stock exchanges on which our shares may be listed.

Payment. The exercise or purchase price of an award, and any taxes required to be withheld with respect to an award, may be paid in cash or, if the written agreement so provides, the Compensation Committee may allow a participant to pay all or part of the exercise or purchase price, and any required withholding taxes, by tendering shares of common stock the participant already owns, through a broker-assisted cashless exercise, by means of “net exercise” procedure whereby shares of common stock shall be withheld from delivery, or any other specified medium of payment or combination thereof.

Shareholder Rights. No participant shall have any rights as our shareholder as a result of issuance of an award until the award is settled by the issuance of common stock (other than a Restricted Stock Award or RSUs for which certain shareholder rights may be granted).

Forfeiture Provisions. Awards do not confer upon any individual any right to continue in our employ or service or in the employ or service of our affiliated entities. All rights to any award that a participant has will be immediately forfeited if the participant is discharged from employment or service.

Types of awards

Options. Both ISOs and NQSOs may be granted under the 2013 Plan. Our Compensation Committee determines the eligible individuals to whom grants of Options will be made, the number of shares subject to each option, the exercise price per share, the time or times at which the option may be exercised, whether any performance or other conditions must be satisfied before a participant may exercise an option, the method of payment by the participant, the method of delivery of shares to a participant, whether the Option is an ISO or a NQSO, and all other terms and conditions of the award. However, the exercise price of an Option may not be less than the fair market value of a share of common stock on the date the Option is granted. No participant may be

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granted ISOs that are first exercisable in any calendar year for shares of common stock having an aggregate fair value (determined on the date of grant) that exceeds \$100,000. With respect to an ISO granted to a participant who is a Ten Percent Shareholder (as defined in the 2013 Plan), the exercise price per share may not be less than 110 percent of the fair market value of the common stock on the date the Option is granted. At the Compensation Committee's discretion, an Option may be granted with or without a Corresponding SAR (as defined below).

SARs. A SAR entitles the participant to receive, upon exercise, the excess of the fair market value on that date of each share of common stock subject to the exercised portion of the SAR over the fair market value of each such share on the date of the grant of the SAR. A SAR can be granted alone or in tandem with an Option. A SAR granted in tandem with an Option is called a Corresponding SAR and entitles the participant to exercise the Option or the SAR, at which time the other tandem award expires with respect to the number of shares being exercised. The Compensation Committee is authorized to determine the eligible individuals to whom grants of SARs will be made, the number of shares of common stock covered by the grant, the time or times at which a SAR may be exercised and all other terms and conditions of the SAR. However, no participant may be granted Corresponding SARs that are related to ISOs which are first exercisable in any calendar year for shares of common stock having an aggregate fair market value (determined on the date of grant) that exceeds \$100,000.

Restricted Stock Awards and RSUs. A Restricted Stock Award is the grant or sale of shares of common stock, which may be subject to forfeiture for a period of time or subject to certain conditions. An RSU entitles the participant to receive, upon vesting, shares of our common stock. We will deliver to the participant one share of common stock for each RSU that becomes earned and payable. With regard to Restricted Stock Awards, the Compensation Committee is authorized to determine the eligible individuals to whom grants will be made, the number of shares subject to such grants, the purchase price, if any, to be paid for each share subject to the award of restricted stock, the time or times at which the restrictions will terminate, and all other terms and conditions of the restricted stock. With regards to RSUs, the Compensation Committee is authorized to determine the eligible individuals to whom grants will be made, the number of shares subject to such grants and the vesting conditions entitling a participant to settlement of the RSUs.

Incentive Awards. An Incentive Award entitles the participant to receive cash or common stock when certain conditions are met. The Compensation Committee has the authority to determine the eligible individuals to whom grants will be made and all other terms and conditions of the Incentive Award.

Stock-Based Awards. Stock-Based Awards may be denominated or payable in, valued by reference to or otherwise based on shares of common stock, including awards convertible or exchangeable into shares of common stock (or the cash value thereof) and common stock purchase rights and awards valued by reference to the fair market value of the common stock. The Compensation Committee has the authority to determine the eligible individuals to whom grants will be made and all other terms and conditions of Stock-Based Awards. However, the purchase price for the common stock under any Stock-Based Award in the nature of a purchase right may not be less than the fair market value of a share of common stock as of the date the award is granted. Cash awards, as an element of or supplement to any other award under the 2013 Plan, may also be granted.

Our Compensation Committee is also authorized under the 2013 Plan to grant shares of common stock as a bonus, or to grant shares of common stock or other awards in lieu of any of our obligations or of our affiliates to pay cash or to deliver other property under the 2013 Plan or under any other of our plans or compensatory arrangements or any of our affiliates.

Dividend Equivalents. Our Compensation Committee may also grant Dividend Equivalents under the 2013 Plan. A Dividend Equivalent is an award that entitles the participant to receive cash, shares of common stock, other awards or other property equal in value to all or a specified portion of dividends paid with respect to shares of our common stock. The Compensation Committee is authorized to determine the eligible individuals to whom grants will be made and all other terms and conditions of the Dividend Equivalents. However, no Dividend Equivalents may be awarded in connection with an Option, SAR or Stock-Based Award in the nature of purchase rights.

Material Terms of the Performance-Based Compensation

Awards that are paid to Named Executive Officers (as defined in the 2013 Plan) may be subject to the tax deduction limitations of Section 162(m) of the Code.

Eligibility. Any of our employees or service providers, employees or service providers of our Affiliates (as defined in the 2013 Plan), and nonemployee members of our Board or of any board of directors of our Affiliates is eligible to receive an award under the 2013 Plan.

Award Limits. In any calendar year, no participant may be granted awards that relate to more than 1,000,000 shares of common stock. For these purposes, an Option and its corresponding SAR will be counted as a single award. For any award stated with reference to a specific dollar limit, the maximum amount payable with respect to any 12-month performance period to any one participant is \$5,000,000 (pro-rated up or down for performance periods greater or less than 12 months). Award limits that are expressed as a number of shares are subject to the adjustment provisions of the 2013 Plan as described below.

Performance Criteria. Our Compensation Committee has the discretion to establish objectively determinable performance conditions for when qualified performance-based awards will become vested, exercisable and payable. Objectively determinable performance conditions generally are performance conditions (a) that are established in writing (i) at the time of the grant or (ii) no later than the earlier of (x) 90 days after the beginning of the period of service to which they relate and (y) before the lapse of 25 percent of the period of service to which they relate; (b) that are uncertain of achievement at the time they are established and (c) the achievement of which is determinable by a third party with knowledge of the relevant facts. These performance conditions may be based on one or any combination of metrics related to our financial, market or business performance. The form of the performance conditions also may be measured on a company, affiliate, division, business unit or geographic basis, individually, alternatively or in any combination, subset or component thereof. Performance goals may reflect absolute entity performance or a relative comparison of entity performance to the performance of a peer group of entities or other external measure of the selected performance conditions. Profits, earnings and revenues used for any performance condition measurement may exclude any extraordinary or nonrecurring items. The performance conditions may, but need not, be based upon an increase or positive result under the aforementioned business criteria and could include, for example and not by way of limitation, maintaining the status quo or limiting the economic losses (measured, in each case, by reference to the specific business criteria). An award that is intended to become exercisable, vested or payable on the achievement of performance conditions means that the award will not become exercisable, vested or payable solely on mere continued employment or service. However, such an award, in addition to performance conditions, may be subject to continued employment or service by the participant. The performance conditions upon which qualified performance-based compensation may be based include any or any combination of the following: (a) revenue, (b) earnings before interest, taxes, depreciation and amortization, or EBITDA, (c) cash earnings (earnings before amortization of intangibles), (d) operating income, (e) pre- or after-tax income, (f) earnings per share, (g) net cash flow, (h) net cash flow per share, (i) net earnings, (j) return on equity, (k) return on total capital, (l) return on sales, (m) return on net assets employed, (n) return on assets or net assets, (o) share price performance, (p) total shareholder return, (q) improvement in or attainment of expense levels, (r) improvement in or attainment of working capital levels, (s) net sales, (t) revenue growth or product revenue growth, (u) operating income (before or after taxes), (v) pre- or after-tax income (before or after allocation of corporate overhead and bonus), (w) earnings per share; (x) return on equity, (y) appreciation in and/or maintenance of the price of the shares of our common stock, (z) market share, (aa) gross profits, (bb) comparisons with various stock market indices; (cc) reductions in cost, (dd) cash flow or cash flow per share (before or after dividends), (ee) return on capital (including return on total capital or return on invested capital), (ff) cash flow return on investments; (gg) improvement in or attainment of expense levels or working capital levels, and/or (hh) shareholder equity.

Our Compensation Committee has the discretion to select one or more periods of time over which the attainment of one or more of the foregoing performance conditions will be measured for the purpose of

determining when an award will become vested, exercisable or payable. The Compensation Committee has the authority to adjust goals and awards in the manner set forth in the 2013 Plan.

Change in Control. In the event of a “Change in Control” (as defined in the 2013 Plan) and, with respect to awards that are subject to Section 409A of the Internal Revenue Code of 1986, as amended, or the Code, and such awards, 409A Awards, only to the extent permitted by Section 409A of the Code, our Compensation Committee in its discretion may, on a participant-by-participant basis (a) accelerate the vesting of all unvested and unexercised Options, SARs or Stock-Based Awards in the nature of purchase rights and/or terminate such awards, without any payment therefore, immediately prior to the date of any such transaction after giving the participant at least seven days written notice of such actions; (b) fully vest and/or accelerate settlement of any awards; (c) terminate any outstanding Options, SARs or Stock-Based Awards in the nature of purchase rights after giving the participant notice and a chance to exercise such awards (to the extent then exercisable or exercisable upon the change in control); (d) cancel any portion of an outstanding award that remains unexercised or is subject to restriction or forfeiture in exchange for a cash payment to the participant of the value of the award; or (e) require that the award be assumed by the successor corporation or replaced with interests of an equal value in the successor corporation.

Amendment and Termination. The 2013 Plan expires 10 years after its original effective date, unless terminated earlier by our Board. Any award that is outstanding as of the date the 2013 Plan expires will continue in force according to the terms set out in the award agreement. Our Board may terminate, amend or modify the 2013 Plan at any time. However, shareholder approval may be required for certain types of amendments under applicable law or regulatory authority. Except as may be provided in an award agreement or the 2013 Plan, no amendment to the 2013 Plan may adversely affect the terms and conditions of any existing award in any material way without the participant’s consent.

An amendment will be contingent on approval of our shareholders, to the extent required by law, by the rules of any stock exchange on which our securities are then traded or if the amendment would (i) increase the benefits accruing to participants under the 2013 Plan, including without limitation, any amendment to the 2013 Plan or any agreement to permit a re-pricing or decrease in the exercise price of any outstanding awards, (ii) increase the aggregate number of shares of common stock that may be issued under the 2013 Plan, or (iii) modify the eligibility requirements for participation in the 2013 Plan.

Material U.S. Federal Income Tax Consequences of Awards under the 2013 Plan

The following discussion summarizes the principal federal income tax consequences associated with awards under the 2013 Plan. The discussion is based on laws, regulations, rulings and court decisions currently in effect, all of which are subject to change.

ISOs. A participant will not recognize taxable income on the grant or exercise of an ISO (although the excess of the fair market value of the common stock over the exercise price will be included for alternative minimum tax purposes in the year of exercise). A participant will recognize taxable income when he or she disposes of the shares of common stock acquired under the ISO. If the disposition occurs more than two years after the grant of the ISO and more than one year after its exercise, the participant will recognize long-term capital gain (or loss) to the extent the amount realized from the disposition exceeds (or is less than) the participant’s tax basis in the shares of common stock. A participant’s tax basis in the shares of common stock acquired under an ISO generally will be the amount the participant paid for the stock. If common stock acquired under an ISO is disposed of before the expiration of the ISO holding period described above, the participant will recognize as ordinary income in the year of the disposition the excess of the fair market value of the common stock on the date of exercise of the ISO over the exercise price. Any additional gain will be treated as long-term or short-term capital gain, depending on the length of time the participant held the shares. Special rules apply if a participant pays the exercise price by delivery of common stock. We will not be entitled to a federal income tax deduction with respect to the grant or exercise of an ISO. However, in the event a participant disposes of

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common stock acquired under an ISO before the expiration of the ISO holding period described above, we generally will be entitled to a federal income tax deduction equal to the amount of ordinary income the participant recognizes on the disqualifying disposition, subject to the deduction conditions and limits applicable under Section 162(m) of the Code.

NQSOs. A participant will not recognize any taxable income on the grant of a NQSO. On the exercise of a NQSO, the participant will recognize as ordinary income the excess of the fair market value of the common stock acquired over the exercise price. A participant's tax basis in the common stock then is the amount paid for the shares of common stock plus any amounts included in income on exercise of the NQSO. Special rules apply if a participant pays the exercise price by delivery of common stock. The exercise of a NQSO generally will entitle us to claim a federal income tax deduction equal to the amount of ordinary income the participant recognizes on exercise of the NQSO, subject to the deduction conditions and limits applicable under Section 162(m) of the Code.

SARs. A participant will not recognize any taxable income at the time SARs are granted. The participant at the time of receipt will recognize as ordinary income the amount of cash and the fair market value of the common stock that he or she receives on exercise of the SAR. We generally will be entitled to a federal income tax deduction equal to the amount of ordinary income the participant recognizes on exercise of the SAR, subject to the deduction conditions and limits applicable under Section 162(m) of the Code.

Restricted Stock Awards and RSUs. With regard to Restricted Stock Awards, a participant will recognize ordinary income on account of a Restricted Stock Award on the first day that the shares are either transferable or no longer subject to a substantial risk of forfeiture. The ordinary income recognized will equal the excess of the fair market value of the common stock on such date over the price, if any, paid for the stock. However, even if the shares under a Restricted Stock Award are both nontransferable and subject to a substantial risk of forfeiture, the participant may make a special "83(b) election" to recognize income, and have his or her tax consequences determined, as of the date of grant of the Restricted Stock Award. The participant's tax basis in the shares received under the Restricted Stock Award will equal the income recognized plus the price, if any, paid for the Restricted Stock Award. We generally will be entitled to a federal income tax deduction equal to the ordinary income the participant recognizes with respect to the Restricted Stock Award. With regard to RSUs, a participant will not recognize any taxable income at the time RSUs are granted. When the terms and conditions to which the RSUs are subject have been satisfied and the RSUs are paid, the participant will recognize as ordinary income the fair market value of the common stock he or she receives on settlement of the RSUs. We generally will be entitled to a federal income tax deduction equal to the ordinary income the participant recognizes on settlement of the RSUs, subject to the deduction conditions and limits applicable under Section 162(m) of the Code.

Incentive Awards. A participant will not recognize any taxable income at the time an Incentive Award is granted. When the terms and conditions to which an Incentive Award is subject have been satisfied and the award is paid, the participant will recognize as ordinary income the amount of cash and the fair market value of the common stock he or she receives on settlement of the Incentive Award. We generally will be entitled to a federal income tax deduction equal to the amount of ordinary income the participant recognizes on settlement of the Incentive Award, subject to the deduction conditions and limits applicable under Section 162(m) of the Code.

Stock-Based Awards. A participant will recognize ordinary income on receipt of cash or shares of common stock paid with respect to a Stock-Based Award. We generally will be entitled to a federal tax deduction equal to the amount of ordinary income the participant recognizes subject to the deduction conditions and limits applicable under Section 162(m) of the Code.

Dividend Equivalents. A participant will recognize as ordinary income the amount of cash and the fair market value of any common stock he or she receives on payment of the Dividend Equivalents. To the extent the Dividend Equivalents are paid in the form of other awards, the participant will recognize income as otherwise described herein. We generally will be entitled to a federal tax deduction equal to the amount of ordinary income the participant recognizes subject to the deduction conditions and limits applicable under Section 162(m) of the Code.

Limitation on Deductions. Section 162(m) of the Internal Revenue Code denies a federal income tax deduction for certain compensation in excess of \$1.0 million per year paid by a publicly held corporation to each of its “covered employees.” Prior to the enactment of the Tax Act, which was signed into law on December 22, 2017, a publicly corporation’s covered employees included its chief executive officer and three other most highly compensated executive officers (other than the chief financial officer), and certain “qualified performance-based compensation” was excluded from the \$1 million deduction limit. The Tax Act made certain changes to Section 162(m), effective for taxable years beginning after December 31, 2017, including, among others, expanding the definition of “covered employee” to include the chief financial officer and repealing the qualified performance-based compensation exception, subject to a transition rule for remuneration provided pursuant to a written binding contract in effect on November 2, 2017, and which was not modified in any material respect on or after that date. Our policy is to qualify compensation paid to our executive officers for deductibility for federal income tax purposes to the extent feasible. However, to retain highly skilled executives and remain competitive with other employers, our Compensation Committee may authorize compensation that would not be deductible under Section 162(m) of the Code or otherwise if it determines that such compensation is in the best interests of us and our shareholders. Compensation to certain employees resulting from vesting of awards in connection with a change in control or termination following a change in control also may be non-deductible under Internal Revenue Code Sections 4999 and 280G.

Other Tax Rules. The 2013 Plan is designed to enable our Compensation Committee to structure awards that will not be subject to Section 409A of the Code, which imposes certain restrictions and requirements on nonqualified deferred compensation. However, our Compensation Committee may grant awards that are subject to Section 409A of the Code. In that case, the terms of such 409A Award will be (a) subject to the deferral election requirements of Section 409A of the Code; and (b) may only be paid upon a separation from service, a set time, death, disability, a change in control or an unforeseeable emergency, each within the meaning of Section 409A of the Code. Our Compensation Committee shall not have the authority to accelerate or defer a 409A Award other than as permitted by Section 409A of the Code. Moreover, any payment on a separation from service of a “Specified Employee” (as defined in the 2013 Plan) will not be made until six months following the participant’s separation from service (or upon the participant’s death, if earlier) as required by Section 409A of the Code.

401(k) Plan

We provide a 401(k) Plan to all eligible employees as defined in the plan. Subject to annual limits set by the Internal Revenue Service, we match 100 percent of eligible employee contributions up to a maximum of three percent of an employee’s salary and vesting in our match is ratable over three years from an employee’s date of employment.

Rule 10b5-1 Plans

Certain of our executive officers have adopted written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or executive officer when entering into the Rule 10b5-1 plan, without further direction from such director or executive officer. The director or executive officer may amend or terminate the Rule 10b5-1 plan in specified circumstances.

Pension Benefits

We do not have any plan that provides for payments or other benefits at, following, or in connection with retirement.

Nonqualified Deferred Compensation

We do not have any defined contribution or other plan that provides for the deferral of compensation on a basis that is not tax-qualified.

POTENTIAL PAYMENTS UPON TERMINATION OR A CHANGE IN CONTROL

During fiscal 2018, none of our named executive officers had employment agreements or change in control agreements with us. However, to ensure that we will have the continued dedicated service of certain executives, including some of our named executive officers, notwithstanding the possibility, threat, or occurrence of a change in control, our stock option and RSU award agreements with our named executive officers contain change in control provisions. The Compensation Committee believes that the change in control provisions in our 2013 Plan and our stock option awards serve the best interests of our Company and our shareholders by ensuring that if a change in control is ever under consideration, our executives are able to perform their duties and responsibilities and advise the Board about the potential transaction in the best interests of shareholders, without being unduly influenced by the distracting uncertainty and risk associated with a change in control, such as fear of the economic consequences of losing their equity awards as a result of a change in control.

A “Change in Control” is defined in the 2013 Plan to mean generally the occurrence of any of the following events:

- (a) the accumulation in any number of related or unrelated transactions by any person of beneficial ownership (as such term is used in Rule 13d-3 promulgated under the Exchange Act) of more than 50 percent of the combined voting power of the Company’s voting stock; provided that for purposes of this subsection (a), a Change in Control will not be deemed to have occurred if the accumulation of more than 50 percent of the voting power of the Company’s voting stock results from any acquisition of voting stock (i) directly from the Company that is approved by the Incumbent Board (as defined in the 2013 Plan), (ii) by the Company, (iii) by any employee benefit plan (or related trust) sponsored or maintained by the Company or any affiliate, or (iv) by any person pursuant to a merger, consolidation, reorganization or other transaction (a “Business Combination”) that would not cause a Change in Control under subsections (b), (c) or (d) below;
- (b) consummation of a Business Combination, unless, immediately following that Business Combination, (i) all or substantially all of the persons who were the beneficial owners of the voting stock of the Company immediately prior to that Business Combination beneficially own, directly or indirectly, more than 50 percent of the then outstanding shares of common stock and more than 50 percent of the combined voting power of the then outstanding voting stock entitled to vote generally in the election of directors of the entity resulting from that Business Combination (including, without limitation, an entity that as a result of that Business Combination owns the Company or all or substantially all of the Company’s assets either directly or through one or more subsidiaries) in substantially the same proportions relative to each other as their ownership, immediately prior to that Business Combination, of the voting stock of the Company,
- (c) a sale or other disposition of all or substantially all of the assets of the Company, except pursuant to a Business Combination that would not cause a Change in Control under subsections (b) above or (d) below;
- (d) approval by the shareholders of a complete liquidation or dissolution of the Company, except pursuant to a Business Combination that would not cause a Change in Control under subsections (b) and (c) above;
- (e) the acquisition by any person, directly or indirectly, of the power to direct or cause the direction of the management and policies of the Company (i) through the ownership of securities which provide the holder with such power, excluding voting rights attendant with such securities, or (ii) by contract; provided that a Change in Control will not be deemed to have occurred if such power was acquired (x) directly from the Company in a transaction approved by the Incumbent Board, (y) by an employee benefit plan (or related trust) sponsored or maintained by the Company or any affiliate or (z) by any person pursuant to a Business Combination that would not cause a Change in Control under subsections (b), (c) or (d) above; or

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(f) During any period of two consecutive years, the Incumbent Board ceases to constitute a majority of the Board.

Notwithstanding the foregoing, a “Change in Control” does not include any accumulation of beneficial ownership or any Business Combination pursuant to which more than 50 percent of the beneficial ownership of the combined voting power of the Company’s voting stock is owned by (i) Randal J. Kirk, his spouse, his descendants and the spouses of his descendants, (ii) trusts and other entities established generally for the benefit of Randal J. Kirk, his spouse, his descendants and the spouses of his descendants, (iii) NRM VI Holdings I, LLC, NRM VII Holdings I, LLC, Third Security Staff 2001 LLC and any related funds, investors or entities, and/or (iv) any entities established by any of the foregoing.

Our stock option and RSU award agreements with our named executive officers provide that in the event a “Change in Control” occurs and no provision is made for the continuance, assumption or substitution of the option award by the Company or its successor in connection with a Change in Control, then the award will become exercisable in full, to the extent not exercisable previously, on the earlier of the control change date or the date the award is to be terminated in connection with the Change in Control, provided the executive has remained continuously employed by the Company or any affiliate from the grant date until such time.

In addition, our stock option and RSU award agreements with our named executive officers provide for the full vesting of the awards in the event of termination by reason of the named executive officer’s death or disability.

On April 1, 2019, the Company authorized management to enter into continuing employment agreements with certain of its executive officers, other than Mr. Kirk, that provide for certain severance rights upon termination “without cause” or resignation by the executive officer for “good reason.” Pursuant to the terms of these agreements, each executive officer will be entitled to receive (i) payment equivalent to 18 months of his or her base pay, less applicable withholding amounts, and (ii) the executive officer’s expected cost of COBRA premiums for continued medical coverage for up to 18 months. As a condition to receiving these severance benefits, the executive officer will be required to execute and deliver a release of claims within 60 days of the termination date.

POTENTIAL PAYMENTS UNDER 2013 PLAN

The following table shows the potential payments upon termination, a change in control of the Company, incapacity or death for the named executive officers based on agreements and plans in effect as of December 31, 2018. The amounts in this table are calculated assuming the triggering event occurred on December 31, 2018 and all executives were paid in a lump sum payment.

| | | Termination ⁽¹⁾ (\$) | Change in Control ⁽²⁾ (\$) | Incapacity ⁽³⁾ (\$) | Death ⁽⁴⁾ (\$) |
|-----------------|--------------------|------------------------------------|--|-----------------------------------|------------------------------|
| Randal Kirk | Accelerated Equity | — | — | — | — |
| | Benefit Plans | — | — | — | — |
| | Total | — | — | — | — |
| Rick Sterling | Accelerated Equity | — | 255,472 | 255,472 | 255,472 |
| | Benefit Plans | 49,519 | — | 336,000 | 1,545,000 |
| | Total | 49,519 | 255,472 | 591,472 | 1,800,472 |
| Donald Lehr | Accelerated Equity | — | 255,472 | 255,472 | 255,472 |
| | Benefit Plans | 49,593 | — | 336,000 | 1,545,000 |
| | Total | 49,593 | 255,472 | 591,472 | 1,800,472 |
| Nir Nimrodi | Accelerated Equity | — | 255,472 | 255,472 | 255,472 |
| | Benefit Plans | 49,519 | — | 336,000 | 1,545,000 |
| | Total | 49,519 | 255,472 | 591,472 | 1,800,472 |
| Helen Sabzevari | Accelerated Equity | — | 909,472 | 909,472 | 909,472 |
| | Benefit Plans | 48,076 | — | 336,000 | 1,545,000 |
| | Total | 48,076 | 909,472 | 1,245,472 | 2,454,472 |

- (1) Includes potential payouts for termination without cause, or voluntary resignation, or termination for cause. Includes accrued but unused vacation. If a named executive officer is terminated for “cause” all options, including vested options, are cancelled.
- (2) In the event of a change in control, as described above, unvested stock options and RSUs vest immediately. This column reflects the value of the accelerated vesting, which is calculated (i) for stock options by multiplying the number of shares subject to accelerated vesting under outstanding stock options by the difference between \$6.54 (which was the closing market price per share of our common stock on December 31, 2018, the last trading day of fiscal 2018) and the per share exercise price of the applicable accelerated stock option and (ii) for RSUs by multiplying the number of shares subject to accelerated vesting under outstanding RSUs by \$6.54. Currently all unvested stock options for our named executive officers have an exercise price greater than \$6.54 and therefore no payments would be deemed to be made upon the acceleration of stock options.
- (3) Includes benefits payable under long-term disability insurance. Long-term disability benefits are payable beginning on the 90th day of disability up to 42 months of disability dependent on age at disability. These benefits equal 60 percent of base salary, capped at \$8,000 per month. The values in the table above assume benefit payments for the maximum months paid dependent on the age of each executive as of December 31, 2018.
- (4) Includes benefits payable to the executive’s heirs pursuant to life insurance, which is generally two times base salary with a cap of \$545,000, with certain exceptions to the cap, and accidental death and disability insurance, which is two times base salary with a cap of \$1 million.

EQUITY COMPENSATION PLAN INFORMATION

The following table sets forth certain information as of December 31, 2018 with respect to securities authorized for issuance under our existing equity compensation plans, consisting of our 2008 Plan and the 2013 Plan, as more fully described above. Both of these equity compensation plans were adopted with the approval of our shareholders.

| Plan Category | Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights (a) | Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights (b) | Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in column (a)) (c) |
|--|--|--|--|
| Equity compensation plans approved by shareholders | 12,063,404 ⁽²⁾ | \$ 27.95 | 5,086,700 ⁽¹⁾ |
| Equity compensation plans not approved by shareholders | — | — | — |
| Total | 12,063,404 | — | 5,086,700 |

(1) On and after the effective date of the 2013 Plan, no new awards may be granted under the 2008 Plan. Our 2013 Plan, in addition to being available for future issuance upon exercise of stock options and vesting of RSUs that have been or may be granted after December 31, 2018, provides for the issuance of SARS, restricted stock awards, other stock-based awards, incentive awards and dividend equivalents.

(2) Includes 11,093,063 outstanding stock options and 970,341 outstanding RSUs.

CEO PAY RATIO

As required by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and Item 402(u) of Regulation S-K (“Item 402(u)”), we are providing the following information about the relationship between the annual total compensation of our employees and the annual total compensation of Randal Kirk, our Chief Executive Officer (our “CEO”). The pay ratio included in this information is a reasonable estimate calculated in a manner consistent with Item 402(u). Because Item 402(u) affords a large degree of flexibility in calculating the CEO pay ratio by allowing the use of reasonable estimates, assumptions and methodologies, the pay ratio disclosed by us below may not be comparable to pay ratio disclosures presented by other companies.

For 2018, our last completed fiscal year:

- the annual total compensation of our CEO was \$2,056,450; and
- the annual total compensation of our median employee (other than our CEO) was \$62,638.

Based on this information, for 2018, the ratio of the annual total compensation of our CEO to the median of the annual total compensation of all employees was 33 to 1.

In accordance with Item 402(u), we elected to use the same median employee identified in 2017 in our 2018 pay ratio calculation, as we believe that there has been no change in our employee population or employee compensation arrangements that we believe would result in a significant change to our pay ratio disclosure for 2018. As disclosed in our 2017 proxy statement, to identify the median of the annual total compensation of all our employees, as well as to determine the annual total compensation of the median employee, the methodology and the material assumptions, adjustments and estimates used were as follows:

Determination Date. We selected December 31, 2017 as the date from which to determine our total employee population and gather pay data.

Employee Population. As of December 31, 2017, according to internal payroll records, our total employee population, excluding our CEO, consisted of approximately 1,006 individuals working at our company or within our consolidated subsidiaries on either a full-time or part-time basis. Out of these approximate 1,006 individuals, 77% are located in North America, 14% are located in Europe and 8% are located in South America. As permitted by Item 402(u), we chose to exclude from the employee population 1 individual located in Argentina and 6 individuals located within the Cayman Islands, which represent all of our employees in those jurisdictions, given the small number of employees in each jurisdiction and the challenges associated with data gathering and assessment of the compensation elements. As a result, our employee population for purposes of our pay ratio calculation consisted of 999 individuals.

Methodology. To identify the median employee, a listing was prepared of our employee population as of December 31, 2017. We did not annualize the compensation of any permanent employees, employed either part-time or full-time, who were employed by us for less than the full fiscal year. We then compared the actual cash compensation received during 2017 for those employees, consisting of base salary amounts and annual incentive awards as reflected by internal payroll records. We identified our median employee using this compensation measure, which was consistently applied to all of our employees across the employee population. Using this methodology, we determined that the median employee was a full-time, salaried employee located in the United States.

Annual Total Compensation. With respect to the annual total compensation of the median employee, we identified and calculated the elements of such employee’s compensation for 2018 in accordance with the requirements of Item 402(c)(2)(x) of Regulation S-K. This calculation is the same calculation used for our named executive officers as set forth in the Summary Compensation Table earlier in this Proxy Statement. With respect to the annual total compensation of our CEO, we used the amount reported in the “Total” column of the Summary Compensation Table on page 62 of this Proxy Statement.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a description of transactions since January 1, 2018 to which we have been a party, in which the amount involved exceeded or will exceed \$120,000, and in which any of our directors, executive officers or beneficial owners of more than five percent of our voting securities, or affiliates or immediate family members of any of our directors, executive officers or beneficial owners of more than five percent of our voting securities, had or will have a direct or indirect material interest.

We have historically been owned, funded, and managed by Randal Kirk, our Chief Executive Officer, and affiliates of Mr. Kirk, for the purpose of developing our synthetic biotechnology. As a result, we have engaged in a variety of financial and operational transactions with Mr. Kirk and these affiliates. In accordance with the requirements of the SEC, we describe below all such transactions in which we have engaged since January 1, 2018.

We believe that each of these transactions was on terms no less favorable to us than terms we could have obtained from unaffiliated third parties. Moreover, all of these transactions have been approved by a majority of the independent and disinterested members of the Board. It is our intention to ensure that all future transactions, if any, between us and our officers, directors, principal shareholders and their affiliates or family members, are approved by the Audit Committee or a majority of the independent and disinterested members of the Board, and are on terms no less favorable to us than those that we could obtain from unaffiliated third parties.

Greenberg Traurig LLP

Mr. Alvarez is the Senior Chairman of the international law firm Greenberg Traurig. Greenberg Traurig provides legal services to us from time to time, for which it has received and may continue to receive customary fees. Greenberg Traurig received an aggregate of \$768,105 in fees in connection with 2018 legal services. As the Senior Chairman, Mr. Alvarez does not participate in such services and does not materially benefit from the engagement. As such, and in consideration of the fact that the amount received by Greenberg Traurig does not exceed five percent of Greenberg's Traurig's consolidated gross revenues for 2018, the Board has determined that this relationship is not material and that it does not impair Mr. Alvarez's independence.

Transactions with Third Security, LLC and Affiliates

Services Agreement

On October 30, 2015, the independent members of the Board approved a Services Agreement (the "Services Agreement"), to be entered into and effective as of November 1, 2015, between us and Third Security, LLC ("Third Security"). Mr. Kirk and shareholders affiliated with him, as of March 31, 2019, beneficially own approximately 42.2 percent of our voting stock. Mr. Kirk currently serves as the Senior Managing Director and Chief Executive Officer of Third Security and owns 100 percent of the equity interests in Third Security. Third Security is the manager to certain funds that own shares of our common stock and therefore may be deemed to have beneficial ownership in us of approximately 32.1 percent. The Services Agreement was unanimously approved by the Audit Committee and the independent members of the Board in accordance with our policy on related person transactions.

Pursuant to the terms of the Services Agreement, Third Security provides us with services necessary or appropriate to support us and Mr. Kirk in his role as Chief Executive Officer. Third Security provides a wide variety of resources to us at the direction of Mr. Kirk, including the efforts of professionals with significant experience in areas such as accounting, corporate finance, research and analysis, law, tax, due diligence support, complex transaction structuring and support, mergers and acquisitions, and strategic relationship development and opportunity sourcing. Third Security also provides executive assistant, administrative, and other support services for Mr. Kirk in his role as Chief Executive Officer. Additionally, Third Security provides such other

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general support services to us as directed by Mr. Kirk in such role. In exchange for the foregoing services, Third Security is entitled to a fee of \$800,000 per month to be paid in the form of fully-vested shares of our common stock. The shares of common stock are valued based on the volume weighted average of our common stock over the 30 day period ending on the 15th day of the calendar month during which the applicable services are provided.

The payments made by us under the Services Agreement constitute, in the aggregate, an award under the 2013 Plan and are subject to the terms of the 2013 Plan. If, based on the advice of counsel, we determine that we are unable to issue shares under the 2013 Plan after a period of 30 days, than the payment of any deficiency shall be made to Third Security in cash rather than in shares of our common stock. If Proposal 5 of this Proxy Statement, the proposal to approve the 2019 Plan, is approved by our shareholders, then payments made by us under the Services Agreement will cease to be made as awards under the 2013 Plan and will instead be made under the 2019 Plan. The Services Agreement had an initial term of one year, and may be extended only by agreement of the parties. An extension of the agreement requires, on behalf of us, unanimous approval of the independent members of the Board. The Services Agreement may be terminated at any time by us upon delivery of written notice to Third Security. Third Security may terminate the agreement upon 30 days prior written notice.

The independent members of our Board, with the recommendation of the Audit Committee, approved subsequent extensions of the Services Agreement through January 1, 2020.

For the year ended December 31, 2018, we issued 696,033 shares, with a value of \$8.3 million, to Third Security as payment for services provided pursuant to the Services Agreement.

Preferred Stock Equity Facility

Effective October 2017, we entered into a Preferred Stock Equity Facility (“Preferred Stock Facility”) with Kapital Joe, LLC, an affiliate of Third Security (“Third Security Affiliate”). Under the Preferred Stock Facility, we could, from time to time at our sole and exclusive option, issue and sell to the Third Security Affiliate, up to \$100 million of newly issued Series A Redeemable Preferred Stock (“Series A Preferred Stock”). In conjunction with our July 2018 registered underwritten public offering of convertible notes, the Preferred Stock Equity Facility was terminated. No shares of Series A Preferred Stock had been issued under the Preferred Stock Equity Facility.

Share Lending Agreement

Concurrently with our offering of convertible notes in July 2018, we entered into a share lending agreement (the “Share Lending Agreement”) with J.P. Morgan Securities LLC (the “Share Borrower”) pursuant to which we loaned and delivered 7,479,431 shares of our common stock (the “Borrowed Shares”) to the Share Borrower. The Share Lending Agreement will terminate, and the Borrowed Shares will be returned to us within five business days of such termination, upon (i) termination by the Share Borrower or (ii) the earliest to occur of (a) October 1, 2023 and (b) the date, if any, on which the Share Lending Agreement is either mutually terminated or terminated by one party upon a default by the other party. The Borrowed Shares were offered and sold to the public at a price of \$13.37 per share under a registered offering (the “Borrowed Shares Offering”). We did not receive any proceeds from the sale of the Borrowed Shares to the public. The Share Borrower or its affiliates received all the proceeds from the sale of the Borrowed Shares to the public. Affiliates of Third Security purchased all of the shares of common stock in the Borrowed Shares Offering.

Underwritten Public Offering

In January 2018, we completed an underwritten public offering of 6.9 million shares of our common stock for net proceeds of \$82.2 million, including 1 million shares of common stock purchased by affiliates of Third Security for gross proceeds of \$12.5 million.

Genopaver

Effective March 2013, we entered into an exclusive channel collaboration (“ECC”) with Genopaver LLC (“Genopaver”), a limited liability company formed for the purpose of entering into the ECC and developing and commercializing products identified through the ECC. Genopaver is an affiliate of Third Security, LLC. Upon execution of the ECC, we received a technology access fee of \$3 million as upfront consideration. We are reimbursed for research and development services as provided for in the ECC. We are entitled to a royalty on the gross profits of product sales from a product developed from the ECC.

Persea Bio

Effective December 2014, we entered into an ECC with Persea Bio, LLC (“Persea Bio”), a limited liability company formed for the purpose of entering into the ECC and developing and commercializing products identified through the ECC. Persea Bio is an affiliate of Third Security, LLC. Upon effectiveness of the ECC, we received a technology access fee of \$5 million as upfront consideration. We are reimbursed for research and development services as provided for in the ECC. We are entitled to a royalty on the gross profits of product sales from a product developed from the ECC.

Harvest Intrexon Enterprise Fund I LP

As a means to further the development of our business model, in June 2015, we entered into an agreement with Harvest Intrexon Enterprise Fund I LP (“Harvest”), an investment fund sponsored by Harvest Capital Strategies, LLC. Affiliates of Mr. Kirk have an approximate 20 percent ownership interest in Harvest. Harvest was established to invest in life science research and development start up opportunities that we offered to Harvest with exclusive rights of first-look and first negotiation. Based on this agreement, Harvest established six new collaboration entities, each of which entered into an ECC with us in a designated field. The terms of such ECCs were negotiated between us and Harvest. As consideration for providing exclusive rights of first-look and first negotiation for start-up opportunities, we received a portion of the management fee collected by the fund sponsor of Harvest. In September 2017, the commitment period for Harvest was terminated and, as a result, the agreement with Harvest terminated. The termination of the agreement had no effect on the existing collaborations with Harvest-controlled entities.

In September 2018, we, through our wholly owned subsidiary ActoBio, issued \$30 million of convertible promissory notes to Harvest, to acquire Harvest’s ownership in CRS Bio, Inc. (“CRS Bio”); Genten Therapeutics, Inc. (“Genten Therapeutics”); and Relieve Genetics, Inc. (“Relieve Genetics”) (collectively the “Harvest entities”). We also received \$15.5 million cash in the transaction from the acquisition of the Harvest entities. Following the transaction, we own 100 percent of the equity interests of the Harvest entities including the rights that had been previously licensed to the Harvest entities by us.

Transactions with ECC Parties, Joint Ventures and Majority-Owned Subsidiaries

ZIOPHARM

Pursuant to an ECC, a securities purchase agreement and a registration rights agreement, each dated in January 2011, we granted to ZIOPHARM a worldwide exclusive license to use certain specified patents and other intellectual property in the field of oncology as defined in the ECC. Pursuant to the securities purchase agreement, we agreed to purchase up to an additional \$50 million of common stock in conjunction with securities offerings that may be conducted by ZIOPHARM in the future, subject to certain conditions and limitations. Between February 2011 and February 2015, we purchased an aggregate of \$43.6 million of ZIOPHARM securities reducing our future obligation to purchase ZIOPHARM common stock to approximately \$6.4 million. The remaining \$6.4 million obligation was waived in conjunction with the ECC amendment discussed below. In conjunction with the original transactions in January 2011, Mr. Kirk joined the board of directors of ZIOPHARM.

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In January 2015, we and ZIOPHARM entered into a license agreement with The University of Texas System Board of Regents on behalf of The University of Texas M.D. Anderson Cancer Center (“MD Anderson”). Pursuant to the license agreement, we hold an exclusive license to certain technologies owned and licensed by MD Anderson, including technologies relating to novel chimeric antigen receptor (CAR) T-cell therapies. The license agreement also includes co-licenses and non-exclusive licenses to certain other related technologies. Among the license rights, we received exclusive sublicensed rights, through MD Anderson, for intellectual property developed at the University of Minnesota for the development of cellular therapies to prevent, diagnose and/or treat cancers. We expect to employ the licensed technologies, together with our existing suite of proprietary technologies, through our existing exclusive collaboration agreement with ZIOPHARM to pursue the development and commercialization of non-viral adoptive cellular therapies based on designer cytokines and CARs under control of RheoSwitch technology targeting both hematologic and solid tumor malignancies. In addition to the licenses, the license agreement transferred to us and ZIOPHARM certain existing programs of MD Anderson, including ongoing clinical and preclinical programs. In connection with this transfer, ZIOPHARM committed to funding between \$15 million and \$20 million for ongoing research at MD Anderson for three years. We will have certain rights to technologies developed through such research, as provided in the agreement.

In March 2015, we and ZIOPHARM entered into a Second Amendment, or the Amendment, to our first ECC discussed above. The Amendment modifies the scope of the parties’ collaboration and provides that we will pay to ZIOPHARM 50 percent of all payments we receive for upfronts, milestones and royalties under a license and collaboration agreement with ARES Trading (the “Merck Agreement”), a subsidiary of Merck KGaA, Darmstadt, Germany. The Amendment also reduced our aggregate commitment, described above, to purchase ZIOPHARM common stock from \$50.0 million to \$43.5 million, which commitment has been satisfied in full. In June 2015, we distributed 17,830,305 shares of ZIOPHARM common stock to our shareholders as a special stock dividend, representing all of the equity interests of ZIOPHARM held by us. Affiliates of Mr. Kirk received 8,223,632 shares of ZIOPHARM common stock as a result of this special stock dividend.

In September 2015, we entered into our second ECC with ZIOPHARM through which we granted to ZIOPHARM an exclusive license to use our proprietary technologies and other intellectual property to develop and commercialize novel biotherapeutics for the treatment of patients with graft-versus-host-disease. We received a technology access fee of \$10 million. In December 2017, we and ZIOPHARM mutually agreed to terminate this second ECC.

In June 2016, we amended each of our two existing ECCs with ZIOPHARM and as a result the rate of the royalty which we are entitled to receive on certain products commercialized pursuant to the ECCs was reduced from 50 percent to 20 percent. As consideration for execution of the ECC amendments, ZIOPHARM issued us 100,000 shares of ZIOPHARM’s Series 1 Preferred Stock valued at \$120 million. We returned all of the shares of ZIOPHARM Series 1 Preferred Stock in October 2018 pursuant to the ZIOPHARM License Agreement described below.

In October 2018, through Precigen, we entered into a license agreement with ZIOPHARM (the “ZIOPHARM License Agreement”) that terminated and replaced the terms of the original ECC, as amended. The ZIOPHARM License Agreement gives us development and commercialization control over certain products previously licensed to ZIOPHARM. We will pay ZIOPHARM royalties ranging from low-single digits to mid-single digits on the net sales derived from the sale of these products, up to \$50 million. We will also be entitled to receive from ZIOPHARM reimbursement of costs incurred to transition the necessary knowledge and materials for ZIOPHARM programs for a period of up to one year from the effective date. We also granted ZIOPHARM exclusive licenses to use certain of our intellectual property. In consideration of the licenses and other rights, ZIOPHARM will pay us an annual license fee of \$0.1 million and agreed to reimburse us \$1 million with respect to historical costs associated with products developed under the licensed Gorilla IL-12 program. ZIOPHARM will also make milestone payments totaling up to an aggregate of \$210 million, royalties ranging from low-single digits to high-single digits on the net sales of certain products, and 20 percent of any sublicensing income received by ZIOPHARM relating to the licensed products.

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As of March 31, 2019, Mr. Kirk, together with his affiliates (excluding us), no longer beneficially owned any shares of ZIOPHARM's common stock.

Merck Licensing Agreement

In March 2015, we signed the Merck Agreement with Ares Trading and ZIOPHARM through which the parties established a collaboration for the research and development and commercialization of certain products for the prophylactic, therapeutic, palliative or diagnostic use for cancer in humans. Pursuant to the Merck Agreement, we received a technology access fee of \$115 million as upfront consideration, of which \$57.5 million was paid to ZIOPHARM in accordance with the terms of the agreement. Upon the selection of the first two targets by Ares Trading we received \$10 million in equal quarterly installments over two years.

In December 2018, we entered into a Securities Purchase, Assignment and Assumption Agreement (the "Merck Purchase Agreement") with Ares Trading pursuant to which we reacquired Ares Trading's development and commercialization rights under the Merck Agreement. As consideration for the reacquisition of the Merck Agreement, we issued Ares Trading 20,640,119 shares of our common stock valued at \$140.4 million and a \$25 million convertible note convertible into shares of our common stock or under certain circumstances common stock or other equity securities of Precigen, and agreed to pay Ares Trading a royalty of 10 percent of the net sales derived from two products specified in the Merck Purchase Agreement.

Synthetic Biologics

Pursuant to an ECC, entered into in August 2012, we granted to Synthetic Biologics, Inc. ("Synthetic Biologics") a worldwide exclusive license to use certain specified patents and other intellectual property in connection with the research, development, use, importing, manufacture, sale and offer for sale of monoclonal antibody therapies for the treatment of eight specific target infectious disease indications. In conjunction with the collaboration, we are entitled to, at our election, purchase up to 19.99 percent of securities offerings that may be conducted by Synthetic Biologics in the future, subject to certain conditions and limitations. To date we have purchased 57,143 shares of Synthetic Biologics common stock with no purchases occurring from January 1, 2018 through March 31, 2019. We have also been granted the right to make purchases of Synthetic Biologics' common stock in the open market up to an additional 10 percent of Synthetic Biologics' common stock. To date, we have made no open market purchases of Synthetic Biologics' common stock.

In August 2015, we entered into another ECC with Synthetic Biologics through which we granted to Synthetic Biologics an exclusive license to use our proprietary technologies and other intellectual property to develop and commercialize novel biotherapeutics for the treatment of patients with phenylketonuria, or PKU. In consideration for this license, we received 26,786 shares of Synthetic Biologics' common stock with a value, at the time, of \$3 million. In November 2018, this ECC was mutually terminated by the parties.

Prior to 2015, pursuant to stock purchase agreements, an affiliate of Mr. Kirk, NRM VII Holdings, I, LLC, purchased shares of Synthetic Biologics' common stock. As of March 31, 2019, Mr. Kirk, together with his affiliates (excluding us), beneficially owned 103,572 shares, or 0.7 percent, of Synthetic Biologics' outstanding common stock.

The share amounts above reflect a 1-for-35 reverse stock split of Synthetic Biologics' common stock effective August 10, 2018.

Oragenics

Pursuant to an ECC and a stock issuance agreement, each dated in June 2012, we granted to Oragenics, Inc. ("Oragenics") an exclusive license to use our proprietary technologies and other intellectual property to develop and commercialize antibiotics for the treatment of infectious diseases in humans and companion animals. In

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conjunction with our first ECC with Oragenics, we are entitled to, at our election, purchase up to 30 percent of securities offerings that may be conducted by Oragenics in the future, subject to certain conditions and limitations. To date, we have purchased 110,000 shares of Oragenics' common stock, with no purchases occurring from January 1, 2017 through March 31, 2019. In November 2017, we amended this first ECC agreement with Oragenics, and as a result, we are entitled to up to \$35 million of potential one-time payments for certain regulatory milestones. We also receive reimbursement for services provided under the agreement and a percentage of profits derived from the sale of products developed from the ECC.

In June 2015, we entered into a separate ECC with Oragenics through which we granted to Oragenics an exclusive license to use our proprietary technologies and other intellectual property to pursue development of biotherapeutics for use in certain treatments of oral mucositis and other diseases and conditions of the oral cavity, throat, and esophagus. In consideration for this license, we received a \$5 million convertible promissory note. In December 2015, Oragenics converted this promissory note into 338,100 shares of Oragenics' common stock. In conjunction with this ECC, we agreed to purchase additional shares of Oragenics' common stock in a qualified financing, as defined in the agreement, during the 16 months following the effective date of this ECC in an amount up to the lesser of (i) the amount that is the proportion of such financing equal to our pro rata equity holdings in Oragenics as of the effective date and (ii) \$10 million subject to certain conditions. In June 2016, we purchased 226,142 shares of common stock pursuant to this commitment. Following an amendment in November 2017, we are entitled to up to \$37.5 million of potential one-time payments for (i) research and development services provided pursuant to this agreement and during the ECC and (ii) manufacturing services for our materials provided to Oragenics during the ECC.

Prior to 2015, pursuant to stock purchase agreements, an affiliate of Mr. Kirk, NRM VII Holdings, I, LLC, purchased shares of Oragenics' common stock. As of March 31, 2019, Mr. Kirk, together with his affiliates (excluding us), beneficially owned 100,056 shares, or 0.2 percent, of Oragenics' outstanding common stock.

In November 2017, concurrent with Oragenics closing a preferred stock private placement, we exchanged a promissory note, including accrued interest, purchased from Oragenics in May 2017 and receivables due from Oragenics totaling \$3.4 million for Oragenics Series C preferred stock ("Series C Preferred Stock"). The Series C Preferred Stock is non-voting and non-convertible and is redeemable in whole or part at any time by Oragenics in cash. The Series C Preferred Stock accrues an annual 12 percent dividend payable in additional Series C Preferred Stock through May 10, 2019, and after such date, the annual dividend increases to 20 percent. Additionally, and as discussed above, concurrent with the closing of the private placement, we and Oragenics amended certain future payment terms under the ECC agreements. As of December 31, 2018 and 2017, based on the most recent financial information available on Oragenics, we concluded that there was no value to our investment in Oragenics preferred stock.

The share amounts above reflect a 1-for-10 reverse stock split of Oragenics' common stock effective January 19, 2018.

Fibrocell Science

Pursuant to an ECC, a stock issuance agreement and a registration rights agreement, each dated in October 2012, we granted to Fibrocell Science, Inc. ("Fibrocell") an exclusive license to our technology platform to develop and commercialize genetically modified and non-genetically modified autologous fibroblasts and autologous dermal cells in the United States. Upon execution of the ECC, we received a technology access fee of 87,835 shares of Fibrocell's common stock valued at \$7.6 million as upfront consideration. We receive reimbursement payments for (1) research and development services provided pursuant to the agreement and (2) manufacturing services for our materials provided to Fibrocell during the agreement. On a quarterly basis, Fibrocell will pay us royalties of seven percent of net sales up to \$25 million and 14 percent of net sales above \$25 million on each product developed from the ECC, as defined in the agreement. If Fibrocell uses our technology platform to improve the production of a current or new Fibrocell product not developed from the

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ECC, Fibrocell will pay us quarterly royalties equal to 33 percent of the cost of goods sold savings generated by the improvement, as defined in the agreement.

Effective June 2013, we entered into an amendment to our ECC with Fibrocell. The amendment expands the ECC to include potential treatments based on engineered autologous fibroblast cells for the localized treatment of autoimmune and inflammatory disorders including morphea (localized scleroderma), cutaneous eosinophilias and moderate to severe psoriasis.

In July 2015, we and certain affiliates of Mr. Kirk acquired an aggregate amount of 65,066 shares of Fibrocell common stock at a price of \$87.00 per share.

In December 2015, we entered into our second ECC with Fibrocell through which we granted to Fibrocell an exclusive license to use our proprietary technologies and other intellectual property to develop and commercialize genetically-modified fibroblasts to treat chronic inflammatory and degenerative diseases of the joint, including arthritis and related conditions. We received a technology access fee of \$10 million.

In September 2016, we and certain affiliates of Mr. Kirk invested the aggregate amount of \$6.8 million in convertible debt securities. Such securities are convertible into common shares of Fibrocell at \$17.04375 per share. Additionally, in conjunction with the purchase of the convertible debt of Fibrocell, we and certain affiliates of Mr. Kirk received warrants to purchase 450,835 shares of Fibrocell common stock. Without first giving Fibrocell a notice of at least 61 days, the convertible debt securities and the warrants to purchase common stock may not be converted or exercised, as the case may be.

In March 2017, we and certain affiliates of Mr. Kirk acquired an aggregate amount of 3,016 shares of Series A convertible preferred stock of Fibrocell for an aggregate amount of \$3.0 million. Such preferred stock is convertible into common shares of Fibrocell at a price of \$11.6369 per share. Additionally, in conjunction with the purchase of the preferred stock of Fibrocell, we and certain affiliates of Mr. Kirk received warrants to purchase 259,176 shares of Fibrocell common stock. Without first giving Fibrocell a notice of at least 61 days, the Series A convertible preferred stock and the warrants to purchase common stock may not be converted or exercised, as the case may be.

An affiliate of Mr. Kirk, Third Security, has held two seats on Fibrocell's board of directors since October 2012. Pursuant to securities purchase agreements and through open market purchases, affiliates of Mr. Kirk have acquired shares of Fibrocell common stock, including the shares acquired in July 2015. As of March 31, 2019, Mr. Kirk, together with his affiliates (excluding us), beneficially owned 1,226,766 shares, or 12.6 percent, of Fibrocell's outstanding common stock.

The share amounts and conversion prices per share above reflect a 1-for-5 reverse stock split of Fibrocell's common stock effective May 25, 2018.

S & I Ophthalmic

In September 2013, we entered into an ECC with S & I Ophthalmic, LLC ("S & I Ophthalmic"), a joint venture between us and Sun Pharmaceutical Industries, Inc., an indirect subsidiary of Sun Pharmaceutical Industries Ltd., an international specialty pharmaceutical company focused on chronic diseases. In December 2017, the S & I Ophthalmic board of managers agreed to dissolve the joint venture and terminate the ECC with us. Upon the dissolution in January 2018, we received \$2.6 million, which represents our portion of S & I Ophthalmic's remaining cash after all liabilities were settled.

OvaScience

In December 2013, we and OvaScience, Inc. ("OvaScience") formed a joint venture, OvaXon, LLC ("OvaXon"). Additionally, we entered into separate ECC agreements with OvaXon and OvaScience. In March

2018, we and OvaScience agreed to terminate the ECC agreement with OvaScience. We and Millendo Therapeutics, Inc., a company that subsequently acquired OvaScience, are in discussions regarding the future of the OvaXon joint venture and the related ECC agreement.

Intrexon Energy Partners

In March 2014, we and certain investors (the “IEP Investors”), including an affiliate of Mr. Kirk, NRM VII Holdings I, LLC, entered into a Limited Liability Company Agreement which governs the affairs and conduct of business of Intrexon Energy Partners, LLC (“Intrexon Energy Partners”), a joint venture formed to optimize and scale-up our gas-to-liquid bioconversion platform for the production of certain fuels and lubricants. We also entered into an ECC with Intrexon Energy Partners providing exclusive rights to our technology for the use in bioconversion, as a result of which we received a technology access fee of \$25 million while retaining a 50 percent membership interest in Intrexon Energy Partners. The IEP Investors made initial capital contributions, totaling \$25 million in the aggregate, in exchange for pro rata membership interests in Intrexon Energy Partners totaling 50 percent. We committed to make capital contributions of up to \$25 million, and the IEP Investors, as a group and pro rata in accordance with their respective membership interests in Intrexon Energy Partners, have committed to make additional capital contributions of up to \$25 million, at the request of the Intrexon Energy Partners Board, and subject to certain limitations. Intrexon Energy Partners is governed by the Intrexon Energy Partners Board, which has five members. Two members of the Intrexon Energy Partners Board are designated by us and three members of the Intrexon Energy Partners Board are designated by a majority of the IEP Investors. We and the IEP Investors have the right, but not the obligation, to make additional capital contributions above these limits when and if solicited by the Intrexon Energy Partners Board.

Any investor who purchased at least \$10.0 million of our common stock in the private placement related to Intrexon Energy Partners will have the right to require us to register such shares of our common stock on a registration statement on Form S-3, if available for use.

In December 2017, we purchased certain property and equipment comprising the pilot plant production facility for its energy programs for \$2.8 million from Intrexon Energy Partners. We intend to use the pilot plant to support the collaborations with Intrexon Energy Partners and Intrexon Energy Partners II and our own research programs.

Histogenics

In September 2014, we entered into an ECC with Histogenics Corporation (“Histogenics”) and received a \$10 million convertible promissory note as upfront consideration. Upon the closing of Histogenics’ IPO on December 7, 2014, the note, as well as accrued interest, was converted to Histogenics common stock. Additionally, we purchased 1,772,364 shares of Histogenics common stock at \$11.00 per share in the Histogenics IPO. In December 2018, the ECC was terminated and we subsequently sold all of our shares in Histogenics in January 2019.

AquaBounty

In June 2015, we purchased 424,268 shares of AquaBounty Technologies, Inc., (“AquaBounty”) common stock with an agreed value, at the time, of \$3 million increasing our ownership to approximately 63 percent. In February 2016, we and AquaBounty entered into a promissory note whereby AquaBounty could draw up to \$10 million. The note bore interest at 10 percent and had a maturity date of March 2017 and the outstanding principal and interest amounts could be converted into AquaBounty common stock at our election. AquaBounty borrowed \$10 million from us under this promissory note at various times in 2016. In December 2016, the principal balance of the outstanding promissory note and related accrued interest of approximately \$10.4 million was converted into 1,212,910 shares of AquaBounty common stock. In January 2017, we invested \$25 million in AquaBounty through an equity purchase and subsequently, we distributed 1,776,557 of our AquaBounty shares

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to our shareholders. Affiliates of Mr. Kirk received 930,530 shares of AquaBounty common stock as a result of the special stock dividend. As of March 31, 2019, Mr. Kirk, together with his affiliates (excluding us), beneficially owned 837,554 shares, or 4.5 percent of AquaBounty's common stock.

In January 2018, AquaBounty raised \$10.6 million in net proceeds through an underwritten public offering, in which we participated by investing \$5 million. In October 2018, AquaBounty, and certain holders of warrants to acquire common shares at a per share price of \$3.25, entered into a Warrant Exercise Agreement pursuant to which such holders, including us, agreed to exercise their warrants in exchange for a reduction in the exercise price to \$2.00 per share. We invested \$3.1 million pursuant to our exercise of the warrants. In March 2019, AquaBounty raised \$7.5 million in gross proceeds through an underwritten public offering, in which we did not participate. As a result of this transaction our ownership decreased, and as of March 31, 2019, we own 8,239,199 shares, or approximately 44.1 percent, of AquaBounty's outstanding common stock.

Thrive Agrobotics, Inc.

In September 2015, we entered into an ECC with Thrive Agrobotics Inc. ("Thrive Agrobotics"), an affiliate of Harvest. Thrive Agrobotics was formed for the purpose of entering into the ECC and developing and commercializing products to improve the overall growth and feed efficiency of piglets. Upon execution of the ECC, we received a technology access fee in the form of equity in Thrive Agrobotics valued, at the time, at approximately \$1.667 million. We are reimbursed for research and development services provided pursuant to the ECC. We may also receive additional payments if certain development and commercialization milestones are achieved and will receive royalty payments based on a percentage of quarterly gross profits of product sales developed under the ECC. As of March 31, 2019, we own 25 percent of Thrive Agrobotics' common stock.

Intrexon Energy Partners II

In December 2015, we and certain investors (the "IEP II Investors"), including Harvest, entered into a Limited Liability Company Agreement which governs the affairs and conduct of business of Intrexon Energy Partners II, LLC ("Intrexon Energy Partners II"), a joint venture formed to utilize our natural gas bioconversion platform for the production of 1,4-butanediol, an industrial chemical intermediate used to manufacture spandex, polyurethane, plastics, and polyester. We also entered into an ECC with Intrexon Energy Partners II providing exclusive rights to our technology for the use in the field, as a result of which we received a technology access fee of \$18 million while retaining a 50 percent membership interest in Intrexon Energy Partners II. The IEP II Investors made initial capital contributions, totaling \$18 million in the aggregate, in exchange for pro rata membership interests in Intrexon Energy Partners II totaling 50 percent. In December 2015, the owners of Intrexon Energy Partners II made a capital contribution of \$4 million, half of which was paid by us. We committed to make capital contributions of up to \$10 million, and the IEP II Investors, as a group and pro rata in accordance with their respective membership interests in Intrexon Energy Partners, have committed to make additional capital contributions of up to \$10 million, at the request of the Intrexon Energy Partners II board of managers, or the Intrexon Energy Partners II Board, and subject to certain limitations. Intrexon Energy Partners II is governed by the Intrexon Energy Partners II Board, which has five members. One member of the Intrexon Energy Partners II Board is designated by us and four members of the Intrexon Energy Partners II Board are designated by a majority of the IEP II Investors. We and the IEP Investors II have the right, but not the obligation, to make additional capital contributions above these limits when and if solicited by the Intrexon Energy Partners II Board.

Exotech Bio, Inc.

In March 2016, we entered into an ECC with Exotech Bio, Inc. ("Exotech Bio"), an affiliate of Harvest. Exotech Bio was formed for the purpose of entering into the ECC and developing and commercializing products using exosomes carrying a RNA payload designed to kill, suppress, or render immune-visible a cancer cell. Upon execution of the ECC, we received a technology access fee in the form of equity in Exotech Bio valued, at the

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time, at \$5 million. In June 2018, we and Exotech Bio amended the ECC, which resulted in the expansion of the defined field of use and an increase of our ownership in Exotech Bio to 49 percent. The amendment also eliminated potential future milestone payments and royalties for which we were previously entitled. We will be reimbursed for research and development services provided pursuant to the ECC. As of March 31, 2019, we own 49 percent of Exotech Bio's common stock.

Relieve Genetics, Inc.

In March 2016, we entered into an ECC with Relieve Genetics, Inc., an affiliate of Harvest at the time. Relieve Genetics was formed for the purpose of entering into the ECC and developing and commercializing products using a viral vector expressing interleukin-10 for the treatment of chronic neuropathic pain resultant from cancer in humans. Upon execution of the ECC, we received a technology access fee in the form of equity in Relieve Genetics valued, at the time, at approximately \$4.3 million. We received reimbursement payments for research and development services provided pursuant to the ECC. In September 2018, we completed an asset acquisition with Harvest, resulting in our ownership of 100 percent of the equity interests of Relieve Genetics including all rights under the ECC.

Intrexon T1D Partners, LLC

In March 2016, we and certain investors (the "T1D Investors"), including affiliates of Mr. Kirk, entered into a Limited Liability Company Agreement which governs the affairs and conduct of business of Intrexon T1D Partners, LLC ("Intrexon T1D"), a joint venture formed to utilize our proprietary actobiotics platform to develop and commercialize products to treat Type 1 Diabetes. We also entered into an ECC with Intrexon T1D Partners providing exclusive rights to our technology, as a result of which we received a technology access fee of \$10 million. We received reimbursement payments for research and development services provided pursuant to the ECC. In November 2018, we completed an asset acquisition with the T1D Investors, resulting in our ownership of 100 percent of the equity interests of Intrexon T1D Partners including all rights under the ECC.

AD Skincare, Inc.

In June 2016, we entered into an ECC with AD Skincare, Inc. ("AD Skincare"), an affiliate of Harvest. AD Skincare was formed for the purpose of entering into the ECC and developing an advanced topical delivery system to improve the efficacy of biologically active ingredients aimed at improving signs of aging human skin. Upon execution of the ECC, we received a technology access fee in the form of equity in AD Skincare valued at \$4.3 million as upfront consideration. We are also entitled to up to \$2 million of potential payments for substantive and non-substantive development milestones for each product developed under the ECC, as well as up to \$17 million in one-time commercial milestones. We receive reimbursement payments for research and development services provided pursuant to the ECC. As of March 31, 2019, we own 25 percent of AD Skincare's common stock.

CRS Bio, Inc.

In September 2016, we entered into an ECC with CRS Bio, Inc., an affiliate of Harvest at the time. CRS Bio was formed for the purpose of entering into the ECC and developing and commercializing products through targeted delivery of antibodies for treatment of chronic rhinosinusitis with and without nasal polyps, by utilizing our technology to block inflammatory mediators in the nasal passage, leading to improved breathing and, importantly, patients' quality of life. Upon execution of the ECC, we received a technology access fee in the form of equity in CRS Bio valued at \$2.1 million. We received reimbursement payments for research and development services provided pursuant to the ECC. In September 2018, we completed an asset acquisition with Harvest, resulting in our ownership of 100 percent of the equity interests of CRS Bio including all rights under the ECC.

Gentien Therapeutics, Inc.

In September 2016, we entered into an ECC with Gentien Therapeutics, Inc., an affiliate of Harvest at the time. Gentien Therapeutics was formed for the purpose of entering into the ECC and developing and commercializing products using our technology for expression of gluten peptides, alone or in combination with immunomodulatory cytokines, to reestablish immune tolerance for patients with celiac disease. Upon execution of the ECC, we received a technology access fee in the form of a \$1.5 million cash payment and equity in Gentien Therapeutics valued at \$3 million as upfront consideration. We received reimbursement payments for research and development services provided pursuant to the ECC. In September 2018, we completed an asset acquisition with Harvest, resulting in our ownership of 100 percent of the equity interests of Gentien Therapeutics including all rights under the ECC.

Policies and Procedures for Related Person Transactions

Our Board has adopted a written related policy with respect to related person transactions. This policy governs the review, approval or ratification of covered related person transactions. The Audit Committee of our Board manages this policy.

For purposes of this policy, a “related person transaction” is a transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which we (or any of our subsidiaries) were, are or will be a participant, and the amount involved exceeds \$120,000 and in which any related person had, has or will have a direct or indirect interest. For purposes of determining whether a transaction is a related person transaction, the Audit Committee relies upon Item 404 of Regulation S-K, promulgated under the Exchange Act.

The policy generally provides that we may enter into a related person transaction only if:

- the Audit Committee pre-approves such transaction in accordance with the guidelines set forth in the policy,
- the transaction is on terms comparable to those that could be obtained in arm’s length dealings with an unrelated third party and the Audit Committee (or the chairperson of the Audit Committee) approves or ratifies such transaction in accordance with the guidelines set forth in the policy,
- the transaction is approved by the disinterested members of the Board, or
- the transaction involves compensation approved by the Compensation Committee of the Board.

In the event a related person transaction is not pre-approved by the Audit Committee and our management determines to recommend such related person transaction to the Audit Committee, such transaction must be reviewed by the Audit Committee. After review, the Audit Committee will approve or disapprove such transaction. When our Chief Legal Officer, in consultation with our Chief Executive Officer or our Chief Financial Officer, determines that it is not practicable or desirable for us to wait until the next Audit Committee meeting, the chairperson of the Audit Committee possesses delegated authority to act on behalf of the Audit Committee. The Audit Committee (or the chairperson of the Audit Committee) may approve only those related person transactions that are in, or not inconsistent with, our best interests and the best interests of our shareholders, as the Audit Committee (or the chairperson of the Audit Committee) determines in good faith.

The Audit Committee has determined that certain types of related person transactions are deemed to be pre-approved by the Audit Committee. Our related person transaction policy provides that the following transactions, even if the amount exceeds \$120,000 in the aggregate, are considered to be pre-approved by the Audit Committee:

- any employment of certain named executive officers that would be publicly disclosed;
- director compensation that would be publicly disclosed;

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- transactions with other companies where the related person's only relationship is as a director or owner of less than 10 percent of said company (other than a general partnership), if the aggregate amount involved does not exceed the greater of \$200,000 or five percent of that company's consolidated gross revenues;
- transactions where all shareholders receive proportional benefits;
- transactions involving competitive bids;
- transactions with a related person involving the rendering of services at rates or charges fixed in conformity with law or governmental authority; and
- transactions with a related person involving services as a bank depository of funds, transfer agent, registrar, trustee under a trust indenture or similar services.

In addition, the Audit Committee will review the policy at least annually and recommend amendments to the policy to the Board from time to time.

The policy provides that all related person transactions will be disclosed to the Audit Committee, and all material related person transactions will be disclosed to the Board. Additionally, all related person transactions requiring public disclosure will be properly disclosed, as applicable, on our various public filings.

The Audit Committee will review all relevant information available to it about the related person transaction. The policy provides that the Audit Committee may approve or ratify the related person transaction only if the Audit Committee determines that, under all of the circumstances, the transaction is in, or is not inconsistent with, our best interests. The policy provides that the Audit Committee may, in its sole discretion, impose such conditions as it deems appropriate on us or the related person in connection with approval of the related person transaction.

CERTAIN MATTERS RELATING TO PROXY MATERIALS AND ANNUAL REPORTS

Electronic Access of Proxy Materials and Annual Reports

Our Proxy Statement, including the accompanying notice and form of proxy, and 2018 Annual Report are available at <https://materials.proxyvote.com/default.aspx?ticker=46122T>. **A free paper copy of any of these documents may be requested by contacting the Corporate Secretary in writing at Intrexon Corporation, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876.**

“Householding” of Proxy Materials and Annual Reports for Record Owners

The SEC rules permit us, with your permission, to deliver a single proxy statement and annual report to any household at which two or more shareholders of record reside at the same address. Each shareholder will continue to receive a separate proxy card. This procedure, known as “householding,” reduces the volume of duplicate information you receive and reduces our expenses. Shareholders of record voting by mail can choose this option by marking the appropriate box on the proxy card included with this Proxy Statement. Shareholders of record voting via telephone or over the internet can choose this option by following the instructions provided by telephone or over the internet, as applicable. Once given, a shareholder’s consent will remain in effect until he or she revokes it by notifying our Corporate Secretary as described above. If you revoke your consent, we will begin sending you individual copies of future mailings of these documents within 30 days after we receive your revocation notice. Shareholders of record who elect to participate in householding may also request a separate copy of future proxy statements and annual reports by writing to the Corporate Secretary at Intrexon Corporation, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876.

Separate Copies for Beneficial Owners

Institutions that hold shares in street name for two or more beneficial owners with the same address are permitted to deliver a single proxy statement and annual report to that address. Any such beneficial owner can request a separate copy of this Proxy Statement or the 2018 Annual Report by contacting our Corporate Secretary as described below. Beneficial owners with the same address who receive more than one Proxy Statement and 2018 Annual Report may request delivery of a single Proxy Statement and 2018 Annual Report by contacting the Corporate Secretary in writing at Intrexon Corporation, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876.

OTHER MATTERS

The Board is not aware of any other matters to be presented for action at the Annual Meeting other than as set forth in this Proxy Statement. However, if other matters properly come before the Annual Meeting, or any adjournment or postponement thereof, the person or persons voting the proxies will vote them in accordance with their best judgment.

By Order of the Board of Directors

DONALD P. LEHR

Chief Legal Officer and Corporate Secretary

Germantown, Maryland
April 30, 2019

Annex A

**INTREXON CORPORATION 2019 INCENTIVE PLAN
FOR NON-EMPLOYEE SERVICE PROVIDERS**

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**ARTICLE I.
DEFINITIONS**

1.01 409A Award

409A Award means an Award that is intended to be subject to Section 409A of the Code.

1.02 Affiliate

Affiliate means any entity that is part of a controlled group of corporations or is under common control with the Company within the meaning of Code Sections 1563(a), 414(b) or 414(c), except that, in making any such determination, fifty percent (50%) shall be substituted for eighty percent (80%) under such Code Sections and the related regulations.

1.03 Agreement

Agreement means a written or electronic agreement (including any amendment or supplement thereto) between the Company and a Participant specifying the terms and conditions of an Award granted to such Participant.

1.04 Award

Award means an Option, SAR, Restricted Stock Award, Restricted Stock Unit, Incentive Award, Other Stock-Based Award, Dividend Equivalent or Cash Award granted under this Plan.

1.05 Board

Board means the Board of Directors of the Company.

1.06 Cash Award

Cash Award means an Award stated with reference to a specified dollar amount which, subject to such terms and conditions as may be prescribed by the Committee, entitles the Participant to receive cash from the Company or an Affiliate.

1.07 Cause

Cause means "Cause" as such term is defined in any service agreement between the Company or any Affiliate and the Participant except as otherwise determined by the Committee and set forth in the applicable Agreement. If no service agreement exists or if such service agreement does not contain any such definition, except as otherwise determined by the Committee and set forth in the applicable Agreement, "Cause" means (i) the Participant's willful and continued failure to comply with the lawful directives of the Board or any supervisory personnel of the Participant; (ii) any criminal act or act of dishonesty or willful misconduct by the Participant that has a material adverse effect on the property, operations, business or reputation of the Company or any Affiliate (willful for purposes of this definition, shall mean done, or omitted to be done, by the Participant in bad faith and without reasonable belief that the Participant's action or omission was in the best interest of the Company or any Affiliate); (iii) the material breach by the Participant of the terms of any confidentiality, non-competition, non-solicitation or other agreement that the Participant has with the Company or any Affiliate or of any duty the Participant owes the Company or any Affiliate, (iv) acts by the Participant of willful malfeasance or gross negligence in a matter of material importance to the Company or any Affiliate, (v) any act of fraud, embezzlement, theft, misappropriation or misuse by the Participant of the funds or property of the Company or any Affiliate, (vi) any falsification by the Participant of any record or report in connection with the

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Participant's duties and obligations to the Company or any Affiliate, (vii) the Participant's sexual harassment of any service providers of the Company or any Affiliate, (viii) the breach by the Participant of any fiduciary duty against the Company or any Affiliate, (ix) the Participant being indicted for a felony that has a material adverse effect on the property, operations, business or reputation of the Company or any Affiliate or being convicted of any other felony or plea of guilty or nolo contendere to any other felony or (x) any other action that may damage the image of the Company's or an Affiliate's business or their or its standing in the industry, including but not limited to the possession, use or sale of illegal drugs, the abuse of alcohol or prescribed medication, or any other act or omission which the Company or an Affiliate considers to be a violation of Federal, state or local law or regulations other than a simple traffic violation. For purposes of the Plan, other than where the definition of Cause is determined under any service agreement between the Company or any Affiliate and the Participant, in which case such service agreement shall control, in no event shall any termination of service be deemed for Cause unless the Company's Chief Executive Officer concludes that the situation warrants a determination that the Participant's service terminated for Cause; in the case of the Chief Executive Officer or any member of the Board, any determination that the Chief Executive Officer's employment or the Board member's service terminated for Cause shall be made by the Board acting without the Chief Executive Officer or the Board member, as applicable.

1.08 Change in Control

Change in Control means the occurrence of any of the following events except as otherwise determined by the Committee and set forth in the applicable Agreement:

(a) The accumulation in any number of related or unrelated transactions by any Person of beneficial ownership (as such term is used in Rule 13d-3 promulgated under the Exchange Act) of more than fifty percent (50%) of the combined voting power of the Company's voting stock; provided that for purposes of this subsection (a), a Change in Control will not be deemed to have occurred if the accumulation of more than fifty percent (50%) of the voting power of the Company's voting stock results from any acquisition of voting stock (i) directly from the Company that is approved by the Incumbent Board, (ii) by the Company, (iii) by any employee benefit plan (or related trust) sponsored or maintained by the Company or any Affiliate, or (iv) by any Person pursuant to a merger, consolidation, reorganization or other transaction (a "Business Combination") that would not cause a Change in Control under subsections (b), (c) or (d) below; or

(b) Consummation of a Business Combination, unless, immediately following that Business Combination, (i) all or substantially all of the Persons who were the beneficial owners of the voting stock of the Company immediately prior to that Business Combination beneficially own, directly or indirectly, more than fifty percent (50%) of the then outstanding shares of common stock and more than fifty percent (50%) of the combined voting power of the then outstanding voting stock entitled to vote generally in the election of directors of the entity resulting from that Business Combination (including, without limitation, an entity that as a result of that Business Combination owns the Company or all or substantially all of the Company's assets either directly or through one or more subsidiaries) in substantially the same proportions relative to each other as their ownership, immediately prior to that Business Combination, of the voting stock of the Company, or

(c) A sale or other disposition of all or substantially all of the assets of the Company, except pursuant to a Business Combination that would not cause a Change in Control under subsections (b) above or (d) below; or

(d) Approval by the shareholders of the Company of a complete liquidation or dissolution of the Company, except pursuant to a Business Combination that would not cause a Change in Control under subsections (b) and (c) above; or

(e) The acquisition by any Person, directly or indirectly, of the power to direct or cause the direction of the management and policies of the Company (i) through the ownership of securities which provide the holder

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with such power, excluding voting rights attendant with such securities, or (ii) by contract; provided that a Change in Control will not be deemed to have occurred if such power was acquired (x) directly from the Company in a transaction approved by the Incumbent Board, (y) by an employee benefit plan (or related trust) sponsored or maintained by the Company or any Affiliate or (z) by any person pursuant to a Business Combination that would not cause a Change in Control under subsections (b), (c) or (d) above; or

(f) During any period of two consecutive years, the Incumbent Board ceases to constitute a majority of the Board.

Notwithstanding the foregoing, a Change in Control shall not include any accumulation of beneficial ownership or any Business Combination pursuant to which more than fifty percent (50%) of the beneficial ownership of the combined voting power of the Company's voting stock is owned by (i) Randal J. Kirk, his spouse, his descendants and the spouses of his descendants, (ii) trusts and other entities established generally for the benefit of Randal J. Kirk, his spouse, his descendants and the spouses of his descendants, (iii) NEWVA Capital Partners, LP, New River Management IV, LP., New River Management V, LP, Kirkfield, L.L.C., RJK, L.L.C., Third Security Staff 2001 LLC and any related funds, investors or entities, and/or (iv) any entities established by any of the foregoing.

Notwithstanding the foregoing, a Change in Control shall only be deemed to have occurred with respect to a Participant in connection with the time or form of payment of the Participant's 409A Award (or as otherwise required for the 409A Award to be in compliance with Section 409A of the Code) if the Change in Control otherwise constitutes a change in the ownership or effective control of the Company, or in the ownership of a substantial portion of the assets of the Company, within the meaning of Section 409A of the Code (otherwise, with respect to vesting of the 409A Award and any other terms of the 409A Award that do not require a Change in Control to comply with its meaning under Section 409A of the Code for the 409A Award to be in compliance with Section 409A of the Code, Change in Control shall have the same meaning as described above).

1.09 Code

Code means the Internal Revenue Code of 1986 and any amendments thereto.

1.10 Committee

Committee means the Compensation Committee of the Board or such other Committee as the Board may appoint from time to time to administer the Plan, or the Board itself if no Compensation Committee or other appointed Committee exists. If such Compensation Committee or other Committee exists, if and to the extent deemed necessary by the Board, such Committee shall consist of two or more directors, all of whom are (i) "non-employee directors" within the meaning of Rule 16b-3 under the Exchange Act and (ii) independent directors under the rules of the principal stock exchange on which the Company's securities are then traded.

1.11 Common Stock

Common Stock means the common stock of the Company, no par value per share, or such other class or kind of shares or other securities resulting from the application of Article XVI, as applicable.

1.12 Company

Company means Intrexon Corporation, a Virginia corporation, and any successor thereto.

1.13 Control Change Date

Control Change Date means the date on which a Change in Control occurs. If a Change in Control occurs on account of a series of transactions, the "Control Change Date" is the date of the last of such transactions.

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1.14 Corresponding SAR

Corresponding SAR means a SAR that is granted in relation to a particular Option and that can be exercised only upon the surrender to the Company, unexercised, of that portion of the Option to which the SAR relates.

1.15 Disability

Disability means any physical or mental condition that would qualify the Participant for a disability under any long-term disability plan maintained by the Company or any Affiliate that is applicable to such Participant, except as otherwise determined by the Committee and set forth in the applicable Agreement. Notwithstanding the foregoing, however, to the extent necessary for any 409A Award to be in compliance with Section 409A of the Code, Disability, with respect to the time or form of payment of a Participant's 409A Award (or as otherwise required for the 409A Award to be in compliance with Section 409A of the Code), means the Participant is Disabled within the meaning of Section 409A of the Code.

1.16 Dividend Equivalent

Dividend Equivalent means the right, granted under the Plan, to receive cash, shares of Common Stock, other Awards or other property equal in value to all or a specified portion of dividends paid with respect to a specified number of shares of Common Stock.

1.17 Exchange Act

Exchange Act means the Securities Exchange Act of 1934, as amended.

1.18 Fair Market Value

Fair Market Value of a share of Common Stock means, on any given date, the fair market value of a share of Common Stock as the Committee, in its discretion, shall determine; provided, however, that the Committee shall determine Fair Market Value without regard to any restriction other than a restriction which, by its terms, will never lapse and, if the shares of Common Stock are traded on any national stock exchange or quotation system, the Fair Market Value of a share of Common Stock shall be the closing price of a share of Common Stock as reported on such stock exchange or quotation system on such date, or if the shares of Common Stock are not traded on such stock exchange or quotation system on such date, then on the next preceding day that the shares of Common Stock were traded on such stock exchange or quotation system, all as reported by such source as the Committee shall select. The Fair Market Value that the Committee determines shall be final, binding and conclusive on the Company, any Affiliate and each Participant. Fair Market Value relating to the exercise price, Initial Value, or purchase price of any Non-409A Award that is an Option, SAR or Other Stock-Based Award in the nature of purchase rights shall conform to the requirements for exempt stock rights under Section 409A of the Code.

1.19 Full Value Award

Full Value Award means an Award other than an Option, SAR or Other Stock-Based Award in the nature of purchase rights.

1.20 Incentive Award

Incentive Award means an Award stated with reference to a specified dollar amount or number of shares of Common Stock which, subject to such terms and conditions as may be prescribed by the Committee, entitles the Participant to receive shares of Common Stock, cash or a combination thereof from the Company or an Affiliate.

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1.21 Incumbent Board

Incumbent Board means a Board of Directors at least a majority of whom consist of individuals who either are (a) members of the Company's Board at the beginning of any period of two consecutive years or (b) members who become members of the Company's Board subsequent to such time whose election, or nomination for election by the Company's shareholders, was approved by a vote of at least two-thirds (2/3) of the directors then comprising the Incumbent Board (either by a specific vote or by approval of the proxy statement of the Company in which that person is named as a nominee for director, without objection to that nomination), but excluding, for that purpose, any individual whose initial assumption of office occurs as a result of an actual or threatened election contest (within the meaning of Rule 14a-11 of the Exchange Act) with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board of Directors.

1.22 Initial Value

Initial Value means, with respect to a Corresponding SAR, the Option price per share of the related Option and, with respect to a SAR granted independently of an Option, the amount determined by the Committee on the date of grant which shall not be less than the Fair Market Value of one share of Common Stock on the date of grant, subject to Sections 14.06 and 16.03 with respect to substitute Awards

1.23 Non-409A Award

Non-409A Award means an Award that is not intended to be subject to Section 409A of the Code.

1.24 Option

Option means a stock option that entitles the holder to purchase from the Company a stated number of shares of Common Stock at the price set forth in an Agreement.

1.25 Other Stock-Based Award

Other Stock-Based Award means an Award granted to the Participant under Article XII of the Plan.

1.26 Participant

Participant means a member of the Board or Board of Directors of an Affiliate (who is not an employee), a Person who provides services to the Company or an Affiliate in a capacity other than as an employee and any entity which is a wholly-owned alter ego of such member of the Board or Board of Directors of an Affiliate or Person who provides services and who satisfies the requirements of Article V and is selected by the Committee to receive an Award.

1.27 Plan

Plan means this Intrexon Corporation 2019 Incentive Plan for Non-Employee Service Providers, in its current form and as hereafter amended.

1.28 Person

Person means any individual, corporation, partnership, limited liability company, joint venture, incorporated or unincorporated association, joint-stock company, trust, unincorporated organization or government or other agency or political subdivision thereof or any other entity of any kind.

1.29 Restricted Stock Award

Restricted Stock Award means shares of Common Stock granted to a Participant under Article IX.

1.30 Restricted Stock Unit

Restricted Stock Unit means an Award, stated with respect to a specified number of shares of Common Stock, that entitles the Participant to receive one share of Common Stock (or, as otherwise determined by the Committee and set forth in the applicable Agreement, the equivalent Fair Market Value of one share of Common Stock in cash) with respect to each Restricted Stock Unit that becomes payable under the terms and conditions of the Plan and the applicable Agreement.

1.31 Retirement

Retirement means the termination of Participant's service with the Company and its Affiliates on or after (i) attaining age sixty-five (65) or (ii) attaining age fifty-five (55) and accumulating ten (10) years of service, except as otherwise determined by the Committee and set forth in the applicable Agreement. For this purpose, years of service shall be determined in accordance with the Company's written policies as determined by the Committee.

1.32 SAR

SAR means a stock appreciation right that in accordance with the terms of an Agreement entitles the holder to receive cash or a number of shares of Common Stock, as determined by the Committee and set forth in the applicable Agreement, based on the increase in the Fair Market Value of the shares underlying the stock appreciation right during a stated period specified by the Committee over the Initial Value. References to "SARs" include both Corresponding SARs and SARs granted independently of Options, unless the context requires otherwise.

1.33 Termination Date

Termination Date means the day on which a Participant's service with the Company and its Affiliates terminates or is terminated.

ARTICLE II.
PURPOSES

The Plan is intended to assist the Company and its Affiliates in recruiting and retaining individuals with ability and initiative by enabling such Persons to participate in the future success of the Company and its Affiliates by aligning their interests with those of the Company and its stockholders.

ARTICLE III.
TYPES OF AWARDS

The Plan is intended to permit the grant of Options that are nonqualified stock options, SARs, Restricted Stock Awards, Restricted Stock Units, Incentive Awards, Other Stock-Based Awards, Dividend Equivalents and Cash Awards in accordance with the Plan and procedures that may be established by the Committee. The proceeds received by the Company from the sale of shares of Common Stock pursuant to this Plan may be used for general corporate purposes.

ARTICLE IV.
ADMINISTRATION

4.01 General Administration

The Plan shall be administered by the Committee. The Committee shall have authority to grant Awards upon such terms (not inconsistent with the provisions of this Plan) as the Committee may consider appropriate. Such terms may include conditions (in addition to those contained in this Plan) on the grant, exercisability, transferability, settlement and forfeitability of all or any part of an Award, among other terms. Notwithstanding any such conditions, the Committee may, in its discretion, accelerate the time at which any Award may be exercised, become transferable or nonforfeitable or be earned and settled including, without limitation, (i) in the event of the Participant's death, Disability, Retirement or involuntary termination of service (including a voluntary termination of service for good reason) or (ii) in connection with a Change in Control. In addition, the Committee shall have complete authority to interpret all provisions of this Plan including, without limitation, the discretion to interpret any terms used in the Plan that are not defined herein; to prescribe the form of Agreements; to adopt, amend and rescind rules and regulations pertaining to the administration of the Plan; and to make all other determinations necessary or advisable for the administration of this Plan. The express grant in the Plan of any specific power to the Committee shall not be construed as limiting any power or authority of the Committee. Any decision made, or action taken, by the Committee in connection with the administration of this Plan shall be final and conclusive. The members of the Committee shall not be liable for any act done in good faith with respect to this Plan or any Agreement or Award. Unless otherwise provided by the Bylaws of the Company, by resolution of the Board or applicable law, a majority of the members of the Committee shall constitute a quorum, and acts of the majority of the members present at any meeting at which a quorum is present, and any acts approved in writing by all members of the Committee without a meeting, shall be the acts of the Committee.

4.02 Delegation of Authority

The Committee may act through subcommittees, in which case the subcommittee shall be subject to and have the authority hereunder applicable to the Committee, and the acts of the subcommittee shall be deemed to be the acts of the Committee hereunder. Additionally, to the extent applicable law so permits, the Committee, in its discretion, may delegate to one or more officers of the Company all or part of the Committee's authority and duties with respect to Awards to be granted to individuals who are not subject to the reporting and other provisions of Section 16 of the Exchange Act and who are not members of the Board or the Board of Directors of an Affiliate. The Committee may revoke or amend the terms of any delegation at any time but such action shall not invalidate any prior actions of the Committee's delegate or delegates that were consistent with the terms of the Plan and the Committee's prior delegation. Notwithstanding the foregoing, however, if and to the extent deemed necessary by the Board, all Awards granted to any individual who is subject to the reporting and other provisions of Section 16 of the Exchange Act shall be made by a Committee comprised solely of two or more directors, all of whom are "non-employee directors" within the meaning of Rule 16b-3 under the Exchange Act, to the extent necessary to exempt the Award from the short-swing profit rules of Section 16(b) of the Exchange Act. However, any Awards granted to any individual who is subject to the reporting and other provisions of Section 16 of the Exchange Act shall not fail to be valid if made other than by a committee comprised solely of two or more directors, all of whom are "non-employee directors" within the meaning of Rule 16(b)-3 under the Exchange Act. An Award granted to an individual who is a member of the Committee may be approved by the Committee in accordance with the applicable Committee charters then in effect and other applicable law except that the Committee member must abstain from any action with respect to the Committee member's own Awards.

4.03 Indemnification of Committee

The Company shall bear all expenses of administering this Plan. The Company shall indemnify and hold harmless each Person who is or shall have been a member of the Committee acting as administrator of the Plan, or any delegate of such, against and from any cost, liability, loss or expense that may be imposed upon or

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reasonably incurred by such Person in connection with or resulting from any action, claim, suit or proceeding to which such Person may be a party or in which such Person may be involved by reason of any action taken or not taken under the Plan and against and from any and all amounts paid by such Person in settlement thereof, with the Company's approval, or paid by such Person in satisfaction of any judgment in any such action, suit or proceeding against such Person, provided he or she shall give the Company an opportunity, at its own expense, to handle and defend the same before he or she undertakes to handle and defend it on his or her own behalf. Notwithstanding the foregoing, the Company shall not indemnify and hold harmless any such Person if applicable law or the Company's Certificate of Incorporation or Bylaws prohibit such indemnification. The foregoing right of indemnification shall not be exclusive of any other rights of indemnification to which such Persons may be entitled under the Company's Certificate of Incorporation or Bylaws, as a matter of law or otherwise, or under any other power that the Company may have to indemnify such Person or hold him or her harmless. The provisions of the foregoing indemnity shall survive indefinitely the term of this Plan.

ARTICLE V. ELIGIBILITY

Any member of the Board or the Board of Directors of an Affiliate (including an entity that becomes an Affiliate after the adoption of the Plan) (who is not an employee), any Person who provides services to the Company or an Affiliate (including an entity that becomes an Affiliate after the adoption of the Plan) in a capacity other than as an employee and any entity which is a wholly-owned alter ego of such member of the Board or Board of Directors of an Affiliate or other Person who provides services is eligible to participate in this Plan if the Committee, in its sole discretion, determines that such Person or entity has contributed significantly or can be expected to contribute significantly to the profits or growth of the Company or any Affiliate or if it is otherwise in the best interest of the Company or any Affiliate for such Person or entity to participate in this Plan. With respect to any Board member who is (i) designated or nominated to serve as a Board member by a stockholder of the Company and (ii) an employee of such stockholder of the Company, then, at the irrevocable election of the employing stockholder, the Person or entity who shall be eligible to participate in this Plan on behalf of the service of the respective Board member shall be the employing stockholder (or one of its Affiliates). To the extent such election is made, the respective Board member shall have no rights hereunder as a Participant with respect to such Board member's participation in this Plan. An Award may be granted to a Person or entity who has been offered service by the Company or an Affiliate and who would otherwise qualify as eligible to receive the Award to the extent that Person or entity commences service with the Company or an Affiliate, provided that such Person or entity may not receive any payment or exercise any right relating to the Award, and the grant of the Award will be contingent, until such Person or entity has commenced service with the Company or an Affiliate.

ARTICLE VI. COMMON STOCK SUBJECT TO PLAN

6.01 Common Stock Issued

Upon the issuance of shares of Common Stock pursuant to an Award, the Company may deliver to the Participant (or the Participant's broker if the Participant so directs) shares of Common Stock from its authorized but unissued Common Stock, treasury shares or reacquired shares, whether reacquired on the open market or otherwise.

6.02 Aggregate Limit

The maximum aggregate number (the "Maximum Aggregate Number") of shares of Common Stock which may be subject to Awards under this Plan is 5,000,000 shares of Common Stock.

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The Maximum Aggregate Number of shares of Common Stock that may be subject to Awards under the Plan may be subject to Options.

The Maximum Aggregate Number of shares of Common Stock that may be subject to Awards under the Plan and the maximum number of shares of Common Stock that may be subject to Options under the Plan shall, in each instance, be subject to adjustment as provided in Article XVI, provided, however, that (i) substitute Awards granted under Section 16.03 shall not reduce the Maximum Aggregate Number of shares of Common Stock that may be subject to Awards under the Plan (to the extent permitted by applicable stock exchange rules) and (ii) available shares of stock under a stockholder-approved plan of an acquired company (as appropriately adjusted to reflect the transaction) also may be used for Awards under the Plan and shall not reduce the Maximum Aggregate Number of shares of Common Stock that may be subject to Awards under the Plan (subject to applicable stock exchange requirements).

6.03 Share Counting

Except as set forth below, a share of Common Stock subject to any Award under this Plan shall reduce the Maximum Aggregate Number of shares of Common Stock available for Awards under this Plan, and the maximum number of shares of Common Stock available for Options under this Plan, by one. Except as otherwise provided herein, (i) any shares of Common Stock subject to an Award granted under this Plan which terminates by expiration, forfeiture, cancellation or otherwise, which is settled in cash in lieu of Common Stock or which is exchanged, with the Committee's permission, for Awards granted under this Plan not involving shares of Common Stock, (ii) shares of Common Stock not issued or delivered as a result of the net exercise or settlement of an outstanding Award granted under this Plan, (iii) shares of Common Stock tendered to pay the exercise or purchase price or withholding taxes relating to an outstanding Award granted under this Plan, (iv) shares of Common Stock repurchased on the open market with the proceeds of the exercise or purchase price of an Award granted under this Plan, and (v) shares of Common Stock under a stock-settled SAR that are not actually issued in connection with settlement of the stock-settled SAR, shall all again be available for Awards under the Plan.

ARTICLE VII. OPTIONS

7.01 Grant

Subject to the eligibility provisions of Article V, the Committee will designate each individual or entity to whom an Option is to be granted and will specify the number of shares of Common Stock covered by such grant and that the Option is a nonqualified stock option. An Option may be granted with or without a Corresponding SAR.

7.02 Option Price

The price per share of Common Stock purchased on the exercise of an Option shall be determined by the Committee on the date of grant, but shall not be less than the Fair Market Value of a share of Common Stock on the date the Option is granted, subject to Sections 14.06 and 16.03 with respect to substitute Awards.

7.03 Maximum Term of Option

The maximum time period in which an Option may be exercised shall be determined by the Committee on the date of grant, except that no Option shall be exercisable after the expiration of ten (10) years from the date such Option was granted.

7.04 Exercise

Subject to the provisions of this Plan and the applicable Agreement, an Option may be exercised in whole at any time or in part from time to time at such times and in compliance with such requirements as the Committee

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shall determine. An Option granted under this Plan may be exercised with respect to any number of whole shares less than the full number for which the Option could be exercised. A partial exercise of an Option shall not affect the right to exercise the Option from time to time in accordance with this Plan and the applicable Agreement with respect to the remaining shares subject to the Option. The exercise of an Option shall result in the termination of the Corresponding SAR to the extent of the number of shares with respect to which the Option is exercised.

7.05 Payment

Subject to rules established by the Committee and unless otherwise provided in an Agreement, payment of all or part of the Option price shall be made in cash or cash equivalent acceptable to the Committee. If the Agreement so provides, the Committee, in its discretion and provided applicable law so permits, may allow a Participant to pay all or part of the Option price (a) by surrendering (actually or by attestation) shares of Common Stock to the Company that the Participant already owns; (b) by a cashless exercise through a broker; (c) by means of a "net exercise" procedure by the surrender of shares of Common Stock to which the Participant is otherwise entitled under the Option; (d) by such other medium of payment as the Committee, in its discretion, shall authorize; or (e) by any combination of the aforementioned methods of payment. If shares of Common Stock are used to pay all or part of the Option price, the sum of the cash and cash equivalent and the Fair Market Value (determined as of the day preceding the date of exercise) of the shares surrendered must not be less than the Option price of the shares for which the Option is being exercised.

7.06 Stockholder Rights

No Participant shall have any rights as a stockholder with respect to shares subject to his or her Option until the date of exercise of such Option and the issuance of the shares of Common Stock.

ARTICLE VIII. SARS

8.01 Grant

Subject to the eligibility provisions of Article V, the Committee will designate each individual or entity to whom SARs are to be granted and will specify the number of shares of Common Stock covered by such grant.

8.02 Maximum Term of SAR

The maximum term of a SAR shall be determined by the Committee on the date of grant, except that no SAR shall have a term of more than ten (10) years from the date such SAR was granted. No Corresponding SAR shall be exercisable or continue in existence after the expiration of the Option to which the Corresponding SAR relates.

8.03 Exercise

Subject to the provisions of this Plan and the applicable Agreement, a SAR may be exercised in whole at any time or in part from time to time at such times and in compliance with such requirements as the Committee shall determine; provided, however, that a SAR may be exercised only when the Fair Market Value of the Common Stock that is subject to the exercise exceeds the Initial Value of the SAR and a Corresponding SAR may be exercised only to the extent that the related Option is exercisable. A SAR granted under this Plan may be exercised with respect to any number of whole shares less than the full number for which the SAR could be exercised. A partial exercise of a SAR shall not affect the right to exercise the SAR from time to time in accordance with this Plan and the applicable Agreement with respect to the remaining shares subject to the SAR. The exercise of a Corresponding SAR shall result in the termination of the related Option to the extent of the number of shares with respect to which the SAR is exercised.

8.04 Settlement

The amount payable to the Participant by the Company as a result of the exercise of a SAR shall be settled in cash, by the issuance of shares of Common Stock or by a combination thereof, as the Committee, in its sole discretion, determines and sets forth in the applicable Agreement. No fractional share will be deliverable upon the exercise of a SAR but a cash payment will be made in lieu thereof.

8.05 Stockholder Rights

No Participant shall, as a result of receiving a SAR, have any rights as a stockholder of the Company or any Affiliate until the date that the SAR is exercised and then only to the extent that the SAR is settled by the issuance of Common Stock.

ARTICLE IX. RESTRICTED STOCK AWARDS

9.01 Award

Subject to the eligibility provisions of Article V, the Committee will designate each individual or entity to whom a Restricted Stock Award is to be granted, and will specify the number of shares of Common Stock covered by such grant and the price, if any, to be paid for each share of Common Stock covered by the grant.

9.02 Payment

Unless the Agreement provides otherwise, if the Participant must pay for a Restricted Stock Award, payment of the Award shall be made in cash or cash equivalent acceptable to the Committee. If the Agreement so provides, the Committee, in its discretion and provided applicable law so permits, may allow a Participant to pay all or part of the purchase price (i) by surrendering (actually or by attestation) shares of Common Stock to the Company the Participant already owns and, if necessary to avoid adverse accounting consequences, has held for at least six months, (ii) by means of a “net exercise procedure” by the surrender of shares of Common Stock to which the Participant is otherwise entitled under the Restricted Stock Award, (iii) by such other medium of payment as the Committee in its discretion shall authorize or (iv) by any combination of the foregoing methods of payment. If Common Stock is used to pay all or part of the purchase price, the sum of cash and cash equivalent and other payments and the Fair Market Value (determined as of the day preceding the date of purchase) of the Common Stock surrendered must not be less than the purchase price of the Restricted Stock Award. A Participant’s rights in a Restricted Stock Award may be subject to repurchase upon specified events as determined by the Committee and set forth in the Agreement.

9.03 Vesting

The Committee, on the date of grant of the Restricted Stock Award, shall prescribe that the Restricted Stock Award will become nonforfeitable and transferable subject to such conditions as are set forth in the Agreement. Notwithstanding any provision herein to the contrary, the Committee, in its sole discretion, may grant Restricted Stock Awards that are nonforfeitable and transferable immediately upon grant, including without limitation Restricted Stock Awards granted in payment of earned performance awards or other incentive compensation under the Plan or any other plans or compensatory arrangements of the Company or any Affiliate. By way of example and not of limitation, the Committee may prescribe that a Participant’s rights in a Restricted Stock Award shall be forfeitable and nontransferable subject to (a) the attainment of objectively determinable performance conditions based on the criteria described in Article XV, (b) the Participant’s completion of a specified period of service with the Company or an Affiliate, (c) the Participant’s death, Disability or Retirement or (d) satisfaction of a combination of any of the foregoing factors. A Restricted Stock Award can only become nonforfeitable and transferable during the Participant’s lifetime in the hands of the Participant.

9.04 Maximum Restriction Period

To the extent the Participant's rights in a Restricted Stock Award are forfeitable and nontransferable for a period of time, the Committee on the date of grant shall determine the maximum period over which the rights may become nonforfeitable and transferable, except that such period shall not exceed ten (10) years from the date of grant.

9.05 Stockholder Rights

Prior to their forfeiture (in accordance with the applicable Agreement and while the shares of Common Stock granted pursuant to the Restricted Stock Award may be forfeited and are nontransferable), a Participant will have all rights of a stockholder with respect to a Restricted Stock Award, including the right to receive dividends and vote the shares; provided, however, that during such period (a) a Participant may not sell, transfer, pledge, exchange, hypothecate or otherwise dispose of shares granted pursuant to a Restricted Stock Award, (b) the Company shall retain custody of any certificates evidencing shares granted pursuant to a Restricted Stock Award and (c) the Participant will deliver to the Company a stock power, endorsed in blank, with respect to each Restricted Stock Award. In lieu of retaining custody of the certificates evidencing shares granted pursuant to a Restricted Stock Award, the shares of Common Stock granted pursuant to the Restricted Stock Award may, in the Committee's discretion, be held in escrow by the Company or recorded as outstanding by notation on the stock records of the Company until the Participant's interest in such shares of Common Stock vest. Notwithstanding the preceding sentences, but subject to Section 14.07 below, if and to the extent deemed necessary by the Committee, dividends payable with respect to Restricted Stock Awards may accumulate (without interest) and become payable in cash or in shares of Common Stock to the Participant at the time, and only to the extent that, the portion of the Restricted Stock Award to which the dividends relate has become transferable and nonforfeitable. The limitations set forth in the preceding sentences shall not apply after the shares granted under the Restricted Stock Award are transferable and are no longer forfeitable.

ARTICLE X. RESTRICTED STOCK UNITS

10.01 Grant

Subject to the eligibility provisions of Article V, the Committee will designate each individual or entity to whom a grant of Restricted Stock Units is to be made and will specify the number of shares covered by such grant.

10.02 Earning the Award

The Committee, on the date of grant of the Restricted Stock Units, shall prescribe that the Restricted Stock Units will be earned and become payable subject to such conditions as are set forth in the Agreement. Notwithstanding any provision herein to the contrary, the Committee, in its sole discretion, may grant Restricted Stock Units in payment of earned performance awards or other incentive Compensation under the Plan or any other plans or Compensatory arrangements of the Company or any Affiliate. By way of example and not of limitation, the Committee may prescribe that the Restricted Stock Units will be earned and become payable upon (a) the satisfaction of objectively determinable performance conditions based on the criteria described in Article XV, (b) the Participant's completion of a specified period of service with the Company or an Affiliate, (c) the Participant's death, Disability or Retirement or (d) satisfaction of a combination of any of the foregoing factors. Notwithstanding any provision herein to the contrary, the Committee, in its sole discretion, may grant Restricted Stock Units that are earned and payable immediately upon grant.

10.03 Maximum Restricted Stock Unit Award Period

The Committee, on the date of grant, shall determine the maximum period over which Restricted Stock Units may be earned, except that such period shall not exceed ten (10) years from the date of grant.

10.04 Payment

The amount payable to the Participant by the Company when an Award of Restricted Stock Units is earned shall be settled by the issuance of one share of Common Stock (or, as otherwise determined by the Committee and set forth in the applicable Agreement, the equivalent Fair Market Value of one share of Common Stock in cash) for each Restricted Stock Unit that is earned. A fractional share of Common Stock shall not be deliverable when an Award of Restricted Stock Units is earned, but a cash payment will be made in lieu thereof.

10.05 Stockholder Rights

No Participant shall, as a result of receiving a grant of Restricted Stock Units, have any rights as a stockholder until and then only to the extent that the Restricted Stock Units are earned and settled in shares of Common Stock, nor shall any participant receive Dividend Equivalents solely as a result of receiving a grant of Restricted Stock Units. However, notwithstanding the foregoing, the Committee, in its sole discretion, may grant Dividend Equivalents in the Agreement in connection with a grant of Restricted Stock Units. By way of example and not limitation, such Dividend Equivalents may provide that, for so long as the Participant holds any Restricted Stock Units, if the Company pays any cash dividends on its Common Stock, then (a) the Company may pay the Participant in cash for each outstanding Restricted Stock Unit covered by the Agreement as of the record date of such dividend, less any required withholdings, the per share amount of such dividend or (b) the number of outstanding Restricted Stock Units covered by the Agreement may be increased by the number of Restricted Stock Units, rounded down to the nearest whole number, equal to (i) the product of the number of the Participant's outstanding Restricted Stock Units as of the record date for such dividend multiplied by the per share amount of the dividend divided by (ii) the Fair Market Value of a share of Common Stock on the payment date of such dividend. In the event additional Restricted Stock Units are awarded, such Restricted Stock Units shall be subject to the same terms and conditions set forth in the Plan and the Agreement as the outstanding Restricted Stock Units with respect to which they were granted. Notwithstanding the preceding sentences, but subject to Section 14.07 below, if and to the extent deemed necessary to the Committee, Dividend Equivalents payable with respect to Restricted Stock Units may accumulate (without interest) and become payable to the Participant at the time, and only to the extent that, the portion of the Restricted Stock Units to which the Dividend Equivalents relate has become earned and payable. The limitations set forth in the preceding sentences shall not apply after the Restricted Stock Units become earned and payable and shares are issued thereunder.

ARTICLE XI. INCENTIVE AWARDS

11.01 Grant

Subject to the eligibility provisions of Article V, the Committee will designate each individual or entity to whom Incentive Awards are to be granted. All Incentive Awards shall be determined exclusively by the Committee under the procedures established by the Committee.

11.02 Earning the Award

Subject to the Plan, the Committee, on the date of grant of an Incentive Award, shall specify in the applicable Agreement the terms and conditions which govern the grant, including, without limitation, whether the Participant to be entitled to payment must be providing services to the Company or an Affiliate at the time the Incentive Award is to be paid. By way of example and not of limitation, the Committee may prescribe that the Incentive Award shall be earned and payable upon (a) the satisfaction of objectively determinable performance conditions based on the criteria described in Article XV, (b) the Participant's completion of a specified period of service with the Company or an Affiliate, (c) the Participant's death, Disability or Retirement or (d) satisfaction of a combination of any of the foregoing factors.

11.03 Maximum Incentive Award Period

The Committee, at the time an Incentive Award is made, shall determine the maximum period over which the Incentive Award may be earned, except that such period shall not exceed ten (10) years from the date of grant.

11.04 Payment

The amount payable to the Participant by the Company when an Incentive Award is earned may be settled in cash, by the issuance of shares of Common Stock or by a combination thereof, as the Committee, in its sole discretion, determines and sets forth in the applicable Agreement. A fractional share of Common Stock shall not be deliverable when an Incentive Award is earned, but a cash payment will be made in lieu thereof.

11.05 Stockholder Rights

No Participant shall, as a result of receiving an Incentive Award, have any rights as a stockholder of the Company or any Affiliate on account of such Incentive Award, unless and then only to the extent that the Incentive Award is earned and settled in shares of Common Stock.

ARTICLE XII. OTHER STOCK-BASED AWARDS

12.01 Other Stock-Based Awards

The Committee is authorized, subject to limitations under applicable law, to grant to a Participant such other Awards that may be denominated or payable in, valued in whole or in part by reference to or otherwise based on shares of Common Stock, including, without limitation, convertible or exchangeable securities, and other rights convertible or exchangeable into shares of Common Stock or the cash value of shares of Common Stock. The Committee shall determine the terms and conditions of any such Other Stock-Based Awards. Unless the Committee or the Agreement provides otherwise, Other Stock-Based Awards shall be vested, exercisable or earned and payable upon the date of grant. Common Stock delivered pursuant to an Other Stock-Based Award in the nature of purchase rights ("Purchase Right Award") shall be purchased for such consideration not less than the Fair Market Value of the shares of Common Stock as of the date the Other Stock-Based Award is granted (subject to Sections 14.06 and 16.03 with respect to substitute Awards), and may be paid for at such times, by such methods, and in such forms, including, without limitation, cash, shares of Common Stock, other Awards, notes or other property, as the Committee shall determine. The maximum time period in which an Other Stock-Based Award in the nature of purchase rights may be exercised shall be determined by the Committee on the date of grant, except that no Other Stock-Based Award in the nature of purchase rights shall be exercisable after the expiration of ten (10) years from the date such Other Stock-Based Award was granted.

12.02 Bonus Stock and Awards in Lieu of Other Obligations

The Committee also is authorized (i) to grant to a Participant shares of Common Stock as a bonus, (ii) to grant shares of Common Stock or other Awards in lieu of other obligations of the Company or any Affiliate to pay cash or to deliver other property under this Plan or under any other plans or compensatory arrangements of the Company or any Affiliate, (iii) to use available shares of Common Stock as the form of payment for compensation, grants or rights earned or due under any other compensation plans or arrangements of the Company or an Affiliate, and (iv) subject to Section 19.13 below, to grant as alternatives to or replacements of Awards granted or outstanding under the Plan or any other plan or arrangement of the Company or any Affiliate, subject to such terms as shall be determined by the Committee and the overall limitation on the number of shares of Common Stock that may be issued under the Plan. Notwithstanding any other provision hereof, shares of Common Stock or other securities delivered to a Participant pursuant to a purchase right granted under this Plan shall be purchased for consideration, the Fair Market Value of which shall not be less than the Fair Market Value of such shares of Common Stock or other securities as of the date such purchase right is granted.

ARTICLE XIII.
DIVIDEND EQUIVALENTS AND CASH AWARDS

13.01 Dividend Equivalents

The Committee is authorized to grant Dividend Equivalents to a Participant which may be awarded on a free-standing basis or in connection with another Award. Subject to Section 14.07 below, the Committee may provide that Dividend Equivalents shall be paid or distributed when accrued or shall be deemed to have been reinvested in additional shares of Common Stock, other Awards or other investment vehicles, subject to restrictions on transferability, risk of forfeiture and such other terms as the Committee may specify and set forth in the applicable Agreement. Notwithstanding the foregoing, no Dividend Equivalents may be awarded in connection with an Option, SAR or Other Stock-Based Award in the nature of purchase rights.

13.02 Cash Awards

The Committee is authorized to grant to a Participant Cash Awards. The Committee shall determine the terms and conditions of any such Cash Awards. Cash Awards may be granted as an element of or a supplement to any other Award under the Plan or as a stand-alone Cash Award. The Committee, on the date of grant of Cash Awards, may prescribe that the Cash Awards will be earned and become payable subject to such conditions as are set forth in the Agreement. By way of example and not of limitation, the Committee may prescribe that Cash Awards will be earned and become payable upon (a) the satisfaction of objectively determinable performance conditions based on the criteria described in Article XV, (b) the Participant's completion of a specified period of service with the Company or an Affiliate, (c) the Participant's death, Disability or Retirement or (d) satisfaction of a combination of any of the foregoing factors. Notwithstanding any provision herein to the contrary, the Committee, in its sole discretion, may grant Cash Awards in payment of earned performance awards and other incentive compensation payable under the Plan or any other plans or compensatory arrangements of the Company or any Affiliate. Unless the Committee or the Agreement provides otherwise, Cash Awards shall be vested and payable upon the date of grant.

ARTICLE XIV.
TERMS APPLICABLE TO ALL AWARDS

14.01 Written Agreement

Each Award shall be evidenced by a written or electronic Agreement (including any amendment or supplement thereto) between the Company and the Participant specifying the terms and conditions of the Award granted to such Participant. Each Agreement should specify whether the Award is intended to be a Non-409A Award or a 409A Award.

14.02 Nontransferability

Except as provided in Section 14.03 below, each Award granted under this Plan shall be nontransferable except by will or by the laws of descent and distribution or pursuant to the terms of a valid qualified domestic relations order. In the event of any transfer of an Option or Corresponding SAR (by the Participant or his transferee), the Option and Corresponding SAR that relates to such Option must be transferred to the same Person or Persons or entity or entities. Except as provided in Section 14.03 below, during the lifetime of the Participant to whom the Option or SAR is granted, the Option or SAR may be exercised only by the Participant. No right or interest of a Participant in any Award shall be liable for, or subject to, any lien, obligation, or liability of such Participant or his transferee.

14.03 Transferable Awards

Section 14.02 to the contrary notwithstanding, if the Agreement so provides, an Award may be transferred by a Participant to immediate family members or trusts or other entities on behalf of the Participant and/or

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immediate family members or for charitable donations. Any such transfer will be permitted only if (a) the Participant does not receive any consideration for the transfer and (b) the Committee expressly approves the transfer. The holder of the Award transferred pursuant to this Section shall be bound by the same terms and conditions that governed the Award during the period that it was held by the Participant; provided, however, that such transferee may not transfer the Award except by will or the laws of descent and distribution. Unless transferred as provided in Section 9.05, a Restricted Stock Award may not be transferred prior to becoming non-forfeitable and transferable.

14.04 Participant Status

If the terms of any Award provide that it may be exercised or paid only during continued service or within a specified period of time after termination of continued service, the Committee may decide to what extent leaves of absence for governmental or military service, illness, temporary disability or other reasons shall not be deemed interruptions of continuous employment or service. For purposes of the Plan, employment and continued service shall be deemed to exist between the Participant and the Company and/or an Affiliate if, at the time of the determination, the Participant is a director, officer, employee, consultant or advisor of the Company or an Affiliate. A Participant on military leave, sick leave or other bona fide leave of absence shall continue to be considered an employee for purposes of the Plan during such leave if the period of leave does not exceed three (3) months, or, if longer, so long as the individual's right to re-employment with the Company or any of its Affiliates is guaranteed either by statute or by contract. If the period of leave exceeds three (3) months, and the individual's right to re-employment is not guaranteed by statute or by contract, the employment shall be deemed to be terminated on the first day after the end of such three (3) month period. Except as may otherwise be expressly provided in an Agreement, Awards granted to a director, officer, consultant or advisor shall not be affected by any change in the status of the Participant so long as the Participant continues to be a director, officer, employee, consultant or advisor to the Company or any of its Affiliates (regardless of having changed from one to the other or having been transferred from one entity to another). The Participant's continued service shall not be considered interrupted in the event the Committee, in its discretion, and as specified at or prior to such occurrence, determines there is no interruption in the case of a spin-off, sale or disposition of the recipient of the Participant's services from the Company or an Affiliate, except that if the Committee does not otherwise specify such at or such prior to such occurrence, the Participant will be deemed to have a termination of continuous service to the extent the Affiliate to which the Participant provides services is no longer the Company or an entity that qualifies as an Affiliate. The foregoing provisions apply to a 409A Award only to the extent Section 409A of the Code does not otherwise treat the Participant as continuing in service or as having a separation from service at an earlier time.

14.05 Change in Control

Notwithstanding any provision of any Agreement, in the event of a Change in Control, the Committee in its discretion may (i) declare that some or all outstanding Options, SARs and Other Stock-Based Awards in the nature of purchase rights previously granted under the Plan, whether or not then exercisable, shall terminate on the Control Change Date without any payment to the holder of the Options, SARs and Other Stock-Based Awards in the nature of purchase rights, provided the Committee gives prior written notice to the holders of such termination and gives such holders the right to exercise their outstanding Options, SARs and Other Stock-Based Awards in the nature of purchase rights for at least seven (7) days before such date to the extent then exercisable (or to the extent such Options, SARs or Other Stock-Based Awards in the nature of purchase rights would have become exercisable as of the Control Change Date), (ii) terminate on the Control Change Date outstanding Restricted Stock Awards, Restricted Stock Units, Incentive Awards, Other Stock-Based Awards not in the nature of purchase rights and Dividend Equivalents previously granted under the Plan that are not then nonforfeitable and transferable or earned and payable (and that will not become nonforfeitable and transferable or earned and payable as of the Control Change Date) without any payment to the holder of the Restricted Stock Award, Restricted Stock Units, Incentive Awards, Other Stock-Based Awards not in the nature of purchase rights and Dividend Equivalents, other than the return, if any, of the purchase price of any such Awards, (iii) terminate on

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the Control Change Date some or all outstanding Options, SARs and Other Stock-Based Awards in the nature of purchase rights previously granted under the Plan, whether or not then exercisable, in consideration of payment to the holder of the Options, SARs and Other Stock-Based Awards in the nature of purchase rights, with respect to each share of Common Stock for which the Options, SARs and Other Stock-Based Awards in the nature of purchase rights are then exercisable (or that will become exercisable as of the Control Change Date), of the excess, if any, of the Fair Market Value on such date of the Common Stock subject to such portion of the Options, SARs and Other Stock-Based Awards in the nature of purchase rights over the purchase price or Initial Value, as applicable (provided that any portion of such Options, SARs and Other Stock-Based Awards in the nature of purchase rights that are not then exercisable and will not become exercisable on the Control Change Date, and Options, SARs and Other Stock-Based Awards in the nature of purchase rights with respect to which the Fair Market Value of the Common Stock subject to the Options, SARs and Other Stock-Based Awards in the nature of purchase rights does not exceed the purchase price or Initial Value, as applicable, shall be cancelled without any payment therefor), (iv) terminate on the Control Change Date outstanding Restricted Stock Awards, Restricted Stock Units, Incentive Awards, Other Stock-Based Awards not in the nature of purchase rights and Divided Equivalents previously granted under the Plan that will become nonforfeitable and transferable or earned and payable as of the Control Change Date (or that previously became nonforfeitable and transferable or earned and payable but have not yet been settled as of the Control Change Date) in exchange for a payment equal to the excess of the Fair Market Value of the shares of Common Stock subject to such Awards, or the amount of cash payable under the Awards, over any unpaid purchase price, if any, for such Awards (provided that any portion of such Awards that are not then nonforfeitable and transferable or earned and payable as of the Control Change Date (and that will not become nonforfeitable and transferable or earned and payable as of the Control Change Date) shall be cancelled without any payment therefor), or (v) take such other actions as the Committee determines to be reasonable under the circumstances to permit the Participant to realize the value of the outstanding Awards (which Fair Market Value for purposes of Awards that are not then exercisable, nonforfeitable and transferable or earned and payable as of the Control Change Date (and that will not become exercisable, nonforfeitable and transferable or earned and payable as of the Control Change Date) or with respect to which the Fair Market Value of the Common Stock subject to the Awards does not exceed the purchase price or Initial Value, as applicable, shall be deemed to be zero). The payments described above may be made in any manner the Committee determines, including in cash, stock or other property. The Committee may take the actions described above with respect to Awards that are not then exercisable, nonforfeitable and transferable or earned and payable or with respect to which the Fair Market Value of the Common Stock subject to the Awards does not exceed the purchase price or Initial Value, as applicable, whether or not the Participant will receive any payments therefor. The Committee in its discretion may take any of the actions described in this Section 14.05 contingent on consummation of the Change in Control and with respect to some or all outstanding Awards, whether or not then exercisable, nonforfeitable and transferable or earned and payable or on an Award-by-Award basis, which actions need not be uniform with respect to all outstanding Awards or Participants. However, outstanding Awards shall not be terminated to the extent that written provision is made for their continuance, assumption or substitution by the Company or a successor or its parent or subsidiary in connection with the Change in Control except as otherwise provided in the applicable Agreement.

14.06 Stand-Alone, Additional, Tandem and Substitute Awards

Subject to Section 19.13 below, Awards granted under the Plan may, in the discretion of the Committee, be granted either alone or in addition to, in tandem with or in substitution or exchange for, any other Award or any Award granted under another plan of the Company or any Affiliate or any entity acquired by the Company or any Affiliate or any other right of a Participant to receive payment from the Company or any Affiliate; provided, however, that a 409A Award may not be granted in tandem with a Non-409A Award. Awards granted in addition to or in tandem with another Award or Awards may be granted either at the same time as or at a different time from the grant of such other Award or Awards. Subject to applicable law and the restrictions on 409A Awards and repricings in Section 19.13 below, the Committee may determine that, in granting a new Award, the in-the-money value or Fair Market Value of any surrendered Award or Awards or the value of any other right to

payment surrendered by the Participant may be applied, or otherwise taken into account with respect, to any other new Award or Awards.

14.07 Form and Timing of Payment; Deferrals

Subject to the terms of the Plan and any applicable Agreement, payments to be made by the Company or an Affiliate upon the exercise of an Option, SAR or Other Stock-Based Award in the nature of purchase rights or settlement of any other Award may be made in such form as the Committee may determine and set forth in the applicable Agreement, including, without limitation, cash, shares of Common Stock, other Awards or other property and may be made in a single payment or transfer, in installments or on a deferred basis. The settlement of an Award may be accelerated, and cash paid in lieu of shares of Common Stock in connection with such settlement, in the discretion of the Committee or upon the occurrence of one or more specified events set forth in the applicable Agreement (and to the extent permitted by the Plan and Section 409A of the Code). Subject to the Plan, installment or deferred payments may be required by the Committee or permitted at the election of the Participant on the terms and conditions established by the Committee. Payments may include, without limitation, provisions for the payment or crediting of reasonable interest on installments or deferred payments or the grant or crediting of Dividend Equivalents or other amounts in respect of installment or deferred payments denominated in shares of Common Stock. In the case of any 409A Award that is vested and no longer subject to a substantial risk of forfeiture (within the meaning of Sections 83 and 409A of the Code), such Award may be distributed to the Participant, upon application of the Participant to the Committee, if the Participant has an unforeseeable emergency within the meaning of Section 409A of the Code, if determined by the Committee and set forth in the applicable Agreement. Notwithstanding any other provision of the Plan, however, no dividends payable with respect to an Award or Dividend Equivalents may be paid in connection with any Awards or Dividend Equivalents that are to become nonforfeitable and transferable or earned and payable based upon performance conditions unless and until the performance conditions are satisfied, and, if determined by the Committee and set forth in the applicable Agreement, any such dividends and Dividend Equivalents will accumulate (without interest) and become payable to the Participant at the time, and only to the extent that, the applicable Awards or Dividend Equivalents have become non-forfeitable and transferable or earned and payable upon satisfaction of the relevant performance conditions.

14.08 Time and Method of Exercise

The Committee shall determine and set forth in the Agreement the time or times at which Awards granted under the Plan may be exercised or settled in whole or in part and shall set forth in the Agreement the rules regarding the exercise, settlement and/or termination of Awards upon the Participant's death, Disability, termination of service or ceasing to be a director. Unless the Agreement provides otherwise, an Award may be exercised by delivering notice to the Company's principal office, to the attention of its Secretary (or the Secretary's designee) no less than one (1) business day in advance of the effective date of the proposed exercise. Such notice shall be accompanied by the applicable Agreement, shall specify the number of shares of Common Stock with respect to which the Award is being exercised and the effective date of the proposed exercise and shall be signed by the Participant or other person then having the right to exercise the Award. Such notice may be withdrawn at any time prior to the close of business on the business day immediately preceding the effective date of the proposed exercise. Unless the Committee otherwise permits through the applicable Agreement or otherwise, no partial exercise of an Award shall be for an aggregate exercise or purchase price or a base value of less than One Thousand Dollars (\$1,000). Notwithstanding any other provision of the Plan, however, if an Award is to become exercisable, nonforfeitable and transferable or earned and payable on the completion of a specified period of service with the Company or any Affiliate, without the achievement of any performance conditions being required, and the Award is not being granted in lieu of any other cash compensation the Participant is to receive that would be payable over a shorter period of time, then unless the applicable Agreement provides otherwise, the Award shall become exercisable, non-forfeitable and transferable or earned and payable with respect to twenty-five percent (25%) of the underlying shares of Common Stock (or any amounts payable thereunder for Awards denoted in dollars) on each of the first, second, third and fourth anniversaries of the date

of grant (subject to acceleration of vesting, to the extent permitted by the Plan and the Committee, in the event of a Change in Control or the Participant's death, Disability, Retirement or involuntary termination of service (including a voluntary termination of service for good reason). Notwithstanding any provision of the Plan providing for the maximum term of an Award, in the event any Award would expire prior to exercise, vesting or settlement because trading in shares of Common Stock is prohibited by law or by any insider trading policy of the Company, the term of the Award shall automatically be extended until thirty (30) days after the expiration of any such prohibitions to permit the Participant to realize the value of the Award, provided such extension with respect to the applicable Award (i) is permitted by law, (ii) does not result in a violation of Section 409A with respect to the Award, and (iii) does not otherwise adversely impact the tax consequences of the Award. An Agreement may provide that the Award will be automatically, and without any action by the Participant, deemed exercised, by means of a "net exercise" procedure, immediately prior to the expiration of the Award if the then Fair Market Value of the underlying shares of Common Stock at that time exceeds the exercise or purchase price or base value of the Award, in order to permit the Participant to realize the value of the Award. With respect to an Option and its Corresponding SAR, the Agreement may provide which Award will be deemed exercised. If the Agreement does not so provide, the Option shall be deemed exercised and the Corresponding SAR shall expire unexercised.

14.09 Effect of Termination Date on Options, SARs and Other Stock-Based Awards in the Nature of Purchase Rights

(a) If a Participant incurs a Termination Date due to death or Disability, any unexercised Option, SAR or Other Stock-Based Award in the nature of purchase rights granted to the Participant may thereafter be exercised by the Participant (or, where appropriate, a transferee of the Participant), to the extent then exercisable, (i) for a period of twelve (12) months after the Termination Date or (ii) until the expiration of the stated term of the Option, SAR or Other Stock-Based Award in the nature of purchase rights, whichever period is shorter, unless specifically provided otherwise in the applicable Agreement (in which case the terms of the Agreement shall control). Any portion of the Option, SAR or Other Stock-Based Award in the nature of purchase rights that remains unexercised after the expiration of such period, regardless of whether such portion of the Option, SAR or Other Stock-Based Award in the nature of purchase rights is vested or unvested, shall terminate and be forfeited with no further compensation due to the Participant.

(b) If a Participant incurs a Termination Date due to Retirement, any unexercised Option, SAR or Other Stock-Based Award in the nature of purchase rights granted to the Participant may thereafter be exercised by the Participant (or, where appropriate, a transferee of the Participant), to the extent then exercisable, (i) for a period of twelve (12) months after the Termination Date or (ii) until the expiration of the stated term of the Option, SAR or Other Stock-Based Award in the nature of purchase rights, whichever period is shorter, unless specifically provided otherwise in the applicable Agreement (in which case the terms of the Agreement shall control). Any portion of the Option, SAR or Other Stock-Based Award in the nature of purchase rights that remains unexercised after the expiration of such period described above, regardless of whether such portion of the Option, SAR or Other Stock-Based Award in the nature of purchase rights is vested or unvested, shall terminate and be forfeited with no further compensation due to the Participant.

(c) If a Participant incurs a Termination Date, other than on death, Disability or Retirement, as a result of termination of service by the Company and its Affiliates involuntarily and without Cause, any unexercised Option, SAR or Other Stock-Based Award in the nature of purchase rights granted to the Participant may thereafter be exercised by the Participant (or, where appropriate, a transferee of the Participant), to the extent then exercisable (i) for a period of ninety (90) days after the Termination Date or (ii) until the expiration of the stated term of the Option, SAR or Other Stock-Based Award in the nature of purchase rights, whichever period is shorter, unless specifically provided otherwise in the applicable Agreement (in which case the terms of the Agreement shall control). Any portion of the Option, SAR or Other Stock-Based Award in the nature of purchase rights that remains unexercised at the expiration of such period described above, regardless of whether such portion of the Option, SAR or Other Stock-Based Award in the nature of purchase rights is vested or unvested, shall terminate and be forfeited with no further compensation due to the Participant.

(d) If a Participant incurs a Termination Date for any reason, other than death, Disability or Retirement, other than as the result of termination of service by the Company and its Affiliates involuntarily and without Cause, and other than as the result of termination of service by the Company and its Affiliates involuntarily and with Cause, any unexercised Option, SAR or Other Stock-Based Award in the nature of purchase rights granted to the Participant may thereafter be exercised by the Participant (or, where appropriate, a transferee of the Participant), to the extent exercisable as of the Termination Date, (i) for a period of ninety (90) days after the Termination Date, or (ii) until the expiration of the stated term of the Option, SAR or Other Stock-Based Award in the nature of purchase rights, whichever period is shorter, unless specifically provided otherwise in the applicable Agreement (in which case the terms of the Agreement shall control). Any portion of the Option, SAR or Other Stock-Based Award in the nature of purchase rights that remains unexercised after the expiration of such period, regardless of whether such portion of the Option, SAR or Other Stock-Based Award in the nature of purchase rights is vested or unvested, shall terminate and be forfeited with no further compensation due to the Participant.

14.10 Non U. S. Participants

The Committee may grant Awards to Participants located outside of the United States of America. Notwithstanding any other provision of the Plan (other than the limitations of Section 6.02 and Section 19.13) the terms of such Awards shall be as the Committee, in its sole discretion, determines as appropriate and permitted under the law that applies to any Award granted to Participants located outside of the United States of America.

ARTICLE XV. PERFORMANCE-BASED COMPENSATION

15.01 Performance Conditions

In accordance with the Plan, the Committee may prescribe that Awards will become exercisable, nonforfeitable and transferable, and earned and payable, based on performance conditions established by the Committee. An Award may become exercisable, nonforfeitable and transferable or earned and payable contingent on the Participant's continued service, and/or service at the time the Award becomes exercisable, nonforfeitable and transferable or earned and payable, in addition to the performance conditions described above. The Committee shall have the sole discretion to select one or more periods of time over which the attainment of one or more of the foregoing performance conditions will be measured for the purpose of determining a Participant's right to, and the settlement of, an Award that will become exercisable, nonforfeitable and transferable or earned and payable based on performance conditions.

15.02 Establishing the Amount of the Award

The amount of the Award that will become exercisable, nonforfeitable and transferable or earned and payable if the performance conditions are obtained (or an objective formula for, or method of, computing such amount) also must be established at the time set forth in Section 15.01 above. Notwithstanding the preceding sentence, the Committee may, in its sole discretion, reduce the amount of the Award that will become exercisable, nonforfeitable and transferable or earned and payable, as applicable, if the Committee determines that such reduction is appropriate under the facts and circumstances. In no event shall the Committee have the discretion to increase the amount of the Award that will become exercisable, nonforfeitable and transferable or earned and payable.

15.03 Earning the Award

If the Committee, on the date of grant, prescribes that an Award shall become exercisable, nonforfeitable and transferable or earned and payable only upon the attainment of one or more performance conditions, the Award shall become exercisable, nonforfeitable and transferable or earned and payable only to the extent that the Committee certifies that such conditions have been achieved.

ARTICLE XVI.
ADJUSTMENT UPON CHANGE IN COMMON STOCK

16.01 General Adjustments

The maximum number of shares of Common Stock that may be issued pursuant to Awards and the terms of outstanding Awards shall be adjusted as the Committee shall determine to be equitably required in the event (a) there occurs a reorganization, recapitalization, stock split, spin-off, split-off, stock dividend, issuance of stock rights, combination of shares, merger, consolidation or distribution (stock or cash) to stockholders other than an ordinary cash dividend; (b) the Company engages in a transaction Code Section 424 describes; or (c) there occurs any other transaction or event which, in the judgment of the Board, necessitates such action. In that respect, the Committee shall make such adjustments as are necessary in the number or kind of shares of Common Stock or securities which are subject to the Award, the exercise price or Initial Value of the Award and such other adjustments as are appropriate in the discretion of the Committee. Such adjustments may provide for the elimination of fractional shares that might otherwise be subject to Awards without any payment therefor. Notwithstanding the foregoing, the conversion of one or more outstanding shares of preferred stock or convertible debentures that the Company may issue from time to time into Common Stock shall not in and of itself require any adjustment under this Article XVI. In addition, the Committee may make such other adjustments to the terms of any Awards to the extent equitable and necessary to prevent an enlargement or dilution of the Participant's rights thereunder as a result of any such event or similar transaction. Any determination made under this Article XVI by the Committee shall be final and conclusive.

16.02 No Adjustments

The issuance by the Company of stock of any class, or securities convertible into stock of any class, for cash or property, or for labor or services, either upon direct sale or upon the exercise of rights or warrants to subscribe therefor, or upon conversion of stock or obligations of the Company convertible into such stock or other securities, shall not affect, and no adjustment by reason thereof shall be made with respect to, the maximum number of shares that may be issued pursuant to Awards.

16.03 Substitute Awards

The Committee may grant Awards in substitution for Options, SARs, restricted stock, Restricted Stock Units, Incentive Awards or similar Awards held by an individual who becomes an employee of the Company or an Affiliate in connection with a transaction described in the first paragraph of Section 16.01. Notwithstanding any provision of the Plan (other than the limitation of Section 6.02), the terms of such substituted Awards shall be as the Committee, in its discretion, determines is appropriate.

16.04 Limitation on Adjustments

Notwithstanding the foregoing, no adjustment hereunder shall be authorized or made if and to the extent the existence of such authority or action (a) would cause a Non-409A Award to be subject to Section 409A of the Code, (b) would violate Code Section 409A for a 409A Award, or (c) would adversely affect any exemption under Rule 16b-3 of the Exchange Act, unless the Committee determines that such adjustment is necessary and specifically acknowledges that the adjustment will be made notwithstanding any such result.

ARTICLE XVII.
COMPLIANCE WITH LAW AND APPROVAL OF REGULATORY BODIES

17.01 Compliance

No Option or SAR shall be exercisable, no Restricted Stock Award, Restricted Stock Unit, Incentive Award, Other Stock-Based Award, Dividend Equivalents or Cash Awards shall be granted or settled, no shares of

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Common Stock shall be issued, no certificates for shares of Common Stock shall be delivered and no payment shall be made under this Plan except in compliance with all applicable federal and state laws and regulations (including, without limitation, withholding tax requirements), any listing agreement to which the Company is a party and the rules of all domestic stock exchanges on which the Company's shares may be listed. The Company shall have the right to rely on an opinion of its counsel as to such compliance. Any stock certificate evidencing shares of Common Stock issued pursuant to an Award may bear such legends and statements as the Committee may deem advisable to assure compliance with federal and state laws and regulations and to reflect any other restrictions applicable to such shares as the Committee otherwise deems appropriate. No Option or SAR shall be exercisable, no Restricted Stock Award, Restricted Stock Unit, Incentive Award, Other Stock-Based Award, Dividend Equivalents or Cash Awards shall be granted or settled, no shares of Common Stock shall be issued, no certificate for shares of Common Stock shall be delivered and no payment shall be made under this Plan until the Company has obtained such consent or approval as the Committee may deem advisable from regulatory bodies having jurisdiction over such matters.

17.02 Postponement of Exercise or Payment

The Committee may postpone any grant, exercise, vesting or payment of an Award for such time as the Committee in its sole discretion may deem necessary in order to permit the Company (i) to effect, amend or maintain any necessary registration of the Plan or the shares of Common Stock issuable pursuant to the Award under the securities laws; (ii) to take any action in order to (A) list such shares of Common Stock or other shares of stock of the Company on a stock exchange if shares of Common Stock or other shares of stock of the Company are not then listed on such exchange or (B) comply with restrictions or regulations incident to the maintenance of a public market for its shares of Common Stock or other shares of stock of the Company, including any rules or regulations of any stock exchange on which the shares of Common Stock or other shares of stock of the Company are listed; (iii) to determine that such shares of Common Stock in the Plan are exempt from such registration or that no action of the kind referred to in (ii)(B) above needs to be taken; (iv) to comply with any other applicable law, including without limitation, securities laws; (v) to comply with any legal or contractual requirements during any such time the Company or any Affiliate is prohibited from doing any of such acts under applicable law, including without limitation, during the course of an investigation of the Company or any Affiliate, or under any contract, loan agreement or covenant or other agreement to which the Company or any Affiliate is a party or (vi) to otherwise comply with any prohibition on such acts or payments during any applicable blackout period; and the Company shall not be obligated by virtue of any terms and conditions of any Agreement or any provision of the Plan to recognize the grant, exercise, vesting or payment of an Award or to grant, sell or issue shares of Common Stock or make any such payments in violation of the securities laws or the laws of any government having jurisdiction thereof or any of the provisions hereof. Any such postponement shall not extend the term of the Award and neither the Company nor its directors and officers nor the Committee shall have any obligation or liability to any Participant or to any other person with respect to shares of Common Stock or payments as to which the Award shall lapse because of such postponement.

17.03 Forfeiture or Reimbursement

A Participant shall be required to forfeit any and all rights under Awards or to reimburse the Company for any payment under any Award (with interest as necessary to avoid imputed interest or original issue discount under the Code or as otherwise required by applicable law) to the extent applicable law or any applicable claw-back or recoupment policy of the Company or any of its Affiliates requires such forfeiture or reimbursement.

ARTICLE XVIII. LIMITATION ON BENEFITS

Despite any other provisions of this Plan to the contrary, if the receipt of any payments or benefits under this Plan would subject a Participant to tax under Code Section 4999, the Committee may determine whether some

amount of payments or benefits would meet the definition of a “Reduced Amount.” If the Committee determines that there is a Reduced Amount, the total payments or benefits to the Participant under all Awards must be reduced to such Reduced Amount, but not below zero. It is the intention of the Company and the Participant to reduce the payments under this Plan only if the aggregate Net After Tax Receipts to the Participant would thereby be increased. If the Committee determines that the benefits and payments must be reduced to the Reduced Amount, the Company must promptly notify the Participant of that determination, with a copy of the detailed calculations by the Committee. All determinations of the Committee under this Article XVIII are final, conclusive and binding upon the Company and the Participant. As result of the uncertainty in the application of Code Section 4999 at the time of the initial determination by the Committee under this Article XVIII, however, it is possible that amounts will have been paid under the Plan to or for the benefit of a Participant which should not have been so paid (“Overpayment”) or that additional amounts which will not have been paid under the Plan to or for the benefit of a Participant could have been so paid (“Underpayment”), in each case consistent with the calculation of the Reduced Amount. If the Committee, based either upon the assertion of a deficiency by the Internal Revenue Service against the Company or the Participant, which the Committee believes has a high probability of success, or controlling precedent or other substantial authority, determines that an Overpayment has been made, any such Overpayment must be treated for all purposes as a loan, to the extent permitted by applicable law, which the Participant must repay to the Company together with interest at the applicable federal rate under Code Section 7872(f)(2); provided, however, that no such loan may be deemed to have been made and no amount shall be payable by the Participant to the Company if and to the extent such deemed loan and payment would not either reduce the amount on which the Participant is subject to tax under Code Sections 1, 3101 or 4999 or generate a refund of such taxes. If the Committee, based upon controlling precedent or other substantial authority, determines that an Underpayment has occurred, the Committee must promptly notify the Company of the amount of the Underpayment, which then shall be paid promptly to the Participant but no later than the end of the Participant’s taxable year next following the Participant’s taxable year in which the determination is made that the Underpayment has occurred. For purposes of this Section, (a) “Net After Tax Receipt” means the Present Value of a payment under this Plan net of all taxes imposed on Participant with respect thereto under Code Sections 1, 3101 and 4999, determined by applying the highest marginal rate under Code Section 1 which applies to the Participant’s taxable income for the applicable taxable year; (b) “Present Value” means the value determined in accordance with Code Section 280G(d)(4); and (c) “Reduced Amount” means the smallest aggregate amount of all payments and benefits under this Plan which (i) is less than the sum of all payments and benefits under this Plan and (ii) results in aggregate Net After Tax Receipts which are equal to or greater than the Net After Tax Receipts which would result if the aggregate payments and benefits under this Plan were any other amount less than the sum of all payments and benefits to be made under this Plan.

ARTICLE XIX.
GENERAL PROVISIONS

19.01 Effect on Service

Neither the adoption of this Plan, its operation nor any documents describing or referring to this Plan (or any part thereof), shall confer upon any individual or entity any right to continue in the service of the Company or an Affiliate or in any way affect any right and power of the Company or an Affiliate to terminate the service of any individual or entity at any time with or without assigning a reason therefor.

19.02 Unfunded Plan

This Plan, insofar as it provides for Awards, shall be unfunded, and the Company shall not be required to segregate any assets that may at any time be represented by Awards under this Plan. Any liability of the Company to any Person with respect to any Award under this Plan shall be based solely upon any contractual obligations that may be created pursuant to this Plan. No such obligation of the Company shall be deemed to be secured by any pledge of, or other encumbrance on, any property of the Company.

19.03 Rules of Construction

Headings are given to the articles and sections of this Plan solely as a convenience to facilitate reference. The reference to any statute, regulation or other provision of law shall be construed to refer to any amendment to or successor of such provision of law.

19.04 Tax Withholding and Reporting

Unless an Agreement provides otherwise, each Participant shall be responsible for satisfying in cash or cash equivalent any income and employment (including, without limitation, Social Security and Medicare) tax withholding obligations, if applicable, attributable to participation in the Plan and the grant, exercise, vesting or payment of Awards granted hereunder (including the making of a Code Section 83(b) election with respect to an Award). In accordance with procedures that the Committee establishes, the Committee, to the extent applicable law permits, may allow a Participant to pay any such applicable amounts (a) by surrendering (actually or by attestation) shares of Common Stock that the Participant already owns and, if necessary to avoid adverse accounting consequences, has held for at least six (6) months (but only for the minimum required withholding); (b) by a cashless exercise, or surrender of shares of Common Stock already owned, through a broker; (c) by means of a “net exercise” procedure by the surrender of shares of Common Stock to which the Participant is otherwise entitled under the Award (but only for the minimum required withholding); (d) by such other medium of payment as the Committee, in its discretion, shall authorize; or (e) by any combination of the aforementioned methods of payment. The Company shall comply with all such reporting and other requirements relating to the administration of this Plan and the grant, exercise, vesting or payment of any Award hereunder as applicable law requires.

19.05 Code Section 83(b) Election

The Committee must approve in advance whether a Participant may make an election under Section 83(b) of the Code with respect to any Award (to include in gross income in the year of transfer the amounts specified in Code Section 83(b)) or under similar laws may be made. In any case in which a Participant is permitted to make such an election in connection with an Award, the Participant shall notify the Company of such election within ten (10) days of filing notice of the election with the Internal Revenue Service or other governmental authority, in addition to any filing and notification required pursuant to regulations issued under Code Section 83(b) or other applicable provisions.

19.06 Reservation of Shares

The Company, during the term of this Plan, shall at all time reserve and keep available such number of shares of Common Stock as shall be sufficient to satisfy the requirements of the Plan. Additionally, the Company, during the term of this Plan, shall use its best efforts to seek to obtain from appropriate regulatory agencies any requisite authorizations needed in order to issue and to sell such number of shares of Common Stock as shall be sufficient to satisfy the requirements of the Plan. However, the inability of the Company to obtain from any such regulatory agency the requisite authorizations the Company’s counsel deems to be necessary for the lawful issuance and sale of any shares of Common Stock hereunder, or the inability of the Company to confirm to its satisfaction that any issuance and sale of any shares of Common Stock hereunder will meet applicable legal requirements, shall relieve the Company of any liability in respect to the failure to issue or to sell such shares of Common Stock as to which such requisite authority shall not have been obtained.

19.07 Governing Law

This Plan and all Awards granted hereunder shall be governed by the laws of the State of Delaware, except to the extent federal law applies.

19.08 Other Actions

Nothing in the Plan shall be construed to limit the authority of the Company to exercise its corporate rights and powers, including, by way of illustration and not by way of limitation, the right to grant Options, SARs, Restricted Stock Awards, Restricted Stock Units, Incentive Awards, Other Stock-Based Awards or Dividend Equivalents for proper corporate purposes otherwise than under the Plan to any Person, firm, corporation, association or other entity, or to grant Options, SARs, Restricted Stock Awards, or Restricted Stock Units, Incentive Awards, Other Stock-Based Awards or Dividend Equivalents to, or assume such Awards of any Person in connection with, the acquisition, purchase, lease, merger, consolidation, reorganization or otherwise, of all or any part of the business and assets of any Person, firm, corporation, association or other entity.

19.09 Repurchase of Common Stock

Subject to Section 19.13 below, the Company or its designee may have the option and right to purchase any Award or any shares of Common Stock issued pursuant to any Award in accordance with the terms and conditions set forth in the applicable Agreement. However, shares of Common Stock repurchased pursuant to an Agreement will still be deemed issued pursuant to the Plan and will not be available for issuance pursuant to future Awards under the Plan (not counting for this purpose any shares of Common Stock repurchased in connection with the lapse or forfeiture of any Restricted Stock Award).

19.10 Other Conditions

The Committee, in its discretion, may require the Participant on or before the date of grant, exercise, payment or settlement of an Award to enter into (i) a confidentiality, non-solicitation, non-competition, non-disparagement or other similar agreement with the Company or any Affiliate, which may become effective on the date of termination of service of the Participant with the Company or any Affiliate or any other date the Committee may specify and shall contain such terms and conditions as the Committee shall otherwise specify, (ii) an agreement to cancel any other service agreement, fringe benefit or compensation arrangement in effect between the Company or any Affiliate and such Participant and/or (iii) a shareholders' agreement with respect to shares of Common Stock to be issued pursuant to the Award. If the Participant should fail to enter into any such agreement at the Committee's request, then no Award shall be granted, exercised, paid or settled and the number of shares of Common Stock that would have been subject to such Award, if any, shall be added to the remaining shares of Common Stock available under the Plan. In the event the Participant should enter into any such confidentiality, non-solicitation, non-competition, non-disparagement or other similar agreement with the Company or any Affiliate, as a condition to the grant, exercise, payment or settlement of the Award, and the Participant subsequently breach or violate any provision of such agreement, then the Participant shall forfeit any and all further rights under such Award and the Clawback Requirement shall be triggered.

19.11 Forfeiture Provisions

Notwithstanding any other provisions of the Plan or any Agreement, all rights to any Award that a Participant has will be immediately discontinued and forfeited, and the Company shall not have any further obligation hereunder to the Participant with respect to any Award and the Award will not be exercisable (whether or not previously exercisable) or become vested or payable on and after the time the Participant is discharged from service with the Company or any Affiliate for Cause.

19.12 Legends; Payment of Expenses

The Company may endorse such legend or legends upon the certificates for shares of Common Stock issued upon the grant or exercise of an Award and may issue such "stop transfer" instructions to its transfer agent in respect of such shares as it determines, in its sole discretion, to be necessary or appropriate to (i) prevent a violation of, or to perfect an exemption from, the registration requirements under the Exchange Act, applicable

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state securities laws or other requirements, (b) implement the provisions of the Plan or any Agreement between the Company and the Participant with respect to such shares of Common Stock, or (c) as may be appropriate to continue an Award's exemption or compliance with Section 409A of the Code. The Company shall pay all issuance taxes with respect to the issuance of shares of Common Stock upon the grant or exercise of the Award, as well as all fees and expenses incurred by the Company in connection with such issuance.

19.13 Repricing of Awards

Notwithstanding any other provisions of this Plan, except for adjustments pursuant to Article XVI or to the extent approved by the Company's stockholders and consistent with the rules of any stock exchange on which the Company's securities are traded, this Plan does not permit (a) any decrease in the exercise or purchase price or base value of any outstanding Awards, (b) the issuance of any replacement Options, SARs or Other Stock-Based Awards in the nature of purchase rights which shall be deemed to occur if a Participant agrees to forfeit an existing Option, SAR or Other Stock-Based Award in the nature of purchase rights in exchange for a new Option, SAR or Other Stock-Based Award in the nature of purchase rights with a lower exercise or purchase price or base value, (c) the Company to repurchase underwater or out-of-the-money Options, SARs or Other Stock-Based Awards in the nature of purchase rights, which shall be deemed to be those Options, SARs or Other Stock-Based Awards in the nature of purchase rights with exercise or purchase prices or base values in excess of the current Fair Market Value of the shares of Common Stock underlying the Option, SAR or Other Stock-Based Award in the nature of purchase rights, (d) the issuance of any replacement or substitute Awards or the payment of cash in exchange for, or in substitution of, underwater or out-of-the-money Options, SARs or Other Stock-Based Awards in the nature of purchase rights, (e) the Company to repurchase any Award if the Award has not become exercisable, vested or payable prior to the repurchase or (f) any other action that is treated as a repricing under generally accepted accounting principles.

19.14 Right of Setoff

The Company or an Affiliate may, to the extent permitted by applicable law, deduct from and setoff against any amounts the Company or Affiliate may owe the Participant from time to time, including amounts payable in connection with any Award, owed as wages, fringe benefits or other compensation owed to the Participant, such amounts as may be owed by the Participant to the Company or Affiliate, including but not limited to any amounts owed under the Plan, although the Participant shall remain liable for any part of the Participant's obligation not satisfied through such deduction and setoff. By accepting any Award granted hereunder, the Participant agrees to any deduction or setoff hereunder.

19.15 Fractional Shares

No fractional shares of Common Stock shall be issued or delivered pursuant to the Plan or any Award. The Committee shall determine whether cash, other Awards or other property shall be issued or paid in lieu of such fractional shares or whether such fractional shares or any rights thereof shall be forfeited or otherwise eliminated.

ARTICLE XX. CLAIMS PROCEDURES

20.01 Initial Claim

If a Participant has exercised an Option or SAR or if shares of Restricted Stock have become vested or Restricted Stock Units, Incentive Awards, Other Stock-Based Awards or Dividend Equivalents have become payable, and the Participant has not received the benefits to which the Participant believes he or she is entitled under such Award, then the Participant must submit a written claim for such benefits to the Committee within

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ninety (90) days of the date the Participant tried to exercise the Option or SAR, the date the Participant contends the Restricted Stock vested or the date the Participant contends the Restricted Stock Units, Incentive Awards, or Other Stock-Based Awards of Dividend Equivalents became payable or the claim will be forever barred.

20.02 Appeal of Claim

If a claim of a Participant is wholly or partially denied, the Participant or his duly authorized representative may appeal the denial of the claim to the Committee. Such appeal must be made at any time within thirty (30) days after the Participant receives written notice from the Company of the denial of the claim. In connection therewith, the Participant or his duly authorized representative may request a review of the denied claim, may review pertinent documents and may submit issues and comments in writing. Upon receipt of an appeal, the Committee shall make a decision with respect to the appeal and, not later than sixty (60) days after receipt of such request for review, shall furnish the Participant with the decision on review in writing, including the specific reasons for the decision written in a manner calculated to be understood by the Participant, as well as specific references to the pertinent provisions of the Plan upon which the decision is based.

20.03 Time to File Suit

The Committee has the discretionary and final authority under the Plan to determine the validity of a claim. Accordingly, any decision the Committee makes on a Participant's appeal will be administratively final. If a Participant disagrees with the Committee's final decision, the Participant may sue, but only after the claim on appeal has been denied. Any lawsuit must be filed within ninety (90) days of receipt of the Committee's final written denial of the Participant's claim or the claim will be forever barred.

ARTICLE XXI. **AMENDMENT**

21.01 Amendment of Plan

The Board may amend or terminate this Plan at any time; provided, however, that no amendment to the Plan may materially adversely impair the rights of a Participant with respect to outstanding Awards without the Participant's consent. In addition, an amendment will be contingent on approval of the Company's stockholders, to the extent required by law or any tax or regulatory requirement applicable to the Plan or by the rules of any stock exchange on which the Company's securities are traded or if the amendment would (i) increase the benefits accruing to Participants under the Plan, including without limitation, any amendment to the Plan or any Agreement to permit a repricing of any outstanding Awards under Section 19.13, (ii) increase the aggregate number of shares of Common Stock that may be issued under the Plan, (iii) modify the requirements as to eligibility for participation in the Plan, or (iv) change the performance conditions set forth in Article XV of the Plan for Awards that intended to constitute "qualified performance-based compensation" within the meaning of Section 162(m) of the Code. Additionally, to the extent the Board deems necessary to continue to comply with the performance-based exception to the deduction limits of Code Section 162(m), the Board will resubmit the material terms of the performance conditions set forth in Article XV to the Company's stockholders for approval no later than the first stockholder meeting that occurs in the fifth (5th) year following the year in which the stockholders previously approved the performance objectives. Notwithstanding any other provision of the Plan, any termination of the Plan shall comply with the requirements of Code Section 409A with regard to any 409A Awards.

21.02 Amendment of Awards

The Committee may amend any outstanding Awards to the extent it deems appropriate; provided, however, that no amendment to an outstanding Award may adversely impair the rights of a Participant without the Participant's consent.

ARTICLE XXII.
SECTION 409A PROVISION

22.01 Intent of Awards

It is intended that Awards that are granted under the Plan shall be exempt from treatment as “deferred compensation” subject to Section 409A of the Code unless otherwise specified by the Committee. Towards that end, all Awards under the Plan are intended to contain such terms as will qualify the Awards for an exemption from Section 409A of the Code unless otherwise specified by the Committee. The terms of the Plan and all Awards granted hereunder shall be construed consistent with the foregoing intent. Notwithstanding any other provision hereof, the Committee may amend any outstanding Award without Participant’s consent if, as determined by the Committee, in its sole discretion, such amendment is required either to (a) confirm exemption under Section 409A of the Code, (b) comply with Section 409A of the Code or (c) prevent the Participant from being subject to any tax or penalty under Section 409A of the Code. Notwithstanding the foregoing, however, neither the Company nor any of its Affiliates nor the Committee shall be liable to a Participant or any other Person if an Award that is subject to Section 409A of the Code or the Participant or any other Person is otherwise subject to any additional tax, interest or penalty under Section 409A of the Code. Each Participant is solely responsible for the payment of any tax liability (including any taxes, penalties and interest that may arise under Section 409A of the Code) that may result from an Award.

22.02 409A Awards

The Committee may grant Awards under the Plan that are intended to be 409A Awards that comply with Section 409A of the Code. The terms of such 409A Award, including any authority by the Company and the rights of the Participant with respect to such 409A Award, will be subject to such rules and limitations and shall be interpreted in a manner as to comply with Section 409A of the Code.

22.03 Election Requirements

If a Participant is permitted to elect to defer an Award or any payment under an Award, such election shall be made in accordance with the requirements of Code Section 409A. Each initial deferral election (an “Initial Deferral Election”) must be received by the Committee prior to the following dates or will have no effect whatsoever:

(a) Except as otherwise provided below, the December 31 immediately preceding the year in which the compensation is earned;

(b) With respect to any annual or long-term incentive pay which qualifies as “performance-based compensation” within the meaning of Code Section 409A, by the date six (6) months prior to the end of the performance measurement period applicable to such incentive pay provided such additional requirements set forth in Code Section 409A are met;

(c) With respect to “fiscal year compensation” as defined under Code Section 409A, by the last day of the Company’s fiscal year immediately preceding the year in which the fiscal year compensation is earned; or

(d) With respect to mid-year Awards or other legally binding rights to a payment of compensation in a subsequent year that is subject to a forfeiture condition requiring the Participant’s continued service for a period of at least twelve (12) months, on or before the thirtieth (30th) day following the grant of such Award, provided that the election is made at least twelve (12) months in advance of the earliest date at which the forfeiture condition could lapse.

The Committee may, in its sole discretion, permit Participants to submit additional deferral elections in order to delay, but not to accelerate, a payment, or to change the form of payment of an amount of deferred

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compensation (a “Subsequent Deferral Election”), if, and only if, the following conditions are satisfied: (a) the Subsequent Deferral Election must not take effect until twelve (12) months after the date on which it is made, (b) in the case of a payment other than a payment attributable to the Participant’s death, disability or an unforeseeable emergency (all within the meaning of Section 409A of the Code) the Subsequent Deferral Election further defers the payment for a period of not less than five (5) years from the date such payment would otherwise have been made and (c) the Subsequent Deferral Election is received by the Committee at least twelve (12) months prior to the date the payment would otherwise have been made. In addition, Participants may be further permitted to revise the form of payment they have elected, or the number of installments elected, provided that such revisions comply with the requirements of a Subsequent Deferral Election.

22.04 Time of Payment

The time and form of payment of a 409A Award shall be as set forth in an applicable Agreement. A 409A Award may only be paid in connection with a separation from service, a fixed time, death, disability, Change in Control or an unforeseeable emergency within the meaning of Section 409A of the Code. The time of distribution of the 409A Award must be fixed by reference to the specified payment event. Notwithstanding the foregoing, if the time of distribution of the 409A Award is not set forth in the applicable Agreement, then the time of distribution of the 409A Award shall be within two and one-half months of the end of the later of the calendar year or the fiscal year of the Company or Affiliate that employs the Participant in which the 409A Award becomes vested and no longer subject to a substantial risk of forfeiture within the meaning of Code Section 409A. For purposes of Code Section 409A, each installment payment will be treated as the entitlement to a single payment.

22.05 Acceleration or Deferral

The Company shall have no authority to accelerate or delay or change the form of any distributions relating to 409A Awards except as permitted under Code Section 409A.

22.06 Distribution Requirements

Any distribution of a 409A Award triggered by a Participant’s termination of service shall be made only at the time that the Participant has had a separation from service within the meaning of Code Section 409A. A separation from service shall occur where it is reasonably anticipated that no further services will be performed after that date or that the level of bona fide services the Participant will perform after that date (whether as an employee or independent contractor of the Company or an Affiliate) will permanently decrease to less than fifty percent (50%) of the average level of bona fide services performed over the immediately preceding thirty-six (36) month period. A Participant shall be considered to have continued employment and to not have a separation from service while on a leave of absence if the leave does not exceed six (6) consecutive months (twenty-nine (29) months for a disability leave of absence) or, if longer, so long as the Participant retains a right to reemployment with the Company or Affiliate under an applicable statute or by contract. For this purpose, a “disability leave of absence” is an absence due to any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than six (6) months, where such impairment causes the Participant to be unable to perform the duties of Participant’s position of employment or a substantially similar position of employment. Continued services solely as a director of the Company or an Affiliate shall not prevent a separation from service from occurring by an employee as permitted by Section 409A of the Code.

22.07 Key Employee Rule

Notwithstanding any other provision of the Plan, any distribution of a 409A Award that would be made upon a separation from service within six (6) months following the separation from service of a “specified employee” as defined under Code Section 409A and as determined under procedures adopted by the Board or its

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delegate shall instead occur on the first day of the seventh month following the separation from service (or upon the Participant's death, if earlier) to the extent required by Section 409A of the Code. In the case of installments, this delay shall not affect the timing of any installment otherwise payable after the requisite delay period.

22.08 Distributions Upon Vesting

In the case of any Award providing for a distribution upon the lapse of a substantial risk of forfeiture, if the timing of such distribution is not otherwise specified in the Plan or the applicable Agreement, the distribution shall be made not later than two and one-half (2 1/2) months after the calendar year in which the risk of forfeiture lapsed.

22.09 Scope and Application of this Provision

For purposes of this Article XXII, references to a term or event (including any authority or right of the Company or a Participant) being "permitted" under Code Section 409A means that the term or event will not cause the Participant to be deemed to be in constructive receipt of compensation relating to the 409A Award prior to the distribution of cash, shares of Common Stock or other property or to be liable for payment of interest or a tax penalty under Code Section 409A.

**ARTICLE XXIII.
EFFECTIVE DATE OF PLAN**

The Plan is effective on the date of its adoption by the Board, contingent on the approval of the Plan by the Company's stockholders within twelve (12) months after such date. Awards, other than Restricted Stock or outright grants of shares on Common Stock, may be granted under this Plan on and after the effective date, provided that no Award shall become exercisable, vested, earned or payable unless the Company's stockholders approve the Plan within twelve (12) months after the Board's adoption of the Plan. Restricted Stock and outright grants of shares of Common Stock may only be granted after the Company's stockholders approve the Plan.

**ARTICLE XXIV.
DURATION OF PLAN**

No Award may be granted under this Plan on and after ten (10) years following the effective date of the Plan. Awards granted before that date shall remain valid in accordance with their terms.

Annex B

**ARTICLES OF AMENDMENT
OF
AMENDED AND RESTATED ARTICLES OF INCORPORATION
OF
INTREXON CORPORATION**

The undersigned, on behalf of the corporation set forth below, pursuant to Title 13.1, Chapter 9, Article 11 of the Code of Virginia, states as follows:

1. The name of the corporation is Intrexon Corporation (the "Corporation").
2. The Amended and Restated Articles of Incorporation of the Corporation, as amended to date, are hereby amended by replacing Article III.B in its entirety with the following:

"The aggregate number of shares that the Corporation shall have authority to issue shall be 25,000,000 shares of Preferred Stock, no par value per share (hereinafter called "Preferred Stock"), and 400,000,000 shares of Common Stock, no par value per share (hereinafter called "Common Stock")."

3. The foregoing amendment (the "Amendment") was adopted on _____, 2019.

4. The Amendment was proposed by the board of directors of the Corporation (the "Board of Directors") and submitted to the shareholders in accordance with the provisions of Title 13.1, Chapter 9 of the Code of Virginia. Only holders of shares of the Common Stock of the Corporation on April 16, 2019, the record date fixed by the Board of Directors (the "Record Date"), were entitled to vote on the Amendment. The number of shares of Common Stock outstanding on the Record Date, the number of votes entitled to be cast on the Amendment, and the total number of votes cast for and against the Amendment were as follows:

| | |
|-------------------------------------|-------|
| Shares of Common Stock outstanding: | _____ |
| Votes entitled to be cast: | _____ |
| Votes for: | _____ |
| Votes against: | _____ |

The number of votes cast for the Amendment by the holders of shares of Common Stock was sufficient for approval.

[Signature page follows]

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IN WITNESS WHEREOF, the undersigned has caused these Articles of Amendment to be executed in the name of the Corporation as of this day of _____, 2019.

INTREXON CORPORATION

By: _____
Name: Donald P. Lehr
Title: Chief Legal Officer

SCC ID 06154801

INTREXON CORPORATION
20374 SENECA MEADOWS PARKWAY
GERMANTOWN, MD 20876

VOTE BY INTERNET - www.proxyvote.com

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

ELECTRONIC DELIVERY OF FUTURE PROXY MATERIALS

If you would like to reduce the costs incurred by our company in mailing proxy materials, you can consent to receiving all future proxy statements, proxy cards and annual reports electronically via e-mail or the Internet. To sign up for electronic delivery, please follow the instructions above to vote using the Internet and, when prompted, indicate that you agree to receive or access proxy materials electronically in future years.

VOTE BY PHONE - 1-800-690-6903

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

VOTE BY MAIL

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

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

E77693-P23166

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

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

INTREXON CORPORATION

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

| 1. Election of Directors | For | Against | Abstain | | For | Against | Abstain |
|--|--------------------------|--------------------------|--------------------------|---|--------------------------|--------------------------|--------------------------|
| Nominees: | | | | | | | |
| 1a. Randal J. Kirk | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |
| 1b. Cesar L. Alvarez | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1c. Steven R. Frank | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3. To approve a non-binding advisory resolution approving the compensation of the named executive officers; | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1d. Vinita D. Gupta | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 4. To approve an amendment to the Amended and Restated Intrexon Corporation 2013 Omnibus Incentive Plan, which would provide for the availability of an additional five million shares of common stock under the 2013 Plan; | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1e. Fred Hassan | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 5. To approve the Intrexon Corporation 2019 Incentive Plan for Non-Employee Service Providers; | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1f. Jeffrey B. Kindler | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 6. To approve an amendment to the Amended and Restated Articles of Incorporation, which would increase the number of authorized shares of common stock to 400 million; and | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1g. Dean J. Mitchell | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 7. To approve the adjournment of the Annual Meeting, if necessary, if a quorum is present, to solicit additional proxies if there are not sufficient votes to approve Proposal 6. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1h. Robert B. Shapiro | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |
| 1i. James S. Turley | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |
| 2. To ratify the appointment by the Audit Committee of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019; | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |

NOTE: In their discretion, the proxies are authorized to vote upon any other business that may properly be brought before the Annual Meeting or any adjournments or postponements thereof.

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

Signature [PLEASE SIGN WITHIN BOX] Date

Signature (Joint Owners) Date

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

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

E77694-P23166

**INTREXON CORPORATION
2019 Annual Meeting of Shareholders
June 12, 2019 9:00 AM
This proxy is solicited by the Board of Directors**

The undersigned hereby appoints Mr. Randal J. Kirk, Mr. Donald P. Lehr and Mr. Rick L. Sterling, or any of them, as proxies, each with the full power of substitution, and hereby authorizes them to represent and to vote, as designated on the reverse side of this ballot, all of the shares of Common Stock of INTREXON CORPORATION that the undersigned is entitled to vote at the Annual Meeting of Shareholders to be held at 9:00 AM, EDT on Wednesday, June 12, 2019, at the Esperante Conference Center, 222 Lakeview Avenue, West Palm Beach, FL 33401, 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 FOR all nominees named in the proxy, FOR Proposals 2 through 7 and according to the discretion of the proxy holders on any other matters that may properly come before the meeting or any and all adjournments or postponements thereof.

Continued and to be signed on reverse side