

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 under §240.14a-12

Axcelis Technologies, Inc.

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
 - Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.
 - (1) Title of each class of securities to which transaction applies: _____
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 - (4) Proposed maximum aggregate value of transaction: _____
 - (5) Total fee paid: _____
 - Fee paid previously with preliminary materials.
 - Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.
 - (1) Amount Previously Paid: _____
 - (2) Form, Schedule or Registration Statement No.: _____
 - (3) Filing Party: _____
 - (4) Date Filed: _____
-



**NOTICE OF ANNUAL MEETING OF STOCKHOLDERS
to Be Held May 13, 2015**

The 2015 annual meeting of the stockholders of Axcelis Technologies, Inc., a Delaware corporation, will be held at the offices of Locke Lord LLP, 111 Huntington Avenue, Boston, Massachusetts, at 10:30 a.m. on Wednesday, May 13, 2015 for the following purposes:

1. To elect as directors nine nominees to serve until the 2016 annual meeting of stockholders, with the Axcelis Board of Directors' recommended director candidates named in the attached proxy statement.
2. To ratify the appointment of our independent registered public accounting firm to audit our financial statements for the year ending December 31, 2015.
3. To amend the 2012 Equity Incentive Plan to increase the shares reserved for issuance thereunder.
4. To cast a non-binding advisory vote on the compensation of our named executive officers.
5. To transact such other business as may properly come before the meeting or any adjournment thereof.

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

Vertex Opportunities Fund, LP (which we refer to as Vertex) has notified us that it intends to nominate six persons for election as directors to our Board of Directors at the annual meeting in opposition to the nominees recommended by our Board of Directors. You may receive solicitation materials from Vertex, including proxy statements and [color] proxy cards. We are not responsible for the accuracy of any information provided by or relating to Vertex or its nominees contained in solicitation materials filed or disseminated by or on behalf of Vertex or any other statements Vertex may make.

Our Board of Directors does not endorse any Vertex nominee and unanimously recommends that you vote on the **WHITE** proxy card or voting instruction form "FOR ALL" of the nominees proposed by our Board of Directors. The Board of Directors strongly urges you not to sign or return any proxy card sent to you by Vertex. If you have previously submitted a proxy card sent to you by Vertex, you may revoke that proxy and vote for our Board of Directors' nominees and on the other matters to be voted on at the annual meeting by using the enclosed **WHITE** proxy card. Only the latest validly executed proxy that you submit will be counted.

Only stockholders of record at the close of business on March 17, 2015 will be entitled to vote at the annual meeting or at any adjournment.

By order of the Board of Directors,

Dated: March 25, 2015

Lynnette C. Fallon, *Secretary*

YOUR VOTE IS VERY IMPORTANT

It is important that your shares be represented at the meeting. Whether or not you plan to attend the meeting, please complete the **WHITE** proxy card and return it in the enclosed envelope, which requires no postage if mailed in the United States, or use the Internet or telephone method of voting described in your **WHITE** proxy card so that your shares can be voted at the meeting in accordance with your instructions. If you attend the meeting and wish to vote in person, your proxy will not be used.

If you have any questions or require any assistance with voting your shares, please contact our proxy solicitor at the telephone numbers or address set forth below:

MACKENZIE PARTNERS, INC.
105 Madison Avenue
New York, New York 10016
Call Toll-Free (800) 322-2885
Call Collect (212) 929-5500
Email: proxy@mackenziepartners.com

* * * * *

Directions to the offices of Locke Lord LLP at 111 Huntington Avenue, Boston, Massachusetts, can be found at www.lockelord.com, under the Offices/Boston tab.

Stockholders should bring identification and, after checking in with the Security Desk in the building lobby, present themselves at the office's main reception on the 20th floor.

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GENERAL INFORMATION ABOUT VOTING

The Board of Directors of Axcelis Technologies, Inc. ("Axcelis" or the "Company") is soliciting your proxy for use at the 2015 annual meeting of stockholders to be held on Wednesday, May 13, 2015 and at any adjournment of the meeting. This proxy statement and the accompanying **WHITE** proxy card are first being sent or given to stockholders of Axcelis on or about March 25, 2015. The meeting will be held at the offices of Locke Lord LLP, 111 Huntington Avenue, Boston, Massachusetts. Directions to these offices can be found at www.lockelord.com, under the Offices/Boston tab. Stockholders should bring identification and, after checking in with the Security Desk in the building lobby, present themselves at the office's main reception on the 20th floor.

Important Notice Regarding the Availability of Proxy Materials for the Stockholder Meeting to Be Held on May 13, 2015: This proxy statement and our Annual Report to Stockholders are available on our website at: www.axcelis.com/proxy.html.

Who can vote. You may vote your shares of Axcelis common stock at the annual meeting if you were a stockholder of record at the close of business on March 17, 2015. On that date, there were _____ shares of common stock outstanding. You are entitled to one vote for each share of common stock that you held on the record date.

How to vote your shares. You may vote either by proxy or by attending the meeting and voting in person. To vote by proxy, either (A) complete, sign, date and mail the **WHITE** proxy card or voting instruction form or (B) follow the instructions on the **WHITE** card or form for voting online or by telephone. If your shares are held by a nominee (e.g., a bank or broker), you must request a legal proxy from your nominee as proof of ownership in order to vote in person at the meeting.

The proxies named in the proxy card will vote your shares as you have instructed. If you sign and return the **WHITE** proxy card without indicating how your votes should be cast, the proxies will vote your shares in favor of each proposal, as recommended by our Board of Directors. Even if you plan to attend the meeting, please vote by mail, telephone or online as instructed on the **WHITE** proxy card or voting instruction form to ensure that your shares are represented at the meeting. If you attend the meeting, you can still revoke your proxy by voting in person. If your shares are held in a brokerage or bank account, you must make arrangements with your broker or bank to vote your shares in person.

Proposals to be considered at the annual meeting. The principal business expected to be transacted at the meeting, as more fully described below, will be the re-election of six directors whose current terms end in 2015 and the election of three new directors, the ratification of the selection of independent auditors of the Company, the approval of an amendment to the 2012 Equity Incentive Plan, and an advisory vote on executive compensation.

Quorum. A quorum of stockholders is required to transact business at the meeting. A majority of the outstanding shares of common stock entitled to vote, represented at the meeting in person or by proxy, constitutes a quorum for the transaction of business.

Number of votes required and the Axcelis Board of Directors' recommendation. The votes required to approve the proposals that are scheduled to be presented at the meeting and the recommendation of Axcelis' Board of Directors on each are as follows:

| Proposal | Required Vote | Axcelis Board Recommendation |
|---|---|---|
| Election of nine nominees as directors. | Each nominee must receive a plurality of the votes cast. Unless Vertex withdraws its nominees, there will be more nominees than there are open seats on the Board. Accordingly, the nine nominees receiving the highest number of FOR votes will be elected. | "FOR ALL" of the Axcelis Board-recommended nominees named in this proxy statement and on the WHITE proxy card |
| Ratification of the appointment of our independent registered public accounting firm (our "independent auditors") to audit our financial statements for 2015. | This non-binding proposal will be considered approved if more votes are cast in favor than against. | "FOR" ratification |
| Approval of the proposed amendment to the 2012 Equity Incentive Plan. | The amendment will be considered approved if more votes are cast in favor than against. | "FOR" approval |
| Approval of the compensation of our named executive officers as described under "Executive Compensation" in this proxy statement. | This non-binding proposal will be considered approved if more votes are cast in favor than against. | "FOR" approval |

What should you do if you receive a proxy card from Vertex? Vertex has notified us that it intends to nominate six persons for election as directors to the Axcelis Board of Directors at the annual meeting in opposition to the nominees recommended by our Board of Directors. If Vertex proceeds with its alternative nominations, you may receive proxy solicitation materials from Vertex, including an opposition proxy statement and [color] proxy card. Axcelis is not responsible for the accuracy of any information contained in any proxy solicitation materials used by Vertex or any other statements that it may make. Axcelis' Board of Directors does not endorse any Vertex nominee and unanimously recommends that you disregard any proxy card or solicitation materials that may be sent to you by Vertex.

Axcelis' Board of Directors unanimously recommends that you vote **FOR ALL** of the nominees proposed by Axcelis' Board of Directors by using the **WHITE** proxy card accompanying

this proxy statement. The Axcelis Board strongly urges you not to sign or return any proxy card sent to you by Vertex, which would be on a [color] proxy card.

If you have already voted using the [color] proxy card, you have every right to change your vote and vote for the Axcelis Board's nominees and on the other matters to be voted on at the annual meeting. You may do this by voting via the Internet or by telephone following the instructions on the **WHITE** proxy card, or by completing and mailing the enclosed **WHITE** proxy card in the enclosed pre-paid envelope.

Note that voting to "WITHHOLD" with respect to any of Vertex's nominees on a [color] proxy card is not the same as voting for the Axcelis Board's nominees because submitting a [color] proxy card will revoke any **WHITE** proxy you previously submitted. Only the latest validly executed proxy that you submit will be counted.

If you have any questions or require any assistance with voting your shares, please contact our proxy solicitor, MacKenzie Partners, Inc., toll free at (800) 322-2885 or collect at (212) 929-5500.

Abstentions. Abstaining from voting on any of the proposals will reduce the number of votes cast as well as the number of votes in favor so will have no impact on the results of voting.

Broker non-votes. A broker non-vote occurs when a broker cannot vote a customer's shares registered in the broker's name because the customer did not send the broker instructions on how to vote on the matter and the broker is barred by law or stock exchange regulations from exercising its discretionary voting authority in the particular matter. While brokers would normally have voting discretion for shares registered in their own name on the proposal to ratify the appointment of our independent auditors, in light of the contested director election and Vertex's providing competing proxy materials to our shareholders, brokers will have to be instructed on how to vote as to all matters and proposals. Broker non-votes will not be included in the votes cast, so will have no impact on the results of voting with respect to the election of directors and the other proposals.

If your shares are held in a stock brokerage account or by a bank or other nominee. You are considered the beneficial owner of shares held in a brokerage or bank account, and these proxy materials are being forwarded to you by your broker, bank, or other nominee, which is considered the stockholder of record with respect to those shares. As a beneficial owner, you have the right to direct your broker, bank, or other nominee on how to vote the shares in your account. Given the contested nature of the election, **your broker, bank, or other nominee will only be able to vote your shares with respect to any proposals at the annual meeting if you have instructed them how to vote.** Your broker, bank, or other nominee has enclosed a **WHITE** voting instruction form for you to use to direct the broker, bank, or other nominee regarding how to vote your shares. Please instruct your broker, bank, or other nominee how to vote your shares using the **WHITE** voting instruction form. Please return your completed **WHITE** proxy card or voting instruction form to your broker, bank or other nominee and contact the person responsible for your account so that your vote can be counted. If your broker, bank, or other nominee permits you to provide voting instructions via the Internet or by telephone, you may vote that way as well.

Discretionary voting by proxies on other matters. Aside from the proposals for the election of directors, the ratification of our selection of auditors, the approval of an amendment to the 2012 Equity Incentive Plan, and the advisory vote on executive compensation, we do not know of any other proposals that may be presented at the 2015 annual meeting. If another matter is properly presented for consideration at the meeting, the persons named in the accompanying **WHITE** proxy card will exercise their discretion in voting on the matter.

How you may revoke your proxy. You may revoke the authority granted by your executed proxy card at any time before we exercise it by filing with our Corporate Secretary, Lynnette C. Fallon, a written revocation or a duly executed proxy card bearing a later date, or by voting in person at the meeting. If your shares are held in a brokerage account, you must make arrangements with your broker or bank to revoke your proxy.

Expenses of solicitation. We will bear all costs of soliciting proxies. We will upon request reimburse brokers, custodians and fiduciaries for out-of-pocket expenses incurred in forwarding proxy solicitation materials to the beneficial owners of stock held in their names. We have retained the services of MacKenzie Partners, Inc., a professional proxy solicitation firm, to aid in the solicitation of proxies. MacKenzie Partners, Inc. estimates that approximately 35 of its employees will assist in this proxy solicitation, which they may conduct by personal interview, mail, telephone, facsimile, email, other electronic channels of communication, or otherwise. We expect that we will pay its customary fees, estimated not to exceed approximately \$250,000 in the aggregate, plus reasonable out-of-pocket expenses incurred in the process of soliciting proxies. Axcelis' aggregate expenses, including those of MacKenzie Partners, Inc., related to the solicitation in excess of those normally spent for an annual meeting as a result of the potential proxy contest and excluding salaries and wages of our officers and regular employees, are expected to be approximately \$[], of which approximately \$[] has been spent to date. Axcelis has agreed to indemnify MacKenzie Partners, Inc. against certain liabilities relating to or arising out of their engagement. In addition to solicitations by mail, our directors, officers and employees may solicit proxies from stockholders in person or by other means of communication, including telephone, facsimile and e-mail, without additional remuneration.

Householding of Annual Meeting Materials. Some banks, brokers and other nominee record holders may be "householding" our proxy statements and annual reports. This means that only one copy of our proxy statement and annual report to stockholders may have been sent to multiple stockholders in your household. We will promptly deliver a separate copy of either document to you if you call or write us at the following address or telephone number: Axcelis Technologies, Inc., 108 Cherry Hill Drive, Beverly, Massachusetts 01915, Attn: Corporate Secretary, telephone: (978) 787-4000. If you want to receive separate copies of the proxy statement or annual report to stockholders in the future, or if you are receiving multiple copies and would like to receive only one copy per household, you should contact your bank, broker, or other nominee record holder, or you may contact us at the above address and telephone number. Our annual report is also available on our website at www.axcelis.com.

SHARE OWNERSHIP OF 5% STOCKHOLDERS

The following table shows the amount of our common stock beneficially owned as of December 31, 2014 by persons known by us to own more than 5% of our common stock.

| Beneficial Owner (1) | Shares Owned | Percent of Class |
|--|--------------|------------------|
| PRIMECAP Management Company (2) 225 South Lake Ave., #400, Pasadena, CA 91101 | 12,342,000 | 10.96% |
| Donald Smith & Co., Inc. (3) 152 West 57th Street, New York, NY 10019 | 11,135,496 | 9.89% |
| Vertex Capital Advisors, LLC (4) 825 Third Ave. 33rd Floor, New York, NY 10022 | 7,572,759 | 6.72% |
| BlackRock, Inc. (5) 40 East 52 nd Street, New York, NY 10022 | 7,134,431 | 6.34% |

- (1) Unless otherwise noted, the number of shares beneficially owned by each person listed includes any shares over which a person has sole or shared voting or investment power. The percentage ownership of each person listed in the table was calculated using the total number of shares outstanding on December 31, 2014 (112, 615,790 shares).
- (2) Based on a Schedule 13G/A filed with the Securities and Exchange Commission (the "SEC") in February 2015 reporting on ownership as of December 31, 2014. This filing states that PRIMECAP Management Company is a registered investment adviser. According to the Schedule 13G, PRIMECAP Management Company has sole voting power over 11,200,000 shares and sole dispositive power over all of the shares reported in the table.
- (3) Based on a Schedule 13G filed with the Securities and Exchange Commission in February 2015 reporting on ownership as of December 31, 2014, which states that such shares are owned by advisory clients of Donald Smith & Co., Inc., a registered investment adviser. According to the Schedule 13G, Donald Smith & Co., Inc. has sole voting power over 8,548,209 of such shares and the sole power to dispose of all of such shares. According to the Schedule 13G, Donald Smith Value Fund, L.P., Donald Smith Long/Short Equities Fund, L.P. and Velin Mezinev each have sole dispositive power over all the shares reported in the table and sole voting power over 287,600, 40,887, 27,800 of such shares, respectively.
- (4) Based on a Schedule 13D/A filed with the Securities and Exchange Commission in February 2015. Vertex Capital Advisors, LLC ("Vertex Capital") is a registered investment advisor and serves as the investment manager to each of Vertex Opportunities Fund, LP ("Vertex Opportunities"), and Vertex Special Opportunities Fund II, LP ("VSO II"). This filing states that it is a joint filing by Vertex Capital, Vertex Opportunities, VSO II, Vertex GP, LLC (the general partner of Vertex Opportunities), Vertex Special Opportunities GP II, LLC (the general partner of VSO II) and Eric Singer, managing member of each of Vertex GP, VSO GP II and Vertex Capital. According to the Schedule 13D, Vertex Opportunities and its general partner have sole voting and dispositive power over 980,241 shares and VSO II and its general partner have sole voting and dispositive power over 6,592,518 shares, while Vertex Capital and Mr. Singer have sole voting and dispositive power over all shares reported.
- (5) Based on a Schedule 13G/A filed with the Securities and Exchange Commission in January 2015 reporting on ownership as of December 31, 2014. This filing states that BlackRock, Inc. is a holding company whose investment management subsidiaries acquired the shares reported. According to the Schedule 13G/A, BlackRock, Inc. has sole voting power over 6,946,958 shares and sole dispositive power of all the shares reported in the table.

SHARE OWNERSHIP OF DIRECTORS AND EXECUTIVE OFFICERS

The following table shows the amount of our common stock beneficially owned as of March 17, 2015 (the record date for the 2015 annual meeting) by our directors, the executive officers named in the *Executive Compensation—Summary Compensation Table* below, and all of our current executive officers and directors as a group.

| Beneficial Owner (1) | Shares Owned | Shares Subject to Exercisable Rights to Acquire as of May 16, 2015 | Total Shares Beneficially Owned | Percent of Class |
|---|--------------|--|---------------------------------|------------------|
| <i>Non-Executive Directors</i> | | | | |
| R. John Fletcher | 99,185 | 260,000 | 359,185 | * |
| Stephen R. Hardis | 702,068 | 210,000 | 912,068 | * |
| William C. Jennings | 92,185 | 260,000 | 352,185 | * |
| Joseph P. Keithley | 40,000 | 160,000 | 200,000 | * |
| Patrick H. Nettles | 63,685 | 260,000 | 323,685 | * |
| H. Brian Thompson (2) | 124,185 | 260,000 | 384,185 | * |
| Barbara Lundberg | - | 40,000 | 40,000 | * |
| Arthur L. George, Jr. | 20,000 | 40,000 | 60,000 | * |
| <i>Named Executive Officers</i> | | | | |
| Mary G. Puma (3) | 416,224 | 1,125,000 | 1,541,224 | 1.36% |
| Kevin J. Brewer | 81,546 | 572,743 | 654,289 | * |
| William Bintz | 74,719 | 459,500 | 534,219 | * |
| John E. Aldeborgh | - | 187,500 | 187,500 | * |
| Lynnette C. Fallon | 86,287 | 581,250 | 667,537 | * |
| <i>All current Executive Officers and Directors as a Group (14 persons) (4)</i> | 1,831,182 | 4,435,993 | 6,267,175 | 5.35% |

* Indicates less than 1%.

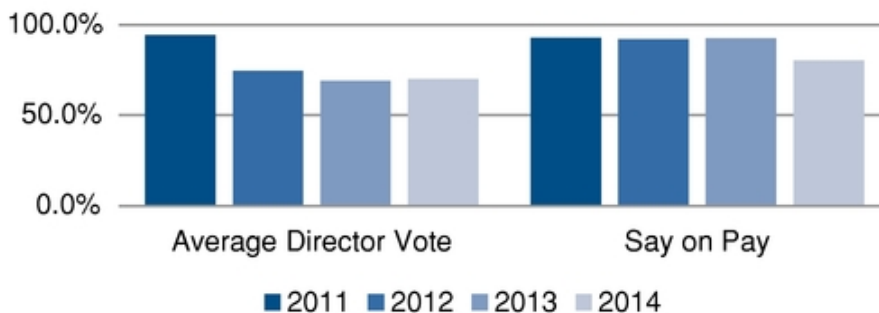
- (1) Unless otherwise noted, the number of shares beneficially owned by each person listed includes any shares over which the person has sole or shared voting or investment power. In accordance with the rules of the Securities and Exchange Commission, the shares shown in the table also include shares that the persons named in this table have the right to acquire on or before May 16, 2015 (60 days after March 17, 2015) by exercising a stock option or other right. Unless otherwise noted, to the knowledge of the Company based on information provided to the Company or filed with the Securities and Exchange Commission, each person has sole investment and voting power (or shares that power with his or her spouse) over the shares listed in the table. The percentage ownership of each person listed in the table was calculated using the total number of shares outstanding on March 17, 2015 (_____ shares), plus any shares that person could acquire upon the exercise of any options or other rights on or before May 16, 2015. None of the shares owned or rights to acquire shares are held in a margin account or subject to a pledge.
- (2) Mr. Thompson's ownership includes 20,000 shares held indirectly.
- (3) Ms. Puma's ownership includes 20,000 shares owned by her husband.
- (4) Includes shares and exercisable options held by the directors and current named executive officers and one other executive officer holding 31,098 shares as of March 17, 2015 (including 12,500 held by the officer's spouse) and 20,000 exercisable options as of May 16, 2015.

STOCKHOLDER ENGAGEMENT

2014 Annual Meeting Vote Results

At our 2014 annual meeting, approximately 80% of votes cast were in favor of our advisory vote on executive compensation (commonly referred to as "Say-on-Pay"). This was a significant drop from the shareholder support expressed in the prior three years, which were all over 90% in favor. While these results continue to show that a majority of our shareholders support our executive compensation policies, the 2014 result was well below what we consider satisfactory. In addition, in 2014 and in the prior two years, the average vote in favor of the election of our Board nominees has been less than 75% of votes cast, in comparison to a 94% support vote in 2011. We have taken these results very seriously and have been active in our response, as described below.

2011-2014 Annual Meeting Director and Say on Pay Votes: Percent in Favor



Shareholder Outreach

To better understand the 2014 annual meeting voting results and to address our investors' concerns, management and our Board have used a variety of initiatives:

RESPONDING TO THE 2014 ANNUAL MEETING VOTE RESULT



Routine Investor Relations. We routinely engage with our shareholders to discuss our business, performance, and strategy. These discussions sometimes also cover Board composition, governance policies and executive compensation. Our robust investor relations program includes press releases on product shipments, earnings, and other material matters; quarterly earnings conference calls; participation in industry conferences arranged by investment banks; non-deal road shows arranged by investment analysts and others supporting our stock; one-on-one meetings in connection with conferences, road shows or otherwise; and routine phone and email conversations with shareholders.

During 2014, in addition to our routine quarterly earnings calls and follow up meetings, Axcelis presented and held one-on-one meetings at 10 investor conferences, held in New York City, San Francisco, Los Angeles, Boston and Minneapolis. We also conducted five "non-deal" roadshows with four different equity analysts, visiting a total of 22 investment firms in Boston, San Francisco, Los Angeles, Detroit, St. Louis, Chicago, Cleveland, and Philadelphia. Additionally during 2014, Axcelis held a technology seminar for equity analysts to educate them on future uses for ion implant technology and advantages of the Axcelis Purion ion implanters.

Pursuing our Board refresh strategy, in 2014 we asked our largest institutional shareholders to recommend individuals for us to consider as Board candidates. Mr. St. Dennis was recommended as a Board candidate by one of our larger shareholders. Both management and Board members participate in these types of discussions.

Special Shareholder Outreach in 2014-2015. The lower-than-expected voting results at the 2014 annual meeting led us to engage in a special outreach effort to shareholders in the latter half of 2014 and into 2015. We sought input from our largest institutional investors representing more than 40% of our outstanding shares at year-end 2014. Ms. Puma (our Chief Executive Officer), Mr. Nettles (the chair of our Nominating and Governance Committee), Douglas Lawson (our EVP, Corporate Marketing and Strategy) and Ms. Fallon (our Executive Vice President HR/Legal, General Counsel and Corporate Secretary) participated in these discussions. The goal of these conversations was to update investors on our business, our Board refresh strategy and governance policy updates. In addition, we sought to understand the concerns and objections that may have led some of these investors to vote against our 2014 director nominees and 2014 executive compensation, as well as to receive general feedback.

Advisor and Consultant Engagements. In addition to these direct conversations with our shareholders, the Company sought assistance from others to fully understand the issues driving the 2014 voting results, as follows:

Proxy Advisory Firms. Members of our senior management spoke with representatives from the proxy advisory service firm Institutional Shareholder Services, Inc. ("ISS") and Glass Lewis & Co., LLC ("Glass Lewis") to discuss our business, governance policies and compensation programs. These discussions also gave the advisory firms an opportunity to ask questions and offer their viewpoint on various issues.

Compensation Advice. Our Compensation Committee engaged Frederic W. Cook & Co., Inc. ("FW Cook"), an independent compensation consultant, to develop a revised peer group and to assess the alignment of our 2014 compensation programs against this revised peer group and our performance. In a report provided to the Compensation Committee in November 2014, FW Cook

observed that the amount of 2014 target compensation provided to the Axcelis executive officers was within market practice. In addition, FW Cook stated that realized Axcelis executive compensation in 2013 and 2014 reflects the Company's performance-based compensation programs tied to financial performance improvement and stock price appreciation. See "*Executive Compensation—2014 Compensation Discussion and Analysis*" below.

We also engaged a consulting firm to assist us in analyzing our executive compensation in the context of proxy advisory firm standards before the 2015 proxy season. We used this advice to improve our ISS Compensation QuickScore to a 1 (the highest rating on a 1 to 10 scale) in November 2014, by adopting and modifying policies relating to executive compensation, as described below in "*Corporate Governance—Governance Policies*."

Governance Review. We also engaged a consulting firm to assist us with a review of our governance policies. As a result of this process, we initiated a number of governance policy changes in 2014, as described below in "*Corporate Governance—Governance Policies*." These changes caused Axcelis' overall ISS QuickScore to improve to 2 out of 10 (where 1 is the best score). Improving our voting results on our director nominees and Say-on-Pay in 2015 will further improve our ISS QuickScore.

Outcome of Outreach Efforts

We found both our direct interaction with investors and the third party input extremely informative and valuable, and we are very appreciative of the time that our investors and the advisory firms took to speak with us. This process led us to conclude that the low 2014 voting results in the Board election and in the Say-on-Pay vote were largely an expression of our investors' disappointment with our financial performance and stock price. In general, executive compensation did not appear to be a topic of concern to shareholders. Both Glass Lewis and ISS had recommended in favor of our 2014 Say-on-Pay vote, and the FW Cook and ISS Corporate Solutions analyses of our 2014 compensation suggest that our executive pay is well aligned with peers and with our performance. See "*Executive Compensation—2014 Compensation Discussion and Analysis*" below. In addition to the Company's financial performance and stock price, some investors expressed the following governance concerns:

- Significant continuity in Board composition after a period of unsatisfactory financial performance.
- The assignment of the Board Chairman title to the CEO, despite the use of a Lead Director.

The chart below summarizes the main concerns we heard and our response to them:

ADDRESSING SHAREHOLDER CONCERNS

Improving Revenues and Market Share

- Re-entered the high current ion implant market with Purion H, making 100% of the nearly \$1B implant market available to Axcelis
- Ramped Purion H systems faster than anticipated: shipped three Purion H systems for revenue in 2014, less than 6 months after the first evaluation shipment
- 2014 implant system sales increased 26% over 2013
- Q4 2014 results beat Company guidance and analyst consensus estimates

Enhanced Financial Stability

- Reduced R&D and SG&A spending quarterly run rate to below \$18M
- Initiated sale leaseback of headquarters building, closed in January 2015, eliminated debt and added \$34M to balance sheet

Improving Stock Price Performance

- 2015 record date closing price of \$___ is ___% above \$1.64 price on date of 2014 Annual Meeting
- Analyst price targets average \$___ as of the record date

Management Changes

- Since 2011, executive leadership replaced in 4 key positions: new EVP, Engineering, new EVP, Customer Operations, new Chief Financial Officer and new EVP, Corporate Marketing and Strategy
- Ms. Puma will relinquish Chairman title at the 2015 annual meeting, and an independent director will become Board chair

Board Refreshment Strategy

- Continued Board refresh strategy, adding 2 new directors in 2014
- Announced the retirement of 3 directors in 2015
- Engaged search firm to identify most qualified director candidates for 2015
- Sought input from investors on director candidates
- Nominated 3 new directors in 2015, including a large shareholder's candidate
- A majority (five of nine) of the Company's director nominees are new or will have served only a year on the Board

Governance Policies

- Amended director and executive stock ownership policies to align with ISS standards
- Adopted policy not to provide new executive change of control tax indemnification and gross up covenants
- Adopted formal executive officer compensation claw back policy
- Amended Bylaws to clarify process for nomination of directors by stockholders
- See "*Corporate Governance—Governance Policies*" below

Shareholder Outreach

- Expanded shareholder outreach
- Planning for more Q&A time at 2015 annual meeting for investors who attend the meeting

BACKGROUND OF THE SOLICITATION

During the period from the 2014 annual meeting through this filing, the Company's representatives met in person or by telephone more than 12 times with Eric Singer, the managing member of Vertex Opportunities Fund, LP and its affiliates, and had additional email exchanges. In these conversations, Mr. Singer recommended the completion of a sale leaseback transaction and continued cost reduction, both of which management had previously planned and did implement. In some of these meetings, Mr. Singer also requested an immediate re-composition of the Board of Directors, which the Company did not undertake, choosing instead to continue its ongoing Board refreshment process designed to attract the most highly qualified Board candidates available, ideally with industry and operational experience, in a manner that would not unduly disrupt the Company's business and operations. At no time did Mr. Singer provide the Company with the identity of any individuals he would have supported for the Board (other than himself), despite multiple requests by the Company for his proposed candidates.

Mr. Singer had a private meeting with two directors of the Company, Stephen R. Hardis, Lead Director, and Patrick H. Nettles, Chairman of the Nominating and Governance Committee, on May 13, 2014, prior to the annual meeting held on that date. Mr. Singer also invited another shareholder to join him. At this meeting, Mr. Singer provided input on the business and Mr. Nettles and Mr. Hardis responded to his comments. Mr. Singer then attended the Company's annual meeting on May 13, 2014. Mary G. Puma, Chairman and CEO, Kevin Brewer, EVP and CFO and Douglas Lawson, EVP, Corporate Marketing and Strategy met with Mr. Singer and another shareholder later that afternoon. The discussion was mainly focused on the Company's publicly disclosed initiatives to grow the footprint of the Purion Platform and take cost out of the business.

On June 9, 2014, Mr. Singer had a brief conversation with Douglas Lawson, the Company's Executive Vice President Corporate Marketing and Strategy, at a Needham investor conference. Mr. Singer and Mr. Lawson further discussed the Company's publicly disclosed initiatives to take cost out of the business.

Management arranged to meet with Mr. Singer on July 8, 2014 in San Francisco at the SEMICON West conference. Mr. Singer indicated that he only wanted to talk to Ms. Puma. In their discussion, he criticized Ms. Puma, the Company's performance, other management and the Board.

On August 7, 2014, at the Company's request, representatives of Blackstone Advisory Partners ("Blackstone"), the Company's investment banker, had a discussion with Mr. Singer. Mr. Singer expressed his interest in reconstituting the Board of Directors. Mr. Singer made a verbal proposal which involved immediate Board resignations and new appointments of individuals of Mr. Singer's choosing. Mr. Singer did not identify any particular individuals in this proposal. Blackstone recommended that Mr. Singer meet with two Board members the following week to continue the engagement and ensure that his thoughts were considered in the changes the Board was evaluating.

On August 14, 2014, Mr. Singer met with two Axcelis directors, Mr. Nettles and Barbara Lundberg, a member of the Board's Nominating and Governance Committee. Mr. Singer verbally

provided a proposal to reconstitute the board through the immediate resignation of four directors, the immediate appointment of three new directors (Mr. Singer and two others that he would name), and the additional departure of a fifth current director in 2015. He also proposed that a strategic committee of the Board would be formed, with his designees constituting a majority of the committee, but that all material decisions would be brought to the full board. He did not identify any of his director candidates, other than himself. Mr. Nettles and Ms. Lundberg noted that no existing Board members had expressed a desire to step down immediately, and that the existing Board had a fiduciary duty to shareholders to evaluate Board nominees. Mr. Singer did not identify any Board candidates at this time other than himself. Mr. Singer said that he would provide a written version of his Board reconstitution proposal.

On August 26, 2014, as part of a planned Board refreshment process, Axcelis announced that three members of the Board would not be eligible for re-nomination in 2015. The Company also announced the adoption of a governance policy not to nominate Board candidates who would be over 75 years of age on election.

On September 15, 2014, Vertex filed a Schedule 13D disclosing its ownership of more than 6% of Axcelis' outstanding common stock and asserting that it believed the stock was undervalued. The filing also stated that Vertex would engage in certain actions, including "making proposals ... concerning changes to the capitalization, ownership structure, board structure (including board composition) or operations of" Axcelis.

On September 17, 2014, Ms. Puma and Mr. Brewer had a telephone call with Mr. Singer to discuss Vertex's filing. In this meeting, Mr. Singer expressed his disappointment that the Company had not yet completed a sale leaseback transaction and expressed disappointment that Mr. Nettles had not responded to his verbal proposal on August 14, 2015. Ms. Puma offered to follow up with Mr. Nettles on this matter.

Also on September 17, 2014, the Company received a Board reconstitution proposal in writing from another shareholder, who proposed to appoint three out of the nine seats on the Board and proposed the immediate resignations of a number of current directors.

Mr. Nettles and Ms. Puma arranged a call with Mr. Singer on September 18, 2014, as a follow up to the discussion on September 17. Mr. Nettles explained that he had been expecting a written settlement proposal from Mr. Singer, which he requested again. Mr. Nettles and Ms. Puma noted that while it was not clear a settlement agreement could be reached given that no Board members had expressed a desire to step down immediately, they were open to further discussions. Mr. Singer agreed to provide a written proposal.

Mr. Singer sent a written settlement proposal on September 29, 2014, which provided for the immediate appointment of two new Board members selected by Vertex and its affiliates, who would be placed on a newly formed strategic committee with one or two current directors. The proposal further provided that in May 2015, Vertex would appoint a third director, and four current directors would retire (one in addition to the three retirements announced in August). None of the Vertex nominees were identified by name, only that they would be "selected by Vertex and its affiliates."

Mr. Nettles arranged a follow-up call with Mr. Singer on October 3, 2014. Mr. Nettles suggested that Mr. Singer identify Board candidates for consideration by the Board for nomination. Mr. Singer declined to identify any candidates and stated that he would designate individuals to join the Board once the Company signed a settlement agreement or, alternatively, that he would run a proxy contest.

Ms. Puma contacted Mr. Singer by email on October 6, 2014 offering to discuss the Company's recently announced execution of a Purchase and Sale Agreement to enter into a sale leaseback transaction of the Company's headquarters building for \$50 million. Mr. Singer responded with negative statements regarding the Board and did not indicate any interest in discussing the sale leaseback.

Following the sale leaseback announcement, management contacted a number of institutional shareholders. In these calls, management asked shareholders to identify individuals they would recommend as potential Board members. On October 17, 2015, the Company engaged Hedrick & Struggles, a search firm, to assist in identifying new Board candidates for election in May 2015. Heidrick & Struggles prepared lists of recommended candidates, which included shareholder-recommended individuals. Detailed reports on candidates selected to advance to interviews were also provided by Heidrick & Struggles. Interviews with both Board and management were held with selected candidates. Heidrick & Struggles completed background checks on candidates prior to Board action on nominations.

In November 2014, the Company implemented a number of governance changes, including adopting a policy to have an independent chairman of the Board of Directors beginning at the May 2015 annual meeting, and implementing enhancements to the Company's executive compensation policies.

On January 21, 2015, the Company received a request from Vertex's counsel to provide the form of questionnaire and written representation required by the Company's bylaws in connection with the nomination of individuals for election to the Board of Directors. The Company provided these documents as requested.

On January 22, 2015, Ms. Puma contacted Mr. Singer to arrange a phone call on February 9, 2015, which would follow the Company's expected closing of the sale leaseback transaction and the Company's release of fourth quarter and full year 2014 results.

On February 9, 2015, Mr. Singer, Ms. Puma and Kevin Brewer, Executive Vice President and Chief Financial Officer spoke by telephone; after discussing the announced business results, Mr. Singer stated that he was planning to make a public filing regarding Axcelis in a few hours. Ms. Puma asked Mr. Singer whether he would like to have a private discussion regarding his demands before a filing was made. Mr. Singer stated that he could not stop the filing at that time and suggested that Ms. Puma call him after the filing was made. Several hours later, Vertex filed an amendment to its Schedule 13D which, among other things, identified six persons whom Vertex intended to nominate as Axcelis directors, which would represent a majority of the Board based on the Company's current and expected number of directors. This was the first time Vertex identified any particular individuals as recommended for service on the Axcelis Board (other than Mr. Singer himself, who was sometimes, but not always, identified as a potential Board

candidate). Later that afternoon, Mr. Singer sent an email to the Company asking for a call. Ms. Puma notified Mr. Singer that she was not available until the following afternoon.

Ms. Puma, Mr. Singer and Mr. Brewer spoke on February 11, 2015. In this call, Mr. Singer stated that he had prepared material describing his views on the Company's performance, directors and management. He stated that he intended to file the material unless within two to three days the Company agreed to his new settlement proposal, which involved the establishment of a six or seven person Board, with a majority consisting of Vertex's nominees and with a strategic committee controlled by Vertex's nominees. Mr. Singer also stated that he would only speak with Ms. Puma regarding his proposal.

The Axcelis Board considered Mr. Singer's proposal in a Board meeting held on February 12, 2015, and resolved to nominate for election at the May 2015 annual meeting the six incumbent directors who were eligible for nomination and three new nominees identified through the Company's Board search initiative, which included a nominee identified by a major shareholder.

On February 13, 2015, the Company issued a letter to shareholders as a press release, also filing it with the SEC under cover of Schedule 14A. The letter addressed key issues of concern to shareholders, including the Company's new products, recent operational performance, management changes and the Board refreshment initiative. The shareholder letter identified the nine nominees proposed by the Board for election in May 2015, noting that three of the nine were new this year and that three of the six incumbent nominees had joined the Board in the last four years, two of whom joined last year. The letter did not address Vertex's nominees.

Ms. Puma contacted Mr. Singer on February 13, 2015 to discuss the Company's letter to shareholders. A call was arranged that day with Ms. Puma, Mr. Lawson, and Mr. Singer. Mr. Singer initially stated that he would not speak to two people. Ms. Puma explained that the Board had considered Mr. Singer's proposal and determined that the nominees identified by the Board had the best qualifications and attributes to execute on the Company's strategy. Mr. Singer stated that he planned to make additional filings regarding the Company. Ms. Puma indicated her willingness to continue discussions with Mr. Singer.

On March 2, 2015, Mr. Singer and Ms. Puma spoke by phone, in a call initiated by Mr. Singer. Mr. Singer indicated that he would not plan to seek a majority of seats on the Board, and requested a settlement proposal from the Company in light of that position. He requested a response by the end of the day on March 3, 2015. Later in the day, Mr. Singer again contacted Ms. Puma, this time to share a settlement proposal that he had developed. Afterwards, Mr. Singer emailed his proposal to Ms. Puma and called her again. In Vertex's settlement proposal, two of Vertex's nominees would replace two of the Board's nominees on a nine director slate for the 2015 annual meeting, with Vertex agreeing to a one year standstill (allowing Vertex to nominate for the 2016 annual meeting). The proposal also gave Vertex the right to appoint two additional Board members if the Company did not meet certain 2015 financial metrics, in which case two existing Board members would resign. In the event Vertex appointed four directors, the standstill would extend through the 2016 annual meeting. Ms. Puma confirmed she would share this proposal with the Board.

The Board met later in the day on March 2nd, and discussed Mr. Singer's proposal and each of the Vertex nominees. The background of the Vertex nominees did not lead the Board to conclude that they offered skills not present on the Board's slate. However, the Board was open to having, and had sought in its Board candidate search, to identify candidates recommended by shareholders. The Board felt that its slate, with a majority of new or one year-tenured highly qualified nominees (one of whom had been proposed by a large shareholder), offered significant change in the Board composition. The Board also felt its nominees had the requisite independence, experience and skills to continue to drive the Company's turnaround. The Company's slate also offered continuity, especially in the critical Technology Committee, of which Mr. Nettles, Mr. Keithley and Mr. Fletcher are members, which had overseen the Company's development of the Purion Platform.

At the same time, the Board saw a benefit in avoiding the distraction and expense of a proxy contest, and approved a compromise offer to Vertex. This offer was to add one of the Vertex nominees, Peter Simone, to the Board's slate of nominees for the 2015 annual meeting, increasing the size of the Board to ten directors. Mr. Simone was chosen because of his semiconductor equipment background and his public board experience. Ms. Puma communicated the Company's proposal to Mr. Singer on March 3, 2015. Mr. Singer rejected the Board's compromise proposal. Ms. Puma conveyed her willingness to continue discussions with Mr. Singer in the future.

PROPOSAL 1: ELECTION OF DIRECTORS

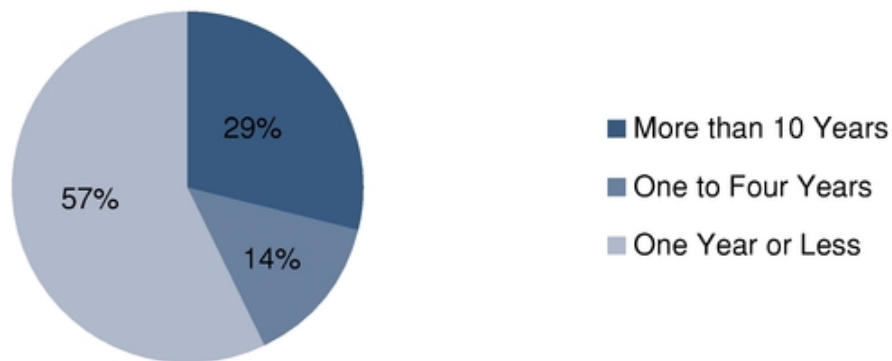
Our Board of Directors has fixed the number of directors at nine effective as of the 2015 annual meeting. The number of directors is subject to increase or decrease by action of the Board. At the 2015 annual meeting, our Board of Directors has nominated six of the current directors for re-election, and has nominated three new directors for election. Each director and nominee will, if elected, hold office for a term of one year until our annual meeting in 2016 and until their successors are elected and qualified. Each of the Board's nominees has consented to serve if elected. However, if any nominee is unable to serve, proxies will be voted for any other candidate nominated by the Board.

Vertex has notified us of its intent to nominate six persons for election as directors at the annual meeting. Axcelis' Board of Directors does not endorse any Vertex nominee and urges you not to sign or return any proxy card that may be sent to you by Vertex. Voting to "WITHHOLD" with respect to any of the Vertex nominees on its proxy card is not the same as voting for the Axcelis Board's nominees because a vote to "WITHHOLD" with respect to any of the Vertex nominees on its proxy card will revoke any proxy you previously submitted. If you have already voted using the [color] proxy card, you have every right to change your vote by voting via the Internet or by telephone by following the instructions on the enclosed WHITE proxy card, or by completing and mailing the **WHITE** proxy card in the enclosed pre-paid envelope. Only the latest validly executed proxy that you submit will be counted. Any proxy may be revoked at any time prior to its exercise at the annual meeting by following the instructions under "How you may revoke your proxy" on page [:]. If you have any questions or require any assistance with voting your shares, please contact our proxy solicitor, MacKenzie Partners, Inc., toll free at (800) 322-2885 or collect at (212) 929-5500.

The Board recommends a vote FOR each of the nine Axcelis nominees. These independent nominees represent a balance of long tenured and newer directors with a strong mix of relevant experience. Axcelis' Nominating and Governance Committee and Board have evaluated each of the Axcelis nominees and each of Vertex's proposed nominees against the factors and principles Axcelis uses to select nominees for director. Based on this evaluation, our Nominating and Governance Committee and Board have concluded that it is in the best interests of Axcelis and its stockholders for each of the proposed nominees listed below to serve as a director of Axcelis.

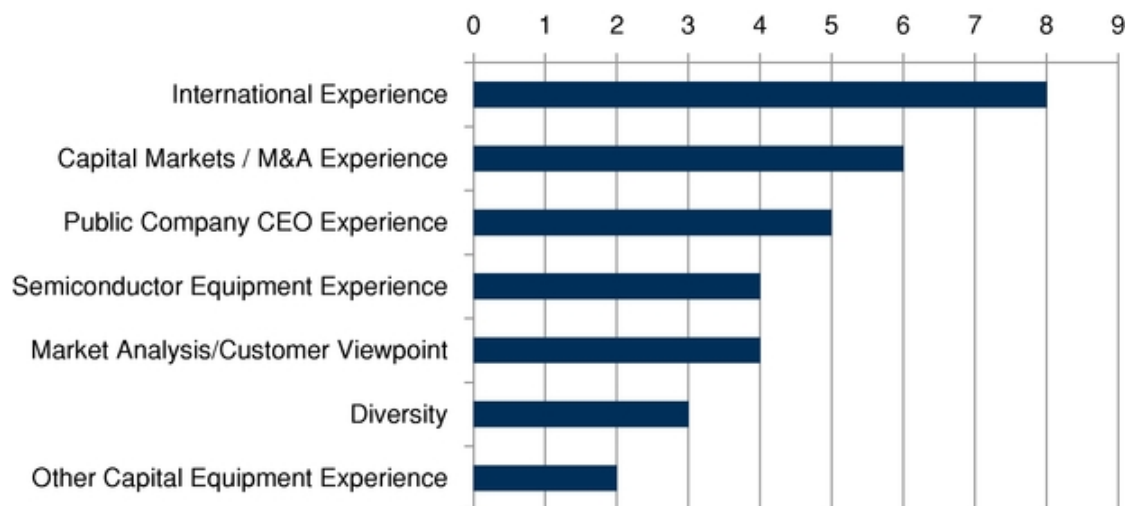
The average tenure of the eight Axcelis independent director nominees is less than 4 years:

Majority of Independent Board Nominees have Tenure of One Year or Less



Our independent nominees bring a strong mix of relevant experience:

Number of Independent Board Nominees with Relevant Skills and Qualities



The following table contains biographical information about the nominees for election and the specific experience, qualifications, attributes or skills of the nominees that led to the conclusion that each of these individuals should serve as a director of the Company, in light of our business and structure:

2015 NOMINEES FOR ELECTION TO THE BOARD OF DIRECTORS

R. John Fletcher: director since 2003, age 69

Business Experience and Other Directorships

Mr. Fletcher is Chief Executive Officer of Fletcher Spaght, Inc., a strategy consulting organization, which he founded in 1983, and Managing Director of Fletcher Spaght Ventures, a venture capital fund. Prior to founding Fletcher Spaght, Inc., Mr. Fletcher was a Manager at the Boston Consulting Group. Mr. Fletcher is also a director of The Spectranetics Corporation, a manufacturer of single-use medical devices used in cardiovascular procedures. During the past five years, he was also a director of AutoImmune, Inc. and Marina Biotech, Inc.

Experience, Qualifications and Attributes

Mr. Fletcher's extensive work experience in strategic planning, especially in the area of market analysis for technology-based businesses, has been beneficial to the Board's understanding of the Company's business opportunities. Mr. Fletcher's work also provides him with insight into capital formation matters which may be beneficial in the future. Mr. Fletcher has served on the Compensation Committee since May 2006, on the Audit Committee from April 2004 to May 2014 and on the Technology Committee since May 2014. The Board highly values his contributions in these roles.

Arthur L. George, Jr.: director since 2014, age 53

Business Experience and Other Directorships

Mr. George retired in 2014 after a 30 year career at Texas Instruments, one of the world's largest semiconductor companies and a highly innovative, high performing global leader in analog, embedded processing and wireless technologies. Mr. George's career began in 1984 as a test engineer in TI's Logic Operations, and he most recently served as Senior Vice President and Manager of TI's Analog Engineering Operations, a position he held from 2010. Prior to that, beginning in 2006, Mr. George served as Senior Vice President and General Manager of TI's High Performance Analog business unit. Mr. George also serves on the Board of Directors of Nordson Corporation, a manufacturer of precision dispensing equipment for applying industrial liquid and powder coatings, adhesives, and sealants.

Experience, Qualifications and Attributes

Mr. George brings to the Board significant executive general management experience as well as extensive operational and new product development experiences in high technology markets. Mr. George's experience with Texas Instruments' high performance analog products used in a wide range of industrial products gives him insight into the semiconductor and semiconductor capital equipment industries and affords the Board a unique perspective in identifying strategic opportunities and tactical risks attendant to the semiconductor electronics market. Mr. George has served on the Compensation Committee and the Technology Committee since May 2014. The Board highly values his contributions in these roles.

James W. Green: new candidate for election, age 56

Business Experience and Other Directorships

Mr. James W. Green has served, since 2007, as President and Chief Executive Officer of Analogic Corporation, a leading designer and manufacturer of medical imaging, ultrasound and security scanning systems. From 2005 to 2007, Mr. Green was Regional Vice President, California Division, of Quest Diagnostics Incorporated, a leading provider of diagnostic testing, information, and services. Before joining Quest, Mr. Green served as Senior Vice President & General Manager of Computed Tomography for Philips Medical Systems, a global leader in the business of developing, manufacturing, marketing, and servicing medical computed tomography systems. Mr. Green also serves on the Analogic Corporation board.

Experience, Qualifications and Attributes

Mr. Green brings extensive experience and important technical perspectives as a capital equipment manufacturer for global customers as well as a former OEM customer and end-user supplier of advanced medical imaging equipment. He has experience leading and integrating diverse operations located on multiple continents. Through these experiences, Mr. Green has developed deep skills in strategic planning, financial and budgeting matters, engineering and product development, operations, sales and marketing, and general management.

Joseph P. Keithley: director since 2011, age 66

Business Experience and Other Directorships

Mr. Keithley is Non-Executive Chairman of the Board of Nordson Corporation, a position he has held since February 2010. Nordson Corporation manufactures precision dispensing equipment for applying industrial liquid and powder coatings, adhesives, and sealants. Mr. Keithley served as Chairman of the Board of Keithley Instruments, Inc., a provider of measurement solutions to the semiconductor, fiber optics, telecommunications and electronics industries from 1991 to December 2010. He also served as Keithley Instruments, Inc.'s Chief Executive Officer from November 1993 to December 2010 and as President from May 1994 to December 2010. Mr. Keithley also currently serves as a director of Materion, Inc., an integrated producer of high performance specialty engineered materials used in a variety of electrical, electronic, thermal and structural applications.

Experience, Qualifications and Attributes

Mr. Keithley brings extensive, broad-based international business and executive management and leadership experience from his leadership roles at Keithley Instruments, Inc. to his role as a member of our Board of Directors. Among other things, Mr. Keithley draws upon his extensive knowledge in the global semiconductor and electronics industries garnered while leading Keithley Instruments, Inc. Mr. Keithley also has extensive public company board and governance experience. Mr. Keithley has served as a member of the Audit Committee since joining the Board in 2011 and the Board has benefited from his continuing service on that committee. In addition, Mr. Keithley serves as a member of the Technology Committee. The Board highly values his contributions in these roles.

Duy-Loan T. Le: new candidate for election, age 53***Business Experience and Other Directorships***

Ms. Le is a Senior Fellow, Embedded Processing Division at Texas Instruments, Inc., one of the world's largest semiconductor companies and a highly innovative, high performing global leader in analog, embedded processing and wireless technologies. Ms. Le expects to complete her retirement from TI in 2015. Ms. Le was appointed Senior Fellow in 2002, the only woman in the company's history elected to this highest rank. Ms. Le previously held various other leadership positions at Texas Instruments beginning in 1982, including Program Manager; Ramp Manager, Fellow, Application Specific Processor Division; Memory Design Engineer; Memory Design Manager; and Distinguished Member, Technical Staff, Memory Division. Ms. Le currently serves as a director of National Instruments Inc., a supplier of measurement and control hardware and software to the engineering and scientific communities to accelerate productivity, innovation and discovery.

Experience, Qualifications and Attributes

Ms. Le is a results-oriented and highly accomplished technology executive with extensive experience in various aspects of semiconductor design and manufacture, including operations, research and development, product launch, customer interfacing, foundry partnerships and supply chain management. Ms. Le has led all aspects of execution for advanced technology nodes, including design, assembly and test, productization, qualification, release to market, high volume ramp, and quality and reliability assurance. She has experience opening international offices and developing engineering talent for the business. Ms. Le has been awarded 24 patents. The Board highly values Ms. Le's technical knowledge, operational experience and management skills.

Barbara J. Lundberg: director since 2014, age 62***Business Experience and Other Directorships***

Ms. Lundberg has been serving as an advisor/independent consultant to several companies and venture capital firms in Europe and the US since November 2013. She previously served as CEO/Vice-Chairman of the Supervisory Board of Tele-Fonika Kable, the third largest cable manufacturer in Europe, beginning in May 2012. From 2004 through 2011, Ms. Lundberg worked as an investment advisor/consultant, primarily with Kolaja & Partners, now part of Alvarez & Marsal, offering performance improvement, turnaround management and investment advisory services to a number of leading private equity and alternative asset managers in Europe and the US. Between 1999 and 2001, Ms. Lundberg was CEO of Elektrim SA, a multi-industry conglomerate and one of the largest public companies in Poland. From 1990 through 1999, she was Executive Vice President of the US government sponsored Polish American Enterprise Fund (PAEF) where she co-founded Enterprise Investors (EI), the first private equity fund manager in Central Europe. She managed all operations in Poland of EI and PAEF from 1992 to 1999. Prior to that, Ms. Lundberg worked primarily with US technology and emerging growth businesses, including opening the Silicon Valley office of Apax Partners, a private equity firm focused on long-term investment in growth companies.

Experience, Qualifications and Attributes

Ms. Lundberg's deep familiarity with the issues confronting growing technology-based equipment companies is an asset. In particular, Axcelis benefits from Ms. Lundberg's management experience in maintaining tight cash and working capital management while conducting global supply chain and manufacturing operations. At Elektrim and as a private equity investor, Ms. Lundberg has led the divestiture and acquisition of businesses and formed multiple corporate joint ventures. Her experience with M&A could assist Axcelis in the future. In addition, we value her extensive background in financing transactions for technology-based companies, which includes both common stock and convertible bond offerings. Ms. Lundberg has served on the Audit Committee and the Nominating and Governance Committee since May 2014. The Board highly values her contributions in these roles.

Patrick H. Nettles: director since 2001, age 71

Business Experience and Other Directorships

Mr. Nettles has served as Executive Chairman of the Board of Directors of CIENA Corporation, a manufacturer of optical networking equipment, since May 2001. Prior to that, Mr. Nettles served as Chairman of the Board of Directors and Chief Executive Officer of CIENA from October 2000, as its President, Chief Executive Officer and Director from April 1994, and as its Director and Chief Executive Officer from February 1994. Mr. Nettles is a director of Progressive Corporation.

Experience, Qualifications and Attributes

Mr. Nettles' work experience as a chief executive officer and chief financial officer of a global capital equipment business gives him the skills to provide leadership and guidance to management and the other Board members in respect to the financial and operational matters affecting Axcelis. Mr. Nettles has also had meaningful experience in corporate transactions, especially in the area of mergers and acquisitions, which has been helpful to management and the other Board members in recent years and may be beneficial in the future. Mr. Nettles has served as Chairman of the Nominating and Governance Committee since its formation in 2002 and the Board has benefited from his strong leadership in that area. Mr. Nettles also served as a member of the Audit Committee during a portion of 2011 and 2012. In addition, Mr. Nettles serves as Chairman of the Technology Committee. The Board highly values his contributions in these roles.

Mary G. Puma: director since 2000, age 57

Business Experience and Other Directorships

Ms. Puma is Axcelis' Chief Executive Officer (since January 2002) and President (since May 2000). Ms. Puma also served as Chairman of the Board from 2005 to the 2015 annual meeting. Prior to becoming Chief Executive Officer, Ms. Puma served as Chief Operating Officer from May 2000. In 1998, she became General Manager and Vice President of the Company's predecessor, the Implant Systems Division of Eaton Corporation, a global diversified industrial manufacturer. In May 1996, she joined Eaton as General Manager of the Commercial Controls Division. Prior to joining Eaton, Ms. Puma spent 15 years in various marketing and general management positions for General Electric Company. Ms. Puma is also a director of Nordson Corporation and of Semiconductor Equipment and Materials International (SEMI), a trade association.

Experience, Qualifications and Attributes

Ms. Puma's long experience in our industry, as well as her role as Axcelis' Chief Executive Officer and President allow her to provide essential insight into the Company's past and current business operations which is critical to the Board's decision-making in all financial and operational matters affecting Axcelis. Ms. Puma's strong leadership during challenging periods of the Company's history, notably her oversight of a complete revitalization of the Company's product lines while implementing substantial cost reductions, have been highly valued by the Board.

Thomas St. Dennis: new candidate for election, age 61

Business Experience and Other Directorships

Thomas St. Dennis is the Executive Chairman of FormFactor, Inc., a leading provider of semiconductor wafer test technologies and expertise, a position he assumed in October 2013, having served as FormFactor's Chief Executive Officer from September 2010 to December 2014. Mr. St. Dennis has held various positions at Applied Materials, Inc., a semiconductor equipment manufacturer, from 1992 to 1999 and again from 2005 to 2009. His most recent role at Applied Materials was as Senior Vice President and General Manager of the Silicon Systems Group. From 2003 to 2005, Mr. St. Dennis was Executive Vice President of Sales and Marketing at Novellus Systems, Inc., a supplier of deposition, thermal processing and surface preparation equipment used in the manufacturing of semiconductors. Novellus was acquired by Lam Research Corporation in June 2012. Mr. St. Dennis currently serves on the Boards of FormFactor and Mattson Technology, Inc., a leading supplier of dry strip and rapid thermal processing equipment to the semiconductor industry.

Experience, Qualifications and Attributes

Mr. St. Dennis's prior experience in the semiconductor industry as well as his extensive international business background will make him an effective advisor to the Board regarding strategic and marketing issues. His experience and skills are highly valued by our Board.

BOARD OF DIRECTORS

Board of Directors Independence and Meetings

The Board of Directors has determined that, other than Ms. Puma, all directors who served on the Board during 2014 and the nominees for election in 2015 are independent under the criteria established by Nasdaq, and that the members of the Audit Committee also meet the additional independence requirements of the SEC. None of the directors, to the Company's knowledge, had any business, financial, family or other type of relationship with the Company or its management (other than as a director and stockholder of the Company), except for any relationships that the Board considered to be immaterial under the Nasdaq independence standards. In determining that each such director is independent, the Board considers whether Axcelis purchases and sells products and services from and to companies (or their affiliates) at which directors are or have been employed as officers or serve as directors. The Board also determined that the members of the Audit and Compensation Committees meet additional independence requirements under SEC rules, Internal Revenue Code rules and additional Nasdaq rules.

Our Board of Directors held twelve meetings during 2014, some of which were joint meetings with a Board committee. Independent directors have regularly scheduled executive sessions at which only independent directors are present. The rate of attendance at 2014 Board meetings, and of those committees of which a director is a member, was 100%. All Board members whose terms continue after the annual meeting of stockholders are expected to attend the annual meeting of stockholders, subject to special circumstances. All Board members then in office attended the annual meeting in 2014.

Board of Directors Leadership Structure

Our Governance Policies were amended in 2014 to provide that beginning with the Company's annual meeting of Stockholders in 2015, the Chairman of the Board shall be an Independent Director (as defined in the listing standards for The Nasdaq Stock Market) and he or she may not also serve as the Chief Executive Officer, other executive officer or employee of the Company during such director's service as Chairman. Prior to the 2015 annual meeting, Ms. Puma, as Chief Executive Officer, also served as Chairman of the Board beginning in May 2005, during which time Stephen R. Hardis served as Lead Director. Under our Governance Policies, the Lead Director had similar responsibilities to those of the Chairman. Mr. Hardis will retire from the Board upon the 2015 annual meeting, and a new Chairman will be designated by the Board of Directors following the meeting.

Compensation of Directors

The Nominating and Governance Committee has responsibility under its charter to review and recommend non-employee director compensation for adoption by the full Board. All equity grants to non-employee directors have been made either (A) under automatic granting language in the 2000 Stock Plan or (B) by the Compensation Committee on the recommendation of the Nominating and Governance Committee or full Board under the 2000 Stock Plan or the 2012 Equity Incentive Plan.

2014 Director Fees. Cash retainers and meeting fees for our non-employee directors are as follows:

Retainers (paid in quarterly installments)

| | |
|---|----------|
| Lead Director/Non-Executive Chairman | \$50,000 |
| Board Member (not Lead Director) | \$30,000 |
| Audit Committee Chair | \$15,000 |
| Compensation Committee Chair | \$10,000 |
| Nominating and Governance Committee Chair | \$7,500 |

Meeting Fees (paid quarterly following meetings)

| | |
|---|--|
| In Person Board Meetings | \$2,000 per meeting |
| Telephone Board Meetings | \$1,000 per meeting |
| In Person or Telephone Committee Meetings | \$1,000 per meeting, only to committee members |

Non-employee directors also receive reimbursement of out-of-pocket expenses incurred in attending Board and committee meetings. Non-employee directors do not receive any Company-paid perquisites.

The Board of Directors may, from time to time, form committees (such as the Technology Committee formed in November 2011) in addition to the Audit, Compensation and Nominating and Governance Committees and set compensation for service on such additional committees.

2014 Equity Awards. On May 12, 2014, the Compensation Committee approved the issuance under the 2012 Equity Incentive Plan of non-qualified stock options exercisable for 40,000 shares of common stock to each of the non-employee directors, effective July 15, 2014. These option grants became fully exercisable on January 11, 2015 (181 days after the date of grant) as each director remained in service on that date. In addition, the Compensation Committee approved the grant on November 17, 2014 to each of the new members of the Board of Directors, Mr. George and Ms. Lundberg, of restricted stock units ("RSUs") for 45,000 shares, vesting as to 25% of the shares on each of November 15, 2015, 2016, 2017, and 2018. Long-term ownership of Company equity by directors is encouraged through the Company's director stock ownership guidelines, which are discussed below under "*Corporate Governance—Governance Policies.*"

The chart below shows compensation for all non-employee directors who served the Company during 2014:

| Name | Fees earned or paid in cash(\$) | Stock awards (\$)(1)(2) | Option awards (\$)(1)(3) | Total (\$) |
|-----------------------|---------------------------------|-------------------------|--------------------------|------------|
| R. John Fletcher | \$ 53,000 | \$ - | \$ 32,761 | \$ 85,761 |
| Arthur L. George, Jr. | \$ 33,050 | \$ 97,650 | \$ 32,761 | \$ 163,461 |
| Stephen R. Hardis | \$ 70,000 | \$ - | \$ 32,761 | \$ 102,761 |
| William C. Jennings | \$ 65,000 | \$ - | \$ 32,761 | \$ 97,761 |
| Joseph P. Keithley | \$ 54,000 | \$ - | \$ 32,761 | \$ 86,761 |
| Barbara J. Lundberg | \$ 34,050 | \$ 97,650 | \$ 32,761 | \$ 164,461 |
| Patrick H. Nettles | \$ 66,000 | \$ - | \$ 32,761 | \$ 98,761 |
| H. Brian Thompson | \$ 60,000 | \$ - | \$ 32,761 | \$ 92,761 |

- (1) The amount shown represents the grant date fair value of the equity awards received by the director in 2014 determined in accordance with FASB ASC Topic 718, using the assumptions described in the Stock Award Plans and Stock-Based Compensation Note to the Company's Financial Statements included in the Form 10-K filed with the SEC for 2014.
- (2) These amounts reflect the grant date fair value of 45,000 RSUs to each of Ms. Lundberg and Mr. George on November 17, 2014. These awards vest as to 25% of the RSUs on each of November 15, 2015, 2016, 2017 and 2018. These were the only stock awards held by non-employee directors at December 31, 2014.
- (3) These amounts reflect the grant date fair value of stock options in respect of 40,000 shares granted on July 15, 2014. These options have an exercise price of \$1.80 (equal to the closing price of the Common Stock on Nasdaq on the date of grant). As of December 31, 2014, the non-employee directors in office held the following total stock options, all of which (except the 2014 grants discussed above) were fully vested and had exercise prices as set forth below:

| | Aggregate # of shares subject to outstanding options | Lowest exercise price | Highest exercise price |
|-----------------------|--|-----------------------|------------------------|
| R. John Fletcher | 260,000 | \$0.44 | \$1.99 |
| Arthur L. George, Jr. | 40,000 | \$1.80 | \$1.80 |
| Stephen R. Hardis | 210,000 | \$0.93 | \$1.99 |
| William C. Jennings | 260,000 | \$0.44 | \$1.99 |
| Joseph P. Keithley | 160,000 | \$0.93 | \$1.99 |
| Barbara J. Lundberg | 40,000 | \$1.80 | \$1.80 |
| Patrick H. Nettles | 260,000 | \$0.44 | \$1.99 |
| H. Brian Thompson | 260,000 | \$0.44 | \$1.99 |

BOARD COMMITTEES

Our Board has standing Audit, Compensation, Nominating and Governance and Technology Committees, each of which has a Chair and two or three additional members from among the independent directors. The current composition of each of these committees is set forth below:

| Audit | Compensation | Nominating and Governance | Technology |
|--|--|---|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Jennings, Chair | <input type="checkbox"/> Fletcher | <input type="checkbox"/> Hardis | <input type="checkbox"/> Fletcher |
| <input type="checkbox"/> Keithley | <input type="checkbox"/> George | <input type="checkbox"/> Lundberg | <input type="checkbox"/> George |
| <input type="checkbox"/> Lundberg | <input type="checkbox"/> Hardis | <input type="checkbox"/> Nettles, Chair | <input type="checkbox"/> Keithley |
| | <input type="checkbox"/> Thompson, Chair | <input type="checkbox"/> Thompson | <input type="checkbox"/> Nettles, Chair |

Committee membership will be reviewed and modified by the Board after the 2015 annual meeting.

Audit Committee

The Audit Committee operates under a written charter and is responsible for assisting the Board of Directors in monitoring and oversight of (1) the integrity of the Company's financial statements and its systems of internal accounting and financial controls and (2) the independence and performance of the Company's independent auditors and any internal auditors engaged by management or the Audit Committee. The Audit Committee has adopted procedures for the handling of complaints regarding accounting, internal controls and auditing matters which are described in our Code of Ethics. The Audit Committee's charter and the Company's Code of Ethics are both available on our website at www.axcelis.com. During 2014, the Audit Committee consisted of Mr. Jennings (Chairman), Mr. Fletcher and Mr. Keithley, until May 13, 2014, at which time Mr. Fletcher's appointment to the Committee ended and Ms. Lundberg's began.

The Board of Directors determined that each of Messrs. Jennings, Fletcher, and Keithley and Ms. Lundberg are audit committee financial experts as defined by the SEC. The Board's conclusions regarding the qualifications of a director as an audit committee financial expert are based on the director's certification that the director has (1) an understanding of generally accepted accounting principles and financial statements; (2) the ability to assess the general application of such principles in connection with the accounting for estimates, accruals and reserves; (3) experience preparing, auditing, analyzing or evaluating financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of issues that can reasonably be expected to be raised by the Company's financial statements, or experience actively supervising one or more persons engaged in such activities; (4) an understanding of internal controls and procedures for financial reporting; and (5) an understanding of audit committee functions.

For a report on the Audit Committee's actions during 2014, see the "2014 Audit Committee Report" below.

2014 Audit Committee Report

The Audit Committee schedules meetings to occur after the preparation of quarterly and annual financial statements and prior to the public release of financial results for the period. The Committee met in May, July and November of 2014, prior to the release of the financial results for the first, second and third quarters of 2014, respectively, and in February 2015, prior to the release of our 2014 year-end results. If appropriate, additional meetings may also be held during the year to address a variety of recurring and non-recurring topics, such as the Company's internal control systems, changes to the Audit Committee charter and other matters.

The Audit Committee met eight times during 2014. At all of these meetings, Axcelis' Chief Financial Officer and Corporate Controller were present for all or a portion of the meeting, as were our independent auditors. Our Chief Executive Officer and General Counsel participated in a majority of these meetings. The Committee's agenda is established by the Committee's Chairman, with input from the Company's Chief Financial Officer. Depending on the content of the meeting, the Committee holds private sessions with the Company's independent auditors, and, separately, with management, at which candid discussions of financial management, accounting and internal control issues can take place. In its executive sessions with representatives of the independent auditors, the Committee seeks to engage in a meaningful dialogue to address any questions or concerns identified by the Committee and to obtain an understanding of any questions or concerns of the auditors.

At the recommendation of the Audit Committee, the Board of Directors appointed Ernst & Young LLP as our Independent Registered Public Accounting Firm to audit our financial statements for 2014. At the 2014 annual meeting of stockholders, our stockholders ratified this appointment. The Audit Committee discussed with our independent auditors and the Company's Chief Financial Officer overall audit scopes and plans, the results of external audit examinations, evaluations by the auditors of the Company's internal controls and the quality of the Company's financial reporting.

Management has reviewed with the Audit Committee the audited consolidated financial statements for the year ended December 31, 2014 prepared by management and audited by Ernst & Young LLP, management's assessment of the effectiveness of our internal control over financial reporting and Ernst & Young LLP's evaluation of our internal control over financial reporting. In addition, the Committee discussed with the independent auditors the matters required to be discussed by Auditing Standard No. 16, *Communications with Audit Committees*, as adopted by the Public Company Accounting Oversight Board ("PCAOB"), and received from the independent auditors their annual written reports covering matters required to be discussed by the auditors with the Committee under the PCAOB's Rule 3526, *Communication with Audit Committees Concerning Independence*. These items were discussed with the auditors and management at an Audit Committee meeting, including a discussion of any relationship that may impact the objectivity and independence of our auditors and whether the provision of any non-audit services by the auditors is compatible with maintaining their independence. The review included a discussion of the quality, not just the acceptability, of the accounting principles, the reasonableness of significant judgments, and the clarity of disclosures in the financial statements.

In reliance on these reviews and discussions, and the report of our Independent Registered Public Accounting Firm, the Audit Committee recommended to the Board of Directors that such audited financial statements be included in the Company's 2014 Annual Report on Form 10-K for filing with the SEC and in the Annual Report to Stockholders which accompanies this proxy statement.

The Committee and the Board have also recommended, subject to reconsideration in the absence of stockholder ratification, the selection of the Company's independent auditors for the current year, as discussed below under "*Proposal 2: Ratification of the Appointment of Our Independent Registered Public Accounting Firm.*"

In performing all of these functions, the Audit Committee acts only in an oversight capacity. Necessarily, in its oversight role, the Committee relies on the work and assurances of the Company's management, who have the primary responsibility for financial statements and reports, and of the independent auditors, who in their report on the audited annual financial statements, express an opinion on the conformity of the Company's annual financial statements to accounting principles generally accepted in the United States.

By the Audit Committee,

William C. Jennings, Chairman
Joseph P. Keithley
Barbara J. Lundberg

Compensation Committee

During 2014, the Compensation Committee was composed of Mr. Thompson (Chairman), Mr. Hardis and Mr. Fletcher, with Mr. George joining the Committee on May 13, 2014. The Compensation Committee holds four regularly scheduled meetings per year and occasionally calls special meetings or acts by written consent to address particular matters. In 2014, the Compensation Committee met four times, and acted once by written consent. The Compensation Committee operates under a written charter, a copy of which is available on our website at www.axcelis.com.

The Compensation Committee establishes the compensation philosophy for Axcelis and has all the authority of the Board of Directors to act or exercise corporate powers with respect to the compensation of the executive officers and the administration of Axcelis' equity compensation plans. The Compensation Committee is responsible to ensure that an annual review of executive officer performance and succession planning is presented to the Board.

The Compensation Committee meets in the first quarter of each year to establish the goals and targets applicable to the executives' annual incentive compensation for the coming year, as well as to determine the results for the year just ended. In 2014, annual equity compensation decisions for executive officers were made on May 12, 2014 with the grants effective on July 15, 2014. Other compensation decisions are made throughout the year, as circumstances warrant and as described in detail in "*Executive Compensation—2014 Compensation Discussion and Analysis*"

below. The Committee may delegate its authority under the 2012 Equity Incentive Plan to the extent permitted by applicable law, including delegating to executive officers the authority to make awards other than to directors or executive officers.

To support its decision-making processes, from time to time, the Compensation Committee accesses the advice of an independent compensation consultant with respect to the structure and competitiveness of the Company's executive compensation programs, as well as the programs' consistency with the Company's executive compensation philosophy. The Committee has the sole authority to hire and fire all outside compensation consultants providing information and advice to the Committee. In 2014, the Company engaged Frederic W. Cook & Co. Inc. to review compensation paid to the six executive officers, which firm has not provided any other services to the Company. Under its charter, the Compensation Committee must assess and consider the independence of any retained advisor under the criteria set forth in the Nasdaq listing standards.

At the request of the Committee, the Chief Executive Officer will make specific proposals to the Committee regarding compensation for executive officers. Management will often work with the Committee's outside consultant to ensure that the consultant has access to the appropriate information to enable the consultant to complete its analyses for the Committee. Management ensures that the consultant's invoices are paid from Company funds. The Chief Executive Officer and the Executive Vice President HR/Legal usually participate in Compensation Committee meetings to present and discuss the material. After such a discussion, executives other than the Chief Executive Officer will leave the meeting, allowing the Compensation Committee time to meet alone with Ms. Puma, after which she leaves the Committee in executive session. All decisions on executive compensation are made by the Compensation Committee in executive session without Ms. Puma.

For a discussion on the Compensation Committee's decisions relating to executive compensation during 2014, see "*Executive Compensation—2014 Compensation Discussion and Analysis*" below. The Compensation Committee also makes recommendations to the Board with respect to policies relating to compensation, including the Company's director and officer stock ownership guidelines, executive compensation clawback policy, and policies relating to the ownership of Axcelis securities by directors and officers. See "*Corporate Governance—Governance Policies*" below.

Compensation Committee Interlocks and Insider Participation

During 2014, the Compensation Committee of the Board of Directors consisted of Mr. Thompson, as Chairman, Mr. Hardis, Mr. Fletcher and Mr. George (beginning in May 2014), none of who has been an officer or employee of Axcelis or had a relationship during 2014 requiring disclosure under Item 404 of Regulation S-K.

Nominating and Governance Committee

During 2014, the Nominating and Governance Committee was composed of Mr. Nettles (Chairman), Mr. Hardis and Mr. Thompson, with Ms. Lundberg joining the Committee after May 13, 2014. The Nominating and Governance Committee is responsible for identifying and nominating candidates for membership on the Board of Directors, making recommendations to the Board on non-employee director compensation and establishing governance policies for the

Board and management. The Committee operates under a written charter and governance policies, copies of which are available on our website at www.axcelis.com. The Committee held five meetings in 2014. The Committee has the sole authority to hire and fire all outside consultants providing information and advice to the Committee.

Under a process established by the Nominating and Governance Committee, the Board of Directors undertakes an annual self-evaluation of Board size, function and management interaction. In addition, each Board member completes an annual self and peer performance review.

The Nominating and Governance Committee manages the process of identifying and recommending individuals to either (A) be nominated by the Board of Directors to be elected as directors by the shareholders or (B) to be appointed by the Board as a director until the next Annual Shareholder meeting, as discussed below under "*Corporate Governance—Board Nomination Process and Requirements*."

The Nominating and Governance Committee also takes the lead in advising the Board on the adoption of Bylaw provisions relating to the nomination of directors and the process for determining the agenda for shareholder meetings. See "*Corporate Governance—Board Nomination Process and Requirements*" and "*Corporate Governance—Annual Meeting Stockholder Deadlines*" below. The Nominating and Governance Committee also adopts, or recommends to the Board the adoption of, Bylaw provisions and governance policies that relate to the operation of the Board and committees and the Company's relationship with shareholders, which are described below under "*Corporate Governance—Governance Policies*." The Nominating and Governance Committee, together with the Compensation Committee makes recommendations to the Board with respect to the Company's director and officer stock ownership guidelines, executive compensation clawback policy, and policies relating to the ownership of Axcelis securities by directors and officers. See "*Corporate Governance—Governance Policies*" below.

CORPORATE GOVERNANCE

Governance Policies

Our Board and committees have adopted policies which ensure that best governance practices are employed at Axcelis. Key policies are as follows:

| Policy | Content |
|--|--|
| Code of Ethics | Our policy, "Ethical Business Conduct at Axcelis," applies to the members of our Board, our executive officers and all other employees. This policy expresses standards that are reasonably designed to deter unethical actions and other wrongdoing and to promote the behavior described in Item 406 of Regulation S-K promulgated by the SEC. |
| Independent Chairman | In 2014, we added a provision to our Governance Policies that, beginning at the 2015 annual meeting, the Chairman of the Board shall be an independent director and shall not also serve as the Chief Executive Officer, other executive officer or employee of the Company during such director's service as Chairman. |
| Board Nominee Age Limit | In 2014, we adopted a policy not to nominate for election to the Board individuals whose age would be 75 or more upon election. Although age is not determinative of an individual's ability to contribute as a director, this policy will provide additional impetus to continually refresh our directors. |
| Director and Executive Officer Stock Ownership Guidelines | Our Stock Ownership Guidelines require that certain stock ownership levels are achieved by each outside Board member and executive officer within five years. These guidelines, as amended in November 2014, provide that non-employee directors should own shares of common stock having a value at least equal to three times the amount of the annual base retainer paid to outside directors for service on the Board (which was \$30,000 in 2014). Ms. Puma, as CEO, is required under these guidelines to own shares having a value equal to three times her base salary. The other executive officers are required to hold the lesser of 65,000 shares or shares having a value equal to 150% of such officer's base salary. Executive officers are subject to holding requirements on exercise of options or vesting of whole share awards until the guidelines are met. All executive officers either have the required ownership position or are within the five year period in which to come into compliance. |
| Executive Officer Compensation Clawback Policy | In 2014, the Board of Directors adopted an Executive Compensation Clawback Policy which authorizes the Board to seek recovery of incentive cash and equity compensation as contemplated by Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. In addition, the Company's policy authorizes a clawback of incentive compensation in the event of any violation of an agreement with the Company or of any policy of the Company (which would include violations of the Company's Business Ethics policy or any applicable law) and also in the event of a voluntary departure to work for a competitor. |

| Policy | Content |
|---|---|
| Policy Restricting Certain Securities Transactions by Directors and Executive Officers | Our Board Member and Executive Officer Policies and Practices Relating to Axcelis Securities ensure that directors and executive officers comply with legal requirements relating to ownership of and transactions in Axcelis securities. In addition, these policies prohibit directors and executive officers from pledging Axcelis stock in a margin account or otherwise, or entering into transactions designed to hedge or offset any decrease in the market value of Axcelis equity securities owned by such director or executive officer. These policies were amended in 2014 to remove language contemplating potential waivers of the policy. The Company's policies also prohibit the purchase of publicly traded options on Axcelis securities and place limitations on the use of standing or limit orders to purchase or sell Axcelis securities. |
| Policy on Change of Control Excise Tax Indemnifications | In 2014, the Board adopted a policy that any future change of control agreement with any future executive officer of the Company shall not include a reimbursement for the effects, including federal, state and local income tax consequences, of any excise tax due on severance compensation, such as those currently due under Sections 280G and 4999 of the Internal Revenue Code. |
| Shareholder Rights | Our governance policies provide that stockholder approval will be solicited on all equity compensation plans and that the Company will not limit the rights of shareholders in contravention of Delaware law or the Nasdaq listing rules. |
| Forum for Governance-Related Claims | In 2014, the Board established a Bylaw provision that specifies that Delaware courts are the exclusive forum for certain types of governance claims under Delaware corporate law, our charter and Bylaws. This Bylaw will provide greater certainty to our stockholders, directors and management that these types of claims will be heard by the Delaware courts, which are the preeminent forums in the United States for resolving these types of claims. This provision will also help avoid frivolous and duplicative litigation, saving on litigation expense. For example, in 2008, different shareholders filed litigation in both Delaware and Massachusetts with essentially the same claims, causing the Company to employ two sets of lawyers to handle essentially the same case. Both of these claims were ultimately dismissed with no liability to the Company. |

Other governance policies adopted by the Company relate to the composition and conduct of the Board of Directors, including a Board nominee age limitation, a director resignation policy in the event of a majority withhold vote on election, a director resignation policy on a Board member's change in occupation, and confidentiality. All of these policies and our Restated Certificate of Incorporation and Bylaws are posted on the Investors page of our website at www.axcelis.com. Any waivers of the Code of Ethics would also be disclosed on that site.

Stockholder Communications to the Directors

Stockholders may communicate with the Axcelis Board of Directors by mailing a communication to the entire Board or to one or more individual directors in care of the

Corporate Secretary, Axcelis Technologies, Inc., 108 Cherry Hill Drive, Beverly, Massachusetts 01915. All communications from security holders to Board members (other than communications soliciting the purchase of products and services) will be promptly relayed to the Board members to whom the communication is addressed.

Annual Meeting Stockholder Deadlines

The Company's annual meeting of stockholders provides our stockholders with an opportunity to propose actions for adoption by the stockholders and to nominate individuals for election to the Board of Directors. Under the Company's Restated Certificate of Incorporation, stockholders may not act by written consent or call a special meeting. Special meetings of stockholders may be called by the Board and for the purposes determined by the Board.

The Company's Bylaws include provisions requiring advance notice of proposals by stockholders for items to include in the agenda for the annual meeting and for director nominations. In 2014, in order to provide clarity on this process to stockholders, the Board amended the Bylaws to expand the description of the amount and nature of information required about a stockholder's proposal and the stockholder making the proposal. Our Bylaws have been filed with the SEC and are also posted on the Investors page of our website at www.axcelis.com.

If you intend to bring proposed business to the 2016 annual meeting and you would like us to consider the inclusion of your proposal in our proxy statement for the meeting, you must provide written notice to Axcelis of such proposal by November 26, 2015 (120 days before the anniversary date of the mailing of this proxy statement). Any such proposal should comply with the requirements of Rule 14a-8 promulgated under the Exchange Act.

If you wish to bring business before or propose director nominations at the 2016 annual meeting, you must give written notice to Axcelis between January 15, 2016 and February 13, 2016 (the dates 120 days and 90 days, respectively, before the anniversary of the 2015 annual meeting). These dates assume that the 2016 annual meeting is held not more than 30 days before or 30 days after May 13, 2016. If that is not the case, you must give written notice to Axcelis between the date 120 days before the 2016 annual meeting date and the later of (A) 90 days before the 2016 annual meeting date or (B) the date 10 days after public announcement of the 2016 annual meeting date.

Notices of stockholder proposals and nominations shall be given in writing to Axcelis Technologies, Inc., 108 Cherry Hill Drive, Beverly, Massachusetts 01915, Attn: Corporate Secretary.

Board Nomination Process and Requirements

In an on-going effort to refresh the Board of Directors, the Nominating and Governance Committee from time to time seeks new nominees for election to the Board through a variety of channels, including the engagement of director search firms, less formal recommendations from shareholders of the Company and through business and personal contacts. Director search firms engaged by the Company are paid a retainer fee to identify and screen candidates meeting specifications established by the Committee for a particular Board nominee search. Such specifications will change from one search to another based on the Committee's determination of the needs of Board composition at the time a particular search is initiated.

The Nominating and Governance Committee will evaluate any candidate recommended for nomination as a director, whether proposed by a stockholder or identified through the Committee's own search processes, about whom it is provided appropriate information. In evaluating a candidate, the Committee must, at a minimum, determine that the candidate is capable of discharging his or her fiduciary duties to the stockholders of the Company. The Committee will determine whether the particular nomination would be consistent with Axcelis' governance policies. These policies provide in part that all new candidates for election to the Board and all Board members eligible for nomination for re-election to the Board shall be evaluated on the following criteria:

- (a) such candidate or Board member's current level of, and on-going commitment to, education regarding the responsibilities of a member of a board of directors under standards established by the Nominating and Governance Committee;
- (b) the adequacy of such candidate or Board member's time available to commit to responsibilities as a member of the Board;
- (c) the existence of any financial relationship with the Company other than that arising as an employee of the Company, as a Board member and/or as a stockholder; and
- (d) in the case of re-election, such member's compliance with our Director Stock Ownership Guidelines.

If a candidate is presented to the Nominating and Governance Committee at a time when it has established specifications for a particular Board search, the Committee will consider whether the candidate satisfies the established specifications. More generally, the Committee will consider a candidate's skills, character, leadership experience, business experience and judgment, and familiarity with relevant industry, national and international issues in light of the backgrounds, skills and characteristics of the current Board and the needs of the Company's business. The Nominating and Governance Committee will consider a nominee's national origin or ethnicity if it contributes to Board diversity that is beneficial to the Company for business reasons. Given the portion of the Company's revenues derived from Asian customers, Board members with insight into Asian business or markets are highly valued. Finally, the Committee must consider whether a nominee (in conjunction with the existing Board members) will assist the Company in meeting the requirements of applicable law, the rules of the SEC, the Nasdaq listing standards, and the United States Internal Revenue Code (the "IRC") regarding the independence, sophistication and skills of the members of the Board of Directors and the Audit, Compensation and Nominating and Governance committees.

In order to provide clarity to our stockholders on the information required to support the consideration of an individual as a candidate for nomination for election as a director, the Company amended its Bylaws in 2014 to expand the amount and nature of information required about a director candidate and the stockholder proposing his election. These disclosure requirements also ensure that all stockholders entitled to vote on a director nomination have all relevant information about the nominee. Our Bylaws have been filed with the SEC and are also posted on the Investors page of our website at www.axcelis.com. Such information should be sent to the Nominating and Governance Committee of Axcelis Technologies, Inc., 108 Cherry Hill Drive,

Beverly, Massachusetts 01915, Attn: Corporate Secretary. The Committee may require further information, including but not limited to the completion of a questionnaire designed to elicit disclosures required by the securities laws and to determine eligibility for Board and committee membership.

Certain Relationships and Related Transactions

Review Process

Nasdaq listing rules require the Company to conduct an appropriate review of all related party transactions which are disclosable under Item 404 of Regulation S-K. In its charter, the Nominating and Governance Committee is given responsibility to review and approve any such related party transactions, including (a) business arrangements between the Company and directors or their affiliates or between the Company and employees, other than compensation for service as a director or as an employee of the Company, and (b) any other relationships between a director or employee and the Company or a third party (including membership on the boards of directors of a third party) which create the appearance or reality of a current or potential conflict of interest.

Axcelis reviews all relationships and transactions reported to it in which the Company and our directors and executive officers or their immediate family members are participants to determine whether such persons have a direct or indirect material interest. The Company's General Counsel is primarily responsible for the development and implementation of processes and controls to obtain information from the directors and executive officers with respect to related person transactions and for then determining, based on the facts and circumstances, whether the Company or a related person has a direct or indirect material interest in the transaction. As required under SEC rules, transactions that are determined to be directly or indirectly material to the Company or a related person are disclosed in the Company's proxy statement. In addition, the Nominating and Governance Committee reviews and approves or ratifies any related person transaction that is required to be disclosed. In the course of its review and approval or ratification of a disclosable related party transaction, the Nominating and Governance Committee considers:

- the nature of the related person's interest in the transaction;
- the material terms of the transaction, including, without limitation, the amount and type of transaction;
- the importance of the transaction to the related person;
- the importance of the transaction to the Company;
- whether the transaction would impair the judgment of a director or executive officer to act in the best interest of the Company; and
- any other matters the Committee deems appropriate.

Any member of the Nominating and Governance Committee who is a related person with respect to a transaction under review may not participate in the deliberations or vote respecting approval or ratification of the transaction, provided, however, that such director may be counted in determining the presence of a quorum at a meeting of the Committee that considers the transaction.

2014 Related Party Disclosures

During 2014, no related person transactions requiring disclosure in the proxy statement were identified or submitted to the Nominating and Governance Committee for approval.

James W. Green, one of the nominees for election to the Board of Directors, is the Chief Executive Officer of Analogic Corporation, a company from which Axcelis makes arms-length commercial purchases of components, the amount of which is not material either to the Company or Analogic Corporation.

Three of the current Board members nominated for re-election (Mr. Keithley, Mr. George and Ms. Puma) are also Board members of Nordson Corporation. The Company has no business relationship with Nordson Corporation.

Risk Oversight by the Board of Directors

Axcelis' business involves many unavoidable operational and financial risks which management and our Board seek to mitigate through careful planning and execution. Our risks include:

- The highly competitive nature of the semiconductor equipment industry, which may limit the rate and level of acceptance of our current products by customers;
- We may be unable to continually invest in product improvement and new product development to meet customer expectations for both technological and cost factors;
- We may be unable to maintain an adequate global infrastructure to support our customers;
- The cyclical nature of the semiconductor industry and its overall condition in a particular period;
- We may be unable to access sufficient capital to meet fluctuating capital requirements; and
- The uncertainties of global economies, including the availability of credit.

A more extensive list of risk factors associated with our business can be found in the Company's 2014 Annual Report on Form 10-K filed with the SEC and in the Annual Report to Stockholders which accompanies this proxy statement.

The Board of Directors has two primary methods of overseeing risk. The first method is through its Enterprise Risk Management ("ERM") process, which allows for full Board oversight of the most significant risks facing the Company. The second is through the functioning of the Board committees. The goal of the ERM process is to provide an ongoing effort, effected at all levels of the Company across all corporate functions, to identify, assess and monitor risk, and to agree on mitigating action. At each quarterly in-person Board meeting, senior management provides a report on specific risks within identified core areas, commenting on the trend and the status of the risk at the time of the report. The Audit Committee will periodically review the ERM process to ensure that it is robust and functioning effectively.

In addition to the ERM process, each committee of the Board oversees specific areas of risk relevant to the committee through direct interactions with the Chief Executive Officer and the heads of corporate functions. For instance, the Audit Committee oversees risk relating to financial reporting through its interactions with the Chief Financial Officer and Corporate Controller. The Technology Committee oversees risk in the Company's technology and product development initiatives. This Committee, currently comprised of Messrs. Fletcher, George, Keithley and Nettles (chair), met four times during 2014. A committee may address risks directly with management or, where appropriate, may elevate a risk for consideration by the full Board.

The separate ERM process and Board committee approach to risk management leverages the Board's leadership structure to ensure that risk is overseen by the Board both company-wide and through specific areas of competency. In order to ensure that longer term risks are also considered by the Board in a timely and consistent matter, the full Board dedicates one in-person meeting each year to review and approve a strategic plan and to review and approve a profit plan. These plans are used to manage the business throughout the year. In addition, one Board meeting each year is focused on longer term technology development to ensure that emerging market trends are identified and understood and that their implications for Axcelis' products are appropriately addressed. Finally, the Board dedicates an in-person meeting each year to an executive talent review, which includes a review and discussion of succession planning for key management positions.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires our directors, executive officers and persons owning more than 10% of our registered equity securities to file with the SEC reports of their initial ownership and of changes in their ownership of our common stock and to provide us with copies of all Section 16(a) reports they file.

To our knowledge, based solely on our review of copies of reports furnished to us and written representations that no other reports were required, during 2014, our directors, officers, and 10% stockholders complied with all Section 16(a) filing requirements.

PROPOSAL 2: RATIFICATION OF THE APPOINTMENT OF OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Upon the recommendation of its Audit Committee, the Board of Directors has appointed the independent registered public accounting firm of Ernst & Young LLP as independent auditors to conduct the annual audit of our financial statements for 2015 and is seeking stockholder ratification of the appointment. Ernst & Young LLP is an internationally recognized independent registered public accounting firm that audited the Company's financial statements in 2014 and which the Audit Committee believes is well qualified to continue.

Representatives of Ernst & Young are expected to attend the annual meeting and be available to respond to appropriate questions. They will also have the opportunity to make a statement if they desire.

The aggregate fees billed for each of the last two fiscal years for professional services rendered by Ernst & Young LLP were as follows:

| | 2013 | 2014 |
|---|-------------|-------------|
| Audit Fees | \$1,208,500 | \$1,355,000 |
| Audit Related Fees | \$18,000 | \$75,159 |
| Tax Fees | | |
| Tax compliance and preparation of returns | \$35,405 | \$16,315 |
| International tax planning | \$51,300 | \$14,423 |
| General tax planning and other tax services | \$17,615 | \$0 |
| Total Tax Fees | \$104,320 | \$30,738 |
| All Other Fees | \$0 | \$0 |
| Total Fees | \$1,330,820 | \$1,460,897 |

Audit fees include statutory audits for subsidiaries and branches operating in countries outside of the United States. Audit related fees include the audit for the Company's 401(k) plan required under ERISA. International tax planning relates to the setting of fair compensation for services provided to us by our foreign subsidiaries to ensure appropriate revenue levels are reported for taxation in those foreign countries.

Under its charter, the Audit Committee must pre-approve the fees to be paid to the independent auditor for audit services. In addition, the Audit Committee has adopted a policy requiring the Committee's pre-approval of the engagement of the Company's independent auditor to perform specific audit-related or non-audit (including tax) services and fees for such services. This pre-approval of audit-related and non-audit services performed by the independent auditor is designed to avoid any engagements which could impair the auditor's independence. The policy also prohibits engagement of the independent auditor to perform certain types of services that are always viewed as inconsistent with independence. Any approval required under the policy must be given by the Audit Committee or by any member or members to whom the Committee has delegated that authority. The Audit Committee does not delegate its responsibility to approve services performed by the independent auditor to any member of management.

The standard applied by the Audit Committee in determining whether to grant approval of any type of non-audit service, or of any specific engagement to perform a non-audit service, is whether the services to be performed, the compensation to be paid therefor and other related factors are consistent with the independent auditor's independence under guidelines of the SEC, the PCAOB and applicable professional standards. Relevant considerations include whether the work product is likely to be subject to, or implicated in, audit procedures during the audit of our financial statements, whether the independent auditor would be functioning in the role of management or in an advocacy role, whether the independent auditor's performance of the service would enhance our ability to manage or control risk or improve audit quality, whether such performance would increase efficiency because of the independent auditor's familiarity with our business, personnel, culture, systems, risk profile and other factors, and whether the amount of fees involved, or the proportion of the total fees payable to the independent auditor in the period that is for non-audit services, would tend to reduce the independent auditor's ability to exercise independent judgment in performing the audit.

All of the non-audit services rendered by Ernst & Young LLP in respect of the 2013 and 2014 fiscal years were pre-approved by the Audit Committee in accordance with this policy.

Ernst & Young LLP informed the Company that they are not aware of any relationship with the Company that, in their professional judgment, may reasonably be thought to bear on the independence of Ernst & Young LLP.

Ratification of the appointment of Ernst & Young LLP by the stockholders is not required by law or by our Bylaws. The Board of Directors is nevertheless submitting it to the stockholders to ascertain their views. If this proposal is not approved at the annual meeting by the affirmative vote of holders of a majority of the votes cast at the meeting, the Audit Committee intends to reconsider its recommendation of Ernst & Young LLP as independent auditors. The Company may retain the firm for 2015 notwithstanding a negative stockholder vote.

The Board of Directors recommends a vote FOR ratification of the appointment of Ernst & Young LLP.

PROPOSAL 3: APPROVAL OF AMENDMENT TO THE 2012 EQUITY INCENTIVE PLAN

We are seeking stockholder approval of an amendment to our 2012 Equity Incentive Plan (the "2012 EIP") increasing the number of shares authorized for issuance by 2,500,000 shares (or such lesser amount as may be fixed by our Chief Executive Officer prior to the 2015 annual meeting). An increase of 2,500,000 shares would bring the total reserve under the 2012 EIP from 8,550,000 shares reserved as of December 31, 2014 to 11,050,000 shares, excluding from both amounts shares recaptured from forfeited grants under the 2000 Stock Plan. Of the shares previously approved (including recaptured shares), 2,753,840 shares remained available for grant as of December 31, 2014. If approved, we expect to use the additional authorized shares for continued periodic equity grants to employees (including executive officers), directors and consultants. Our Board of Directors recommends a vote FOR approval of the amendment to the 2012 EIP for the following reasons, each of which is discussed below in more detail:

- Our ability to attract, motivate and retain high-performing individuals as employees, directors and consultants depends on the availability of equity compensation.
- Our three year average burn rate for equity grants (counting restricted stock and RSUs at 1.5 shares) is 4.6%, less than the Russell 3000 average burn rate of 4.75% for companies in the semiconductors and semiconductor equipment business (Global Industry Classification Standard 4350).
- The total voting power dilution from the 2012 EIP and our prior equity grant plan is expected to be less than 20% after the proposed share reserve increase.

By approving the 2012 EIP, the stockholders will be approving, among other things, the eligibility requirements, performance goals, and limits on equity-based incentive awards contained therein for purposes of Section 162(m).

Why the 2012 EIP is Important

The 2012 EIP is our sole vehicle for making equity awards to our employees (including executive officers), directors and consultants. Our ability to attract, motivate and retain high-performing individuals in these roles is vital to our ability to compete successfully in the market and to increase stockholder value. We believe our ability to grant equity incentives as an element of compensation is essential for us to remain competitive in attracting and retaining such employees, consultants and directors. We believe equity incentives motivate high levels of performance and provide an effective means of recognizing employee contributions to the success of Axcelis. Moreover, equity incentives align the interests of the employees, consultants and directors with the interests of our stockholders—when Axcelis performs well, employees, consultants and directors are rewarded along with other stockholders. Axcelis also occasionally uses equity in lieu of cash compensation in order to conserve cash to invest into the business among other reasons, as we did in 2013 in our 2013 Base Pay RSU Program as discussed in our proxy statement for our 2014 annual meeting and as part of our 2014 Axcelis Management Incentive Plan ("2014 AMI"), which is discussed below in "*2014 Compensation Discussion and Analysis*."

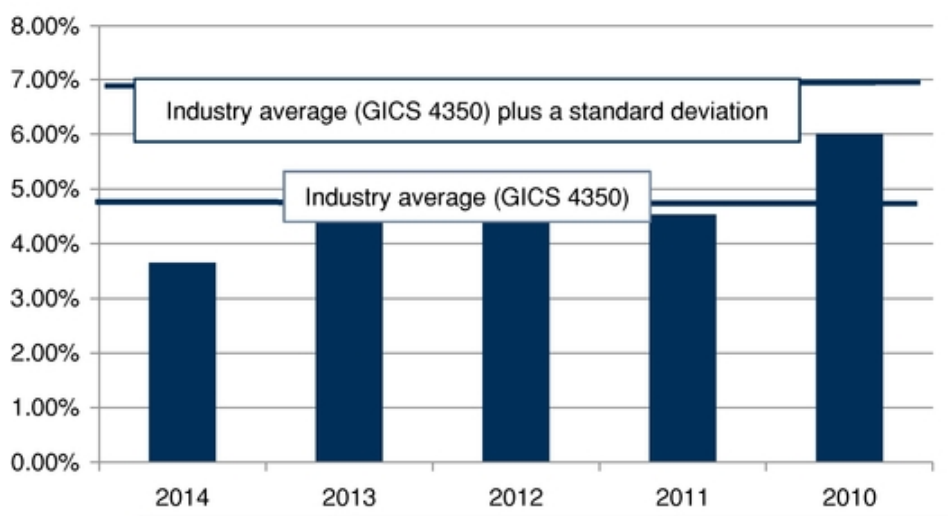
Because the 2012 EIP is the only plan under which we can grant equity incentives, maintaining its viability by increasing the number of shares available for grant is essential for us to be able to continue to use equity incentives to attract, motivate and retain the employees, consultants, and directors necessary for our future success. Without this amendment, we believe that the shares available for grant under the 2012 EIP will be insufficient to meet our anticipated recruiting and retention needs.

Careful Management of Equity Award Use: Burn Rate and Voting Power Dilution from the Axcelis Equity Award Plans

The proposed increase, together with the shares available under the 2012 EIP at year end 2014, will make approximately 5 million shares available for grant in 2015. We believe that this increase is necessary and reasonable for us to maintain our equity grant awards for a one year period, assuming we maintained the level of grants we have in the past few years.

We seek to maximize stockholder value by granting only the number of equity awards necessary to attract, retain and reward key employees, consultants, and directors, which amount can vary from year to year. We ensure our burn rate is below the Russell 3000 average burn rate for GICS 4530 (Semiconductors and Semiconductor Equipment) plus a standard deviation. Our three year average burn rate (counting restricted stock and RSUs at 1.5 shares) for 2012, 2013 and 2014 is 4.6%, below the GICS 4530 average, which is currently 4.75%. The chart below illustrates our equity award burn rate (counting restricted stock and RSUs at 1.5 shares) for the past five years in comparison to this GICS 4350 average plus a standard deviation:

Axcelis Equity Grant Burn Rate Consistently Below Industry Average and Standard Deviation



The Board is cognizant of voting power dilution and, accordingly, has limited the proposed increase to 2,500,000 shares in order to keep the total percentage voting power dilution associated with our equity award plans ("Plan VPD") to less than 20% of total capitalization. We have calculated Plan VPD by dividing the sum of (1) the proposed 2012 EIP reserve increase, (2) the shares currently available under the 2012 EIP and (3) the number of shares issuable in

respect of outstanding unexercised stock options and unvested RSUs granted under the 2012 EIP and our prior award plan, the 2000 Stock Plan (the "Equity Plan Overhang") by the total shares outstanding plus the sum of (1)-(3) above. This calculation, at year end 2014 with the proposed reserve increase of 2,500,000 shares, is shown below:

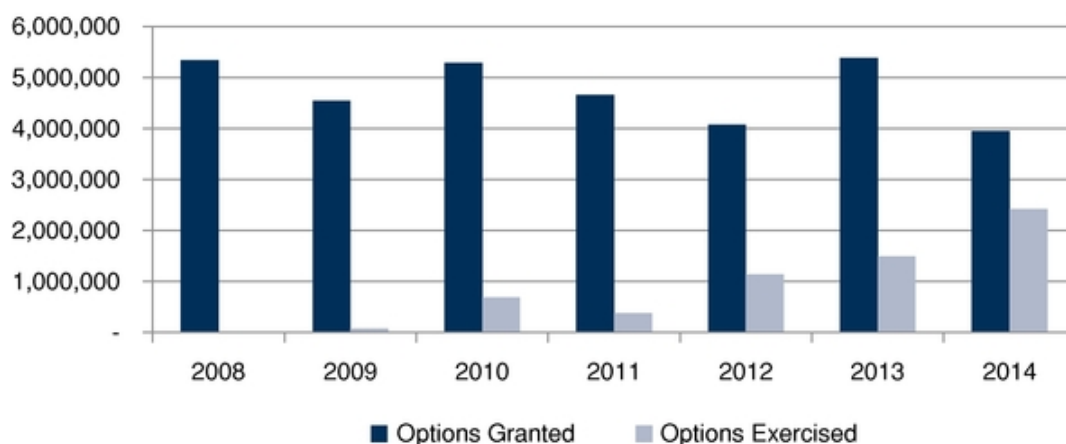
| Source | Share Amounts |
|--|---------------|
| Shares Available for Grant under 2012 EIP at YE 2014 | 2,753,840 |
| Equity Plan Overhang | 21,806,910 |
| Plan VPD Shares at YE 2014 | 24,560,750 |
| Proposed Increase to 2012 EIP Share Reserve | 2,500,000 |
| Total Proposed VPD Shares with Reserve Increase | 27,060,750 |
| Common Stock Outstanding at YE 2014 | 112,615,790 |

Plan VPD as a Percent of Shares Outstanding plus Total Plan VPD Shares (with Reserve Included) 19.37%

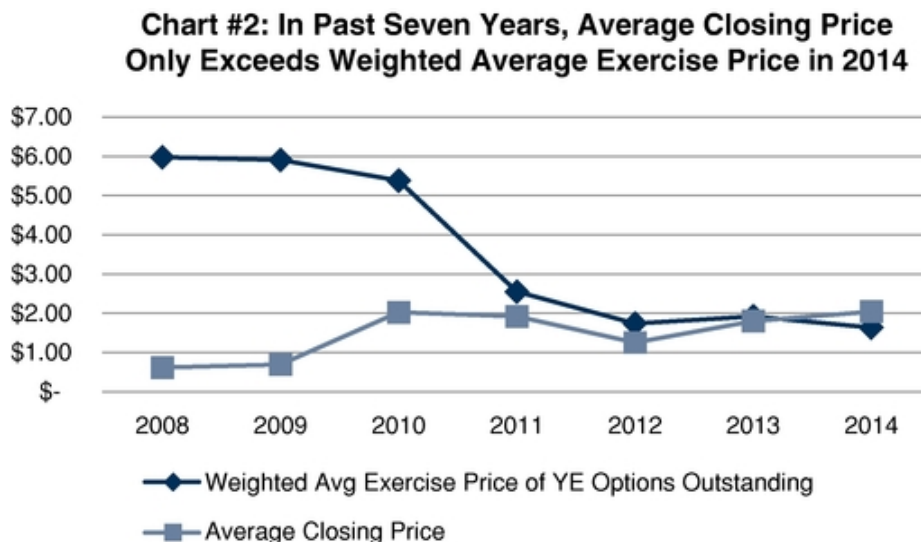
Our Plan VPD Shares are dominated by the Equity Plan Overhang which represented 89% of the Plan VPD shares at year end 2014. Our Equity Plan Overhang is high not because we have engaged in high granting activity, but because we have seen low option exercise activity for a number of years.

Chart #1 below shows our annual option grants over the last 7 years in comparison to annual option exercises. Option exercises have significantly lagged the rate of option grants during this period. Using stock options as the general award type creates a high overhang if the options are not exercised. Unlike restricted stock or restricted stock unit grants, where the shares leave the overhang as the awards vest, option shares continue to be recorded in the overhang, despite vesting, until they are exercised.

**Chart #1:
Options Granted and Options Exercised over Last 7 Years
(2008-2014)**



The reason for the significant lag in option exercises is shown in Chart #2 below. Since our annual option program began in November 2008, the weighted average exercise price of outstanding options has exceeded the average closing price during each year, until 2014, leading to the muted exercise activity shown in Chart #1. However, exercise activity is increasing as our stock price has improved, so we expect our Equity Plan Overhang to decrease in the future.



We do not, as a matter of course, make public forecasts as to our total shares outstanding and utilization of various equity awards due to the unpredictability of the underlying assumptions and estimates (which our Board has considered in evaluating the factors listed above). We have included the above summary to give our stockholders access to the information that was considered by our Board for purposes of evaluating the approval of the amendment to the 2012 EIP.

Board Recommendation

The Board of Directors believes that the amendment to the 2012 EIP promotes important corporate goals and is therefore in the best interests of Axcelis' stockholders. The amendment to the 2012 EIP will provide Axcelis with the shares necessary to offer effective equity incentives, which are essential for Axcelis to attract, motivate and retain employees and to align Axcelis' compensation with our stockholders' interests.

The Board of Directors recommends that you vote FOR the proposed amendment to the 2012 EIP.

Outstanding Equity Awards and Shares Available to Grant

The following table shows the awards outstanding and that may be made under our equity incentive plans as of December 31, 2014.

| | Number of Options Outstanding | Number of Restricted Stock Units Outstanding | Shares Available to Grant under Plan |
|------------------------------|-------------------------------|--|--------------------------------------|
| 2012 Equity Incentive Plan | 11,412,625 | 97,500 | 2,753,840 |
| 2000 Stock Plan (terminated) | 10,291,489 | 5,296 | 0 |
| Total | 21,704,114 | 102,796 | 2,753,840 |

Summary of the 2012 Equity Incentive Plan

The following is a brief description of the material features of the 2012 EIP, as amended, and is qualified in its entirety by reference to the terms of the 2012 EIP. Stockholders may obtain a copy of the 2012 EIP upon written request to the Corporate Secretary of the Company.

Administration

The 2012 EIP is administered by the Compensation Committee or other committee appointed by the Board. The Compensation Committee has authority to: select the participants who will receive awards, grant awards, determine the terms, conditions, and restrictions applicable to the awards, determine how any exercise price is paid, modify or replace outstanding awards within the limits of the 2012 EIP, accelerate the date on which awards become exercisable, waive the restrictions and conditions applicable to awards, and establish rules governing the 2012 EIP, including special rules applicable to awards made to employees who are foreign nationals or are employed outside the United States. Subject to specific limitations under the Plan, as discussed below, the Compensation Committee is given the broad authority to establish these terms in order best to achieve the purpose of the 2012 EIP. The Compensation Committee may also assume awards granted by an organization acquired by the Company or may grant awards in replacement of any such awards.

Types of Awards

The 2012 EIP provides for the grant of stock options (incentive stock options or "non-qualified" stock options), restricted stock, RSUs, stock appreciation rights, awards of common stock that are not subject to restrictions or forfeiture and other awards the value of which is based in whole or in part on the value of common stock and which may be settled in cash, common stock or other property ("stock equivalents"). These awards are payable in cash or common shares, or any combination thereof, as established by the Compensation Committee.

Eligibility

All employees and consultants of Axcelis and its subsidiaries, and all directors of Axcelis, are eligible to participate in the 2012 EIP. Participants are selected by the Compensation Committee of our Board of Directors in its discretion. At December 31, 2014, the Company had approximately 740 employees and 8 non-employee directors.

**Plan
Limitations
on Award
Terms**

The 2012 EIP establishes certain limits on the terms of awards granted under the 2012 EIP:

- The exercise price of options and stock appreciation rights granted under the 2012 EIP must be not less than the fair market value of the common stock on the date of grant.
- The term of options and stock appreciation rights granted under the 2012 EIP may not exceed seven years.
- In the case of awards granted to the Company's executive officers, the vesting, settlement or lapse of forfeiture restrictions solely based on continued employment, service or the passage of time must (with certain exceptions) occur (i) with respect to no more than $\frac{1}{3}$ of the shares subject to the award in any one year, and (ii) over not less than four years from the date of grant for all shares subject to the award.
- The 2012 EIP prohibits the Committee, without obtaining stockholder approval, from amending any outstanding option or stock appreciation right to reduce the exercise price or canceling and replacing an option or stock appreciation right with an award exercisable for common stock at a lower exercise price. In 2014, the Board amended the 2012 EIP to provide that no award shall be canceled in exchange for a cash payment from the Company to the award owner, except in the event of a corporate transaction in which a company other than the Company is the surviving, continuing, successor or purchasing entity and in which the stockholders of the Company receive consideration that is all or predominantly cash in exchange for their shares of common stock in the transaction.
- In order to comply with the exemption from Section 162(m) of the IRC relating to performance-based compensation, no participant may be granted stock options, stock appreciation rights or other awards intended to satisfy the requirements for "qualified performance-based compensation" within the meaning of Section 162(m) of the IRC, that in the aggregate, exceed 1,250,000 shares during any fiscal year, and no performance-based award settled in cash may pay a participant more than \$1,000,000 in any one year.

**Share
Counting
Under the
Plan**

The following provisions apply to determining how the available shares under the 2012 EIP are deemed to be used:

- Each share subject to an award under the 2012 EIP other than options and stock appreciation rights shall be counted as 1.5 shares;
- Shares subject to an award granted under the 2000 Stock Plan or the 2012 EIP that is forfeited, terminated, or canceled without having been issued will become available for grant under the 2012 EIP, subject to certain exceptions relating to incentive stock options;
- Shares subject to awards granted under the 2012 EIP on assumption of, or substitution for, equity awards of a company acquired by Axcelis will not count against the share reserve under the 2012 EIP; and
- Outstanding shares used to pay the exercise price of an option or stock appreciation right or shares which are withheld by the Company to satisfy the exercise price or tax withholding due on exercise or vesting may not be netted out against the shares issued on an award granted under the 2012 EIP.

Performance Objectives for Performance-Based Awards

The 2012 EIP provides that, when so determined by the Compensation Committee, awards may specify performance objectives that, if achieved, will result in vesting, exercisability or the lapse of restrictions on awards. Awards with performance objectives may be intended to satisfy the requirements for "performance-based compensation" under Section 162(m) of the IRC. Such grants should specify one or more objective performance goals and the effect of achieving the goal at or above a specified level for or within a requisite period or at a requisite date. For purposes of Section 162(m), the Compensation Committee must establish any performance goal near the beginning of any performance period and at a time when the outcome of the goals is substantially uncertain, and it must certify that the goal was achieved before the award is paid. Performance objectives may be based on any of the following criteria: revenue; revenue growth; sales; expenses; margins; net income; earnings or earnings per share; cash flow; stock price; stockholder return; return on investment; return on invested capital, assets, or equity; profit before or after tax; operating profit; operating margin; return on research and development investment; market capitalization; quality improvements; market share; cycle time reductions; customer satisfaction measures; strategic positioning or marketing programs; market penetration or expansion; business / information systems improvements; expense management; infrastructure support programs; human resource programs; customer programs; technology development programs; goals relating to acquisitions or divestitures, or any combination of the foregoing, including without limitation goals based on any of such measures relative to peer groups or market indices, and may be particular to an award recipient or may be based, in whole or in part, on the performance of the division, department, line of business, subsidiary, or other business unit, whether or not legally constituted, in which the award recipient works or on the performance of the Company generally.

Treatment of Awards in an Extraordinary Event

In the event of a recapitalization, stock dividend, stock split, other distribution to stockholders (other than normal cash dividends), or similar transaction, the Compensation Committee will adjust the number and class of shares that may be issued under the 2012 EIP (including the number of shares that may be subject to awards granted to a participant in any fiscal year) and the number and class of shares, and the exercise price, applicable to outstanding awards. Similar adjustments may be made in the event of reorganization, merger, spin-off or other corporate transaction affecting the common stock where an adjustment is required in order to preserve the benefits intended to be provided by the plan. If considered appropriate, the Committee may make provision for a cash payment with respect to all or part of an outstanding award instead of or in addition to any such adjustment.

In the event of a corporate transaction in which a company other than Axcelis is the surviving, continuing, or successor purchasing entity, outstanding awards may be assumed by such other company or may be exchanged for substituted awards from such other company. The terms of such assumed or substituted awards shall be appropriate in light of (A) the consideration received by the Company's stockholders in the transaction and (B) the terms of the outstanding awards. Awards outstanding under the 2012 EIP which are not assumed or exchanged shall terminate on such terms as the Committee may determine. Notwithstanding the foregoing, if in such a transaction the stockholders of the Company receive consideration that is predominantly cash, then either (A) any vesting or lapse of forfeiture provisions on outstanding awards under the 2012 EIP shall accelerate on the closing of the transaction and the award holder may share in the transaction consideration or (B) such awards shall be compensated through a separate payment in an amount that the award holder would have received in the transaction assuming such acceleration, as determined by the Compensation Committee.

Non-Assignability of Awards

No award granted under the 2012 EIP may be transferred or assigned by a participant or eligible transferee except on such terms as the Compensation Committee determines, and incentive stock options may be transferred only to the extent permitted by the Internal Revenue Code.

Amendment and Termination of the 2012 EIP

The Board of Directors may amend, suspend, or terminate the 2012 EIP at any time, subject to stockholder approval as needed to comply with tax or regulatory requirements.

Summary of U.S. Federal Income Tax Consequences of Awards under the 2012 EIP

The following is a brief summary of certain consequences under current U.S. federal income tax law of certain transactions under the 2012 EIP. This summary is not intended to be complete and does not describe state, local, foreign or other tax consequences.

Incentive Stock Options. In general, an employee will not recognize taxable income at the time an incentive stock option is granted or exercised. However, the excess of the fair market value of the common shares acquired upon exercise over the exercise price is potentially subject to the alternative minimum tax. If the option is not exercised by a specified date after termination of the holder's employment, the income tax treatment will be the same as that for a non-qualified stock option, described below. Upon disposition of the common shares acquired upon exercise, capital gain or capital loss will be recognized in an amount equal to the difference between the sale price and the exercise price, so long as minimum holding period requirements are satisfied. If the holding period requirements are not satisfied, the employee will recognize ordinary income upon disposition of the shares equal to the difference between the exercise price and the lesser of the fair market value of the common shares on the date the option is exercised or the amount realized in the disposition. Any remaining gain or loss is treated as a capital gain or capital loss.

Non-Qualified Stock Options. In general, a participant will not recognize taxable income upon the grant of a stock option that does not qualify as an incentive stock option (a "non-qualified stock option"). Upon exercise, the participant will recognize ordinary income in an amount equal to the difference between the exercise price and the fair market value of the common shares acquired upon exercise. Upon disposition of the common shares, appreciation or depreciation after the date of exercise will be treated as either capital gain or capital loss.

Restricted Stock Units. The participant will recognize no income at the time RSUs are awarded to the participant. When shares are issued on the vesting of RSUs, the participant will recognize compensation income equal to the excess of the fair market value of the vested shares stock at that time over the amount, if any, paid by the participant for the shares. Upon disposition of shares after issuance, any gain or loss realized by a participant will be treated as capital gain or loss.

Restricted Stock. Unless a participant makes an election under Section 83(b) of the IRC, the participant will recognize no income at the time restricted stock is awarded to the participant. When the restrictions lapse or are otherwise removed, the participant will recognize compensation income equal to the excess of the fair market value of the restricted stock at that time over the amount, if any, paid by the participant for the restricted stock. Dividends paid on restricted stock during any restriction period will, unless the participant has made an election under Section 83(b) of the IRC, constitute compensation income. Upon disposition of common shares after the restrictions lapse or are otherwise removed, any gain or loss realized by a participant will be treated as capital gain or loss. If a participant makes an election under Section 83(b) of the IRC, the participant will recognize compensation income equal to the excess of the fair market value of the common shares on the date of grant over the price paid for those common shares. Dividends paid on the stock thereafter will be treated as dividends taxable to the participant.

Stock Appreciation Rights and Stock Equivalents. The grant of stock appreciation rights and stock equivalents will have no immediate tax consequences to the participant receiving the grant. The amount received by the participant upon the exercise of the stock appreciation rights or stock equivalent will be included in the participant's ordinary income in the taxable year in which award is exercised or vested.

Parachute Payment Tax. The value of any accelerated vesting or exercisability of options or stock appreciation rights, or any accelerated lapse of restrictions on restricted stock or RSUs, in connection with a change in control of the Company will be taken into account in determining whether the participant is deemed to have received an "excess parachute payment" under Section 280G of the IRC. This may subject the participant to an excise tax.

Tax Consequences to the Company. To the extent that a participant recognizes ordinary income in the circumstances described above, the Company or the subsidiary for which the participant performs services will be entitled to a corresponding tax deduction provided that, among other things, (a) the income meets the test of reasonableness, (b) is an ordinary and necessary business expense, (c) is not an "excess parachute payment" and (d) is not disallowed by the \$1 million limitation on certain executive compensation under Section 162(m) of the IRC.

Under Section 162(m), the Company's federal income tax deductions may be limited to the extent total annual compensation in excess of \$1,000,000 is paid to any of our principal executive officer and our other three most highly compensated executive officers, other than our principal financial officer. However, deductions for certain "performance based compensation" are exempted from this limitation. The 2012 EIP has been structured with the intention to enable the Compensation Committee to make awards (including cash-based awards) that qualify as performance-based compensation, and are deductible without regard to the limitations imposed

by Section 162(m). However, our Compensation Committee believes that our executive compensation program should be flexible, maximize our ability to recruit, retain and reward high-performing executives and promote varying corporate goals. As such, nothing in this proposal precludes the Committee from granting awards that do not qualify for tax deductibility under Section 162(m).

Awards Available under the 2012 Equity Incentive Plan

All employees and consultants of Axcelis and its subsidiaries, and all directors of Axcelis, are eligible to participate in the 2012 EIP. Participants are selected by the Compensation Committee of our Board of Directors in its discretion. The benefits or amounts that will be received in the future under the 2012 EIP by named executive officers, executive officers as a group, and all current non-employee directors or employees who are not executive officers as a group are not determinable because grants are subject to the discretion of the Compensation Committee. Our current grant practices are described in "Compensation of Directors" and "2014 Compensation Discussion and Analysis."

The table below shows the number of RSUs and stock options awarded under the 2012 EIP through 2014. No other types of awards have been granted.

| 2012 Equity Incentive Plan Grants | | |
|---|---|---|
| Name and Title or Group | Number of RSUs Granted through 2014 | Number of Stock Options Granted through 2014 |
| Mary G. Puma , <i>Chairman, Chief Executive Officer and President</i> | 147,637 | 800,000 |
| Kevin J. Brewer , <i>Executive Vice President and Chief Financial Officer</i> | 0 | 600,000 |
| William Bintz , <i>Executive Vice President, Engineering and Marketing</i> | 37,795 | 650,000 |
| John E. Aldeborgh , <i>Executive Vice President, Global Customer Operations</i> | 0 | 750,000 |
| Lynnette C. Fallon , <i>Executive Vice President, HR/Legal and General Counsel</i> | 0 | 375,000 |
| All Current Executive Officers as a Group (1) | 185,432 | 3,300,000 |
| All Current Non-Employee Directors as a Group | 90,000 | 880,000 |
| Each Nominee for the Board not a Current Director | 0 | 0 |
| All Current Employees, excluding Executive Officers, as a Group | 10,000 | 9,113,200 |

(1) All current executive officers includes one executive officer who is not a Named Executive Officer

The closing price of our common stock on December 31, 2014, as reported by The Nasdaq Global Select Market, was \$2.56.

Current Equity Compensation Plan Information

We maintain three equity compensation plans, the 2000 Stock Plan (which was terminated as to new grants on May 1, 2012), the 2012 EIP and the Employee Stock Purchase Plan. The number of shares issuable upon exercise of outstanding options and unvested RSUs granted to employees and non-employee directors, as well as the number of shares remaining available for future issuance, under our equity compensation plans as of December 31, 2014 are summarized in the following table:

| Plan category | Number of shares to be issued upon exercise of outstanding options, warrants and rights (1) | Weighted-average exercise price of outstanding options, warrants and rights (2) | Number of shares remaining available for future issuance under equity compensation plans (excluding shares reflected in column (A)) (3) |
|---|---|---|---|
| Equity compensation plans approved by stockholders | 21,806,910 | \$ 1.61 | 4,387,910 |
| Equity compensation plans not approved by stockholders | 0 | - | 0 |
| Total | 21,806,910 | \$ 1.61 | 4,387,910 |

- (1) Represents, as of December 31, 2014: (A) 10,291,489 shares issuable on exercise of outstanding options under the 2000 Stock Plan, plus (B) 11,412,625 shares issuable on exercise of outstanding options under the 2012 EIP, plus (C) 5,296 shares issuable on vesting of outstanding RSUs under the 2000 Stock Plan (some of which will be withheld in respect of tax withholding obligations) plus (D) 97,500 shares issuable on vesting of outstanding RSUs under the 2012 EIP (some of which will be sold in respect of tax withholding obligations).
- (2) For the purposes of this table, the weighted-average exercise price of outstanding options, warrants and rights includes RSUs as if they had a \$0 exercise price. The weighted-average exercise price of outstanding options alone at December 31, 2014 was \$1.62.
- (3) Represents the total shares available for issuance under our 2012 EIP and our Employee Stock Purchase Plan, as of December 31, 2014, as follows:
 - (A) 2,753,840 shares were available for future issuance under the 2012 EIP. Such amount represents the total number of shares reserved for issuance under the 2012 EIP (8,550,000 plus shares subject to options or restricted stock units granted under the 2000 Stock Plan that expired unexercised or were forfeited between May 2, 2012 and December 31, 2014), less the shares issuable on 11,412,625 options and 97,500 restricted stock units (counted at 1.5 shares each) outstanding under the 2012 EIP included in column (A) and the shares issued on exercise of options and vesting of restricted stock units granted under the 2012 Equity Incentive Plan. This plan is generally used for grants to employees and directors and was approved by our stockholders at our 2012 annual meeting. No shares are available for future issuance under the 2000 Stock Plan, which terminated on May 1, 2012.
 - (B) 1,634,070 shares were available under our Employee Stock Purchase Plan, which represents the total number of shares reserved for issuance under the plan (7,500,000) less 5,865,930 shares issued through December 31, 2014.

PROPOSAL 4: ADVISORY VOTE REGARDING EXECUTIVE COMPENSATION

This proposal, commonly known as "Say-on-Pay," asks the stockholders to approve the compensation of the Company's named executive officers as described under "Executive Compensation" below in this proxy statement (referred to herein as "NEOs").

The Company's overall compensation goal is to drive shareholder value by (i) retaining executive talent by offering base pay that is commensurate with pay at other companies of a similar size in the same or similar industries, as adjusted for individual factors, and (ii) driving achievement of long-term and annual strategic goals with pay tied to performance. Details of the 2014 compensation provided to the NEOs may be found in the "*Executive Compensation—2014 Compensation Discussion and Analysis*" and the accompanying tables in this proxy statement. Key factors impacting NEO compensation in 2014 were:

- **Balanced Mix of Base and Short- and Long-Term Incentive Pay with a Strong Emphasis on Performance-Based Awards.** In 2014, the NEOs received target base, annual incentive and equity grant compensation that aligned well with elements of peer executive compensation targets. In 2014, the at-risk compensation equaled 63% of the 2014 total target compensation of the Company's chief executive officer (Mary G. Puma) and 58% (on average) of the other NEOs' 2014 total target compensation.
- **Realized/Realizable Pay Substantially Below Target.** In 2014, the NEOs realized base and annual incentive pay below target pay. In connection with 2014 cost control initiatives impacting employee pay generally, Ms. Puma incurred two weeks of unpaid shutdowns and agreed to reduce her base pay by 20% beginning in September 2014. These actions effectively reduced Ms. Puma's 2014 base pay by 10%. The other NEOs each incurred three weeks of unpaid shutdowns, which effectively reduced 2014 NEO base pay by 6%. The inherent value of the 2014 equity grants to the NEOs remains below the target Black Scholes value using the 2014 year end price of \$2.56. No payout was made under the 2014 Axcelis Management Incentive Plan, since a profitability threshold was not met. Accordingly, Ms. Puma received 2014 compensation equal to 49.7% of her total target compensation and the other NEOs (on average) received 2014 compensation equal to 58.6% of their total target compensation.

Institutional Shareholder Services, Inc., the proxy advisory firm ("ISS"), performs a Pay for Performance analysis which for the fiscal year ended December 31, 2014 rates Axcelis' executive compensation practices a "low concern" in three different tests: (i) the relative degree of alignment between the Company's total shareholder return rank and total pay rank among ISS's selected peer group, (ii) the Company's position relative to the median of the peer group and (iii) the alignment of CEO pay to indexed total shareholder return. In addition, ISS rated Axcelis' three year relative performance rank higher than 13 of 18 peers and our three year relative pay rank lower than all but one of 18 peers. All of these matters are discussed in greater detail in "*Executive Compensation—2014 Compensation Discussion and Analysis*" below. See also "*Shareholder Engagement—Shareholder Outreach—Advisor and Consultant Engagements*" above.

The vote solicited by this proposal, which is required by Section 14A of the Securities Exchange Act of 1934, is advisory and its outcome will not be binding on the Board nor require

the Board to take any action. Moreover, the outcome of the vote will not be construed as overruling any decision of the Board or creating or implying any additional fiduciary duty of the Board. However, the Board intends to take into account the outcome of this vote when considering future compensation arrangements for the Company's named executive officers. We will hold such a vote at the annual meeting each year.

The proposal will be considered approved at the annual meeting if more votes are cast in favor than against. Abstentions and broker non-votes will not count as votes cast for or against this proposal.

The Board of Directors recommends a vote FOR approval of the compensation of the Company's named executive officers.

EXECUTIVE COMPENSATION

2014 Compensation Discussion and Analysis

This 2014 Compensation Discussion and Analysis is intended to provide a context for the disclosures contained in this proxy statement with respect to the compensation paid to the Company's principal executive officer (Mary G. Puma), principal financial officer (Kevin J. Brewer), and the three most highly compensated other executive officers serving as executive officers at December 31, 2014 included in the *Summary Compensation Table* below. These executive officers are referred to herein as "named executive officers" or "NEOs." Specifically, this Compensation Discussion and Analysis will explain the objectives and material elements of the compensation of the NEOs during 2014.

Executive Summary of Axcelis 2014 Executive Compensation

2014 Business Environment.

2014 was a challenging year for the Company, but one in which important progress was made. We entered a market pause in the second quarter of 2014, in which customers delayed purchasing decisions. In response, we took further aggressive actions to reduce and align manufacturing and operating expense levels to business conditions and to maintain sufficient liquidity to support operations. 2014 was also a critical turning point for the Company with the introduction of the Purion H system to address the high current ion implantation market, which represents approximately 60% of the total ion implantation market. The introduction of this final member of the Purion Platform family means Axcelis now has access to 100% of the nearly one billion dollar ion implant market. Customer acceptance of the Purion H has been more rapid than expected, with multiple Purion H purchase orders received in the fourth quarter of 2014, less than six months after the installation of the first two Purion H systems on evaluation terms.

2014 Say-on-Pay Vote

At our 2014 annual meeting, approximately 80% of votes cast were in favor of our advisory vote on executive compensation (commonly referred to as "Say-on-Pay"). This was a significant drop from the shareholder support expressed in the prior three years, which were all over 90% in favor. While these results continue to show that a majority of our shareholders support our executive compensation policies, the 2014 result was well below what we consider satisfactory.

In response to the 2014 Say-on-Pay voting results, we engaged in some special shareholder outreach to seek to understand the concerns and objections that may have led some of our shareholders to vote against our 2014 executive compensation, as well as to receive general feedback. We also engaged with ISS and Glass Lewis outreach to discuss our compensation programs. Our Compensation Committee engaged FW Cook, an independent compensation consultant, to develop a revised peer group and to assess the alignment of our 2014 compensation programs against this revised peer group and our performance. In a report provided to the Compensation Committee in November 2014, FW Cook observed that the amount of 2014 target compensation provided to the Axcelis executive officers was within market

practice. In addition, FW Cook stated that realized Axcelis executive compensation in 2013 and 2014 reflects the Company's performance-based compensation programs tied to financial performance improvement and stock price appreciation. We also engaged a consulting firm to assist us in analyzing our executive compensation in the context of proxy advisory firm standards before the 2015 proxy season. We used this advice to improve our ISS Compensation QuickScore to a 1 (the highest rating on a 1 to 10 scale) in November 2014, by adopting and modifying policies relating to executive compensation, as described above in "Corporate Governance—Governance Policies."

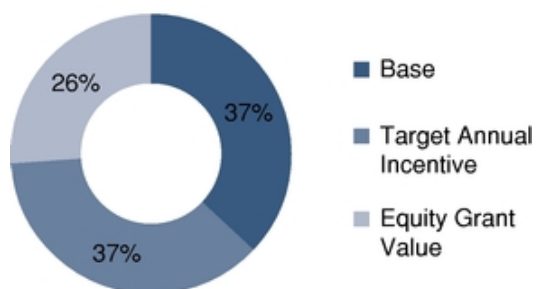
This process led us to conclude that the low 2014 voting results in the Say-on-Pay vote were largely an expression of our investors' disappointment with our financial performance and stock price. In general, executive compensation did not appear to be a topic of concern to shareholders. Both Glass Lewis and ISS had recommended in favor of our 2014 Say-on-Pay vote, and the FW Cook and ISS analyses of our 2014 compensation suggest that our executive pay is well aligned with peers and with our performance.

See also "Stockholder Engagement—Shareholder Outreach—Advisor and Consultant Engagements" above.

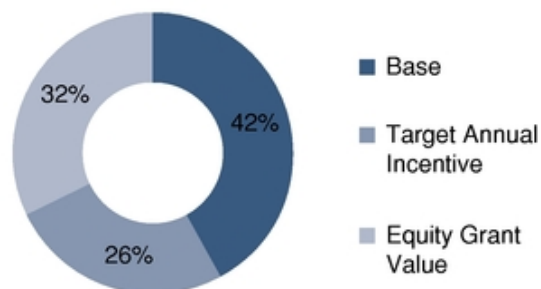
Key Features of 2014 Executive Compensation

- Balanced Mix of Base and Short- and Long-Term Incentive Pay with a Strong Emphasis on At-Risk Compensation.** In 2014, the named executive officers received target base, annual incentive and equity grant compensation that aligned well with the 50th percentile of our peer companies' executive compensation targets, although the equity grant values, using Black Scholes, are somewhat lower than our peers due to the low Axcelis stock price. In 2014, the Ms. Puma's total at-risk compensation (her annual incentive target and Black Scholes equity grant value) equaled 63% of her total compensation. For the other NEOs, at-risk compensation equaled 58% (on average) of the other NEOs' total compensation. These percentages are shown in the charts below:

CEO Target 2014 Pay Mix



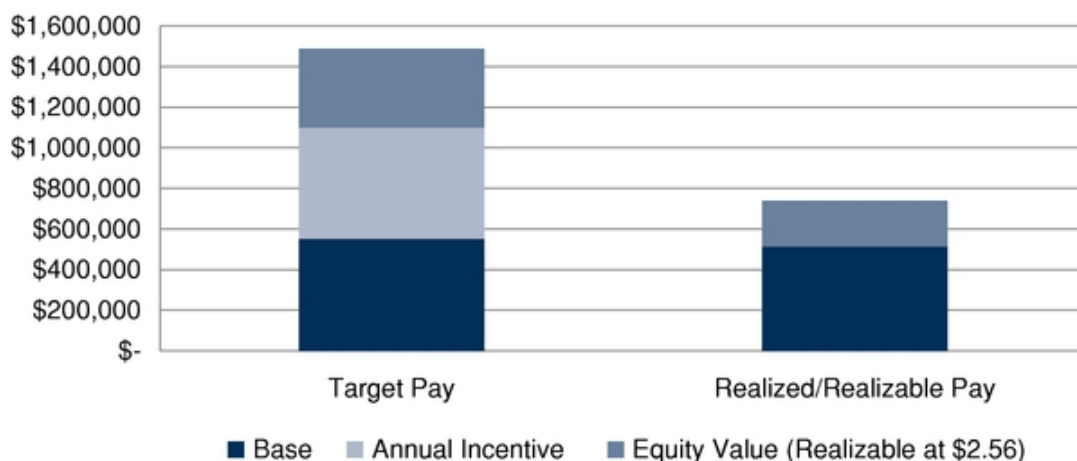
Average Other NEO Target 2014 Pay Mix



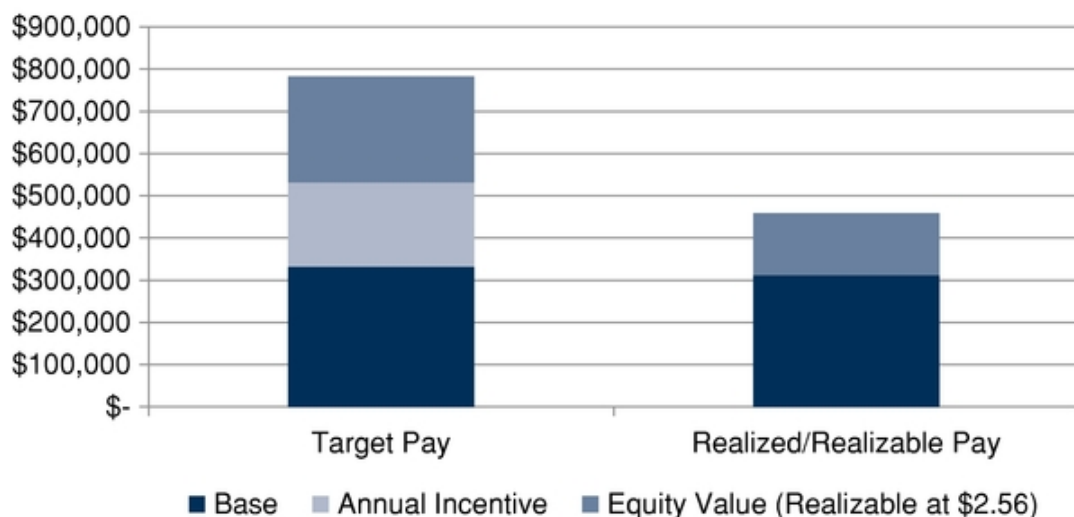
- Realized/Realizable Pay Substantially Below Target.** In 2014, the named executive officers realized base and annual incentive pay below target pay. In addition, the inherent value of the 2014 equity grant remains below the target Black Scholes value,

using the 2014 year end price of \$2.56. Accordingly, Ms. Puma received 2014 compensation equal to 49.7% of her total target compensation and the other NEOs (on average) received 2014 compensation equal to 58.6% of their total target compensation. These amounts are shown in the charts below:

2014 CEO Realized/Realizable Pay vs. Target



2014 Average Other NEO Realized/Realizable Pay vs. Target



Compensation Philosophy and Governance Practices

The Company's overall compensation goal is to drive shareholder value by implementing an executive compensation program designed to:

- (1) motivate and retain executive talent by offering total target compensation with a proportion of at-risk compensation that is commensurate with the 50th percentile of total target and at-risk compensation at other companies of a similar size in the same or similar industries, as adjusted for individual factors; and

(2) drive achievement of annual and long-term strategic objectives by rewarding executives through incentive pay tied to approved financial and operational goals and equity grants that deliver value with stock price appreciation, aligning pay with performance.

The Company also seeks to support our compensation philosophy with strong governance practices, which include:

- An annual Say-on-Pay vote and related shareholder outreach;
- Annual benchmarking of executive compensation against a peer group;
- An equity award plan that seeks to align to best practices (including with respect to cost and voting power dilution, fungible share counting for whole share awards and prohibitions on repricing and cash repurchases);
- Equity grant practices that seek to align with industry burn rates;
- Executive stock ownership guidelines;
- Double trigger on change of control benefits for executives, and the elimination of excise tax indemnification and gross ups in future change of control agreements;
- An executive compensation clawback policy that empowers the Board to recover incentive compensation under terms set forth in the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010;
- No excessive perquisites or guaranteed bonuses.

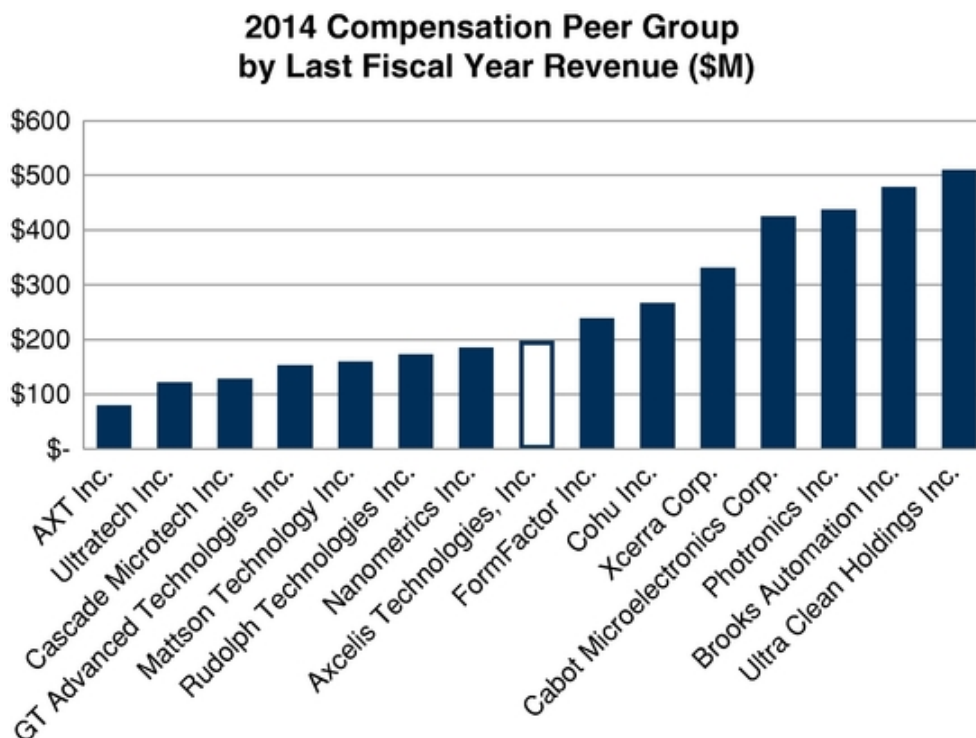
Review of Executive Compensation in 2014

All executive compensation is determined by the Compensation Committee of the Board of Directors. For a discussion of the Committee's processes in general, see "*Corporate Governance—Compensation Committee*" in this proxy statement. Executive compensation for incumbent executives is reviewed annually.

February 2014 Internal Review. The Company's 2014 Executive Compensation was first reviewed by the Compensation Committee in February 2014. In this review, the Compensation Committee reviewed the NEOs' cash compensation in comparison to (A) benchmarking data prepared for the Company in 2011 by Pearl Meyer & Partners, a compensation consultant, using a peer group and broader survey data, as detailed in our 2012 proxy statement and (B) compensation survey data from the 2013 Radford Global Technology Survey (the most recent available at the time), using US companies with revenues from \$200M to \$499.9M. While the low end of this revenue range aligns to the Company's revenues in 2014, 2013 and 2012, we compete for talent against companies with higher revenues. As a result of this review, the Compensation Committee approved small increases in the base pay for Messrs. Brewer, Aldeborgh and Bintz, as described under "*—Base Salary*" below. No changes were made to the NEOs' target annual incentive since the 2013 levels of 100% of base pay for the Chief Executive Officer and 60% of base pay for the other NEOs were aligned with the 50th percentile of the benchmark and survey data.

November 2014 Compensation Consultant Review. In response to the decrease in shareholder support of our Say-on-Pay proposal at the 2014 annual meeting (80% in favor, down from 92.6% in favor in 2013), the Compensation Committee engaged an outside compensation consultant, Frederick W. Cook & Co., Inc. ("FW Cook") to provide a report on both cash and equity compensation for each of the executive officer positions at Axcelis in comparison to market data. The Committee assessed FW Cook's independence in light of the U.S. SEC and Nasdaq listing standards and determined that no conflict of interest or independence concerns exist.

FW Cook, working with management, developed an updated peer group of companies that were used for comparison purposes (the "2014 Peer Group"). The peer companies were selected based on their participation in the semiconductor equipment industry, with revenues ranging from 33% to 300% of Axcelis' 2013 revenue, and similarities in sales growth, total shareholder return, and number of employees. The chart below names the selected 14 peers and Axcelis ranked by revenue for the most recently completed fiscal year as of November 2014:



Axcelis is at the median of the 2014 Peer Group in terms of revenue, which is desirable given that revenue is highly correlated with compensation. Compensation information from these 2014 Peer Group companies was obtained from proxy statements and other filings available prior to November 2014. FW Cook also used data from a proprietary Global Technology Survey using a revenue cut from \$200 to \$499 million. As noted above, while the low end of this revenue range aligns to the Company's revenues in 2014, 2013 and 2012, we compete for talent against companies with higher revenues, and believe our revenues may increase in the coming years.

In their report to the Compensation Committee, FW Cook concluded that the amount and mix of 2014 target compensation elements (i.e., base salary, annual incentive, and long-term incentive) reflects typical market practice among the 2014 Peer Group. FW Cook also reviewed the structure of the Company's annual incentive plan, the 2014 Axcelis Management Incentive Plan, discussed below. FW Cook reported that the plan design and metrics of the Axcelis annual incentive plans were within market practice in the 2014 Peer Group, although the use of a single financial metric (profitability) to determine payout varies from a majority of the 2014 Peer Group companies, which generally use two to three metrics to determine performance and payouts. Our 2014 Axcelis Management Incentive Plan used a simple profitability metric in order to focus

participants on the criticality of regaining robust profitability and to ensure sufficient liquidity to make the cash payout under the plan.

FW Cook also advised that the Black Scholes grant date values of Axcelis long term incentive compensation were below market among the 2014 Peer Group. FW Cook noted that Axcelis' low stock price made it difficult for the Company to provide significant Black Scholes grant date value compared to the benchmark data while also keeping the equity awards at an appropriate size in light of burn rate and the percent of shares outstanding used in the awards.

No changes to NEO compensation were made as a result of the FW Cook Executive Compensation report.

Material Elements of Named Executive Officer Compensation

The table below lists the key elements of NEO compensation and why Axcelis has chosen to pay each compensation element, how Axcelis determines the amount of each element:

| Compensation Element | Principal Rationale for Inclusion | How Amount is Determined |
|-----------------------|---|--|
| Base salaries | To attract and retain qualified executives in a competitive industry | We seek to provide each element of compensation at a level that is at or near the 50th percentile of the market data for each form of compensation for the benchmarked position. |
| Annual Cash Incentive | To drive achievement of annual strategic objectives through at-risk pay tied to financial and operational goals, resulting in appropriate pay-for-performance. | |
| Equity Awards | To drive achievement of long-term shareholder value through equity grants that deliver value with stock price appreciation, resulting in appropriate pay-for-performance. | |

The following discussion explains how, in 2014, each compensation element and the Company's decisions regarding that element, fit into the Company's overall compensation objectives and affect decisions regarding other elements.

Base Salary. The Company pays a base salary to each of its NEOs. Base pay for NEOs is set on commencement of employment with the Company and reviewed by the Compensation Committee annually thereafter to adjust as needed to align with market benchmarking. In the event that base pay is a factor in calculating annual incentive cash compensation or equity grants, when fixing or adjusting base pay, the Compensation Committee will consider the impact of a change on these other compensation components.

CEO Base Pay in 2014. After temporary pay reductions in 2013, Ms. Puma's base pay returned to \$550,000 at the beginning of 2014. However, as part of the cost control initiatives implemented in 2014 in respect of employees of the Company generally, Ms. Puma participated in two weeks of unpaid time in each of June and August 2014, and then voluntarily reduced her pay by 20% for the final 18 weeks of 2014. The

aggregate effect of these pay reductions was to reduce Ms. Puma's pay by 10% (\$55,000) from the \$550,000 approved by the Compensation Committee.

2014 Base Pay for the Other NEOs. As noted above, based on its review of compensation and benchmark data, the Compensation Committee approved annual base salary increases of 6%, 3%, and 10% for Mr. Brewer, Mr. Bintz and Mr. Aldeborgh, respectively, in February 2014. The base increase approved for Mr. Brewer reflected alignment of his pay to market data for the Chief Financial Officer role, the first time that had been done since he accepted that role in 2013. Mr. Brewer was also paid a \$25,000 lump-sum amount in January 2014 in consideration of his service as interim Chief Financial Officer beginning in mid-2013. This was a fixed payment the Company had agreed to make after the end of 2013.

Actual 2014 base salary paid to the other NEOs was lower than the base salaries last approved by the Compensation Committee for each of these NEOs because these NEOs participated in three weeks of unpaid time in 2014 (consistent with employees of the Company generally), reducing annual base salary by 6% on an annualized basis for each of these NEOs.

Annual Cash Incentive—2014 Axcelis Management Incentive Plan

In February 2014, the Compensation Committee adopted the Company's annual incentive plan, the 2014 Axcelis Management Incentive Plan (the "2014 AMI"). Approximately 130 management-level employees participated in the 2014 AMI, each of whom was assigned a target payout, expressed as a percent of base pay. As designed by the Compensation Committee, payout under the 2014 AMI would have been funded to the extent that the Company's 2014 net income exceeded \$10 million, in which case, 35% of the excess net income over \$10 million would have been applied to a payout under the 2014 AMI. The funding would have been capped at \$10M (200% of the total 2014 AMI targets). The 2014 AMI authorized the Compensation Committee to adjust the funding for extraordinary items and other qualitative aspects of the Company's 2014 performance (using benchmarks and budgets) to ensure that the score reflects actual performance and not extraordinary events and is otherwise appropriate. Each participant's expected payout would be a percentage of his or her target payout equal to the total 2014 AMI approved funding divided by the total of all participant target payouts. Actual payouts would equal the expected payout multiplied by an individual performance score that could range from 0% to 150%, provided such individual adjustments could not increase the aggregate payout amount for all participants.

None of the NEOs had a cash payout target under the 2014 AMI. In order to conserve cash and drive shareholder alignment, in lieu of a cash target the Compensation Committee established a share pool for RSU grants to NEOs and seven other participants that would be issued if a cash payout was made under the 2014 AMI to the other participants. Each of the NEOs had a target number of RSUs equal to the dollar value of his or her 2014 AMI target divided by the February 18, 2014 closing price. The Committee set the 2014 AMI target for Ms. Puma at 100% of her base pay, and for each of the other NEOs at 60% of their respective 2014 base pay. These amounts were aligned with the 50th percentile of benchmark and survey compensation data reviewed by the Committee in February 2014. The Committee adopted a

resolution that in the event of a change of control of the Company prior to the determination of funding under the 2014 AMI, the target RSUs would be issued to the NEOs. If RSU grants were to be made, the Compensation Committee would determine individual performance scores for each NEO and grant RSUs based on the individual's target as adjusted for his or her individual performance score, within the total share pool.

The Company did not have \$10 million in 2014 net income and in February 2015 the Compensation Committee determined that no cash payout would be made under the 2014 AMI. Accordingly, no grant of RSUs was made to the NEOs under this plan.

Long-Term Equity Incentive Compensation

Equity Compensation Philosophy. Equity compensation for NEOs, which at the Company has taken the form of stock options and RSUs, is designed to align the interests of executives with those of our stockholders and to retain executives through the use of multi-year vesting periods. Equity grants are also intended to align pay with performance, in that the value ultimately realized through equity grants is directly linked to stock price appreciation and stockholder value accretion. Option grants have no value without stock price appreciation, and RSUs have value at grant that can increase with stock price appreciation. Thus, equity grants should constructively influence management's motivation to enhance the value of the Company's stock.

Long-term ownership of equity awards is further encouraged through the Company's executive stock ownership guidelines, which establish a minimum number of shares that the executive must own and align executive officers and long-term stockholder interests. As noted above under "*Corporate Governance—Governance Policies*", these guidelines were amended during 2014. Ms. Puma is required to own shares having a value equal to three times her base pay. The other NEOs are required to own shares having a value equal to 1.5 times base pay or, if less, 65,000 shares. Until an NEO meets the requisite stock ownership level prescribed by the stock ownership guidelines, each NEO is subject to a holding requirement on shares received through the exercise of stock options or in connection with the vesting of RSUs. These guidelines are intended to ensure that the executives' interests in the value of the Company's stock include interests in stock as well as equity-based incentive awards, and as such are more fully aligned with the interests of Company stockholders generally. NEOs are also subject to the Company's Policies and Practices Relating to Axcelis Securities, which are discussed above under "*Corporate Governance—Policies regarding Ownership and Transactions in Axcelis Securities by Directors and Officers.*"

Equity Compensation Processes. Equity grants to executives are made upon hire and, typically, thereafter on an annual basis. Annual equity grants to executive officers have been made in most years in order to ensure a meaningful retentive effect by maintaining the percentage of the executive's equity position that is unvested and to continue to award compensation that is directly tied to Company performance. The Compensation Committee determines the form of equity grants made to the NEOs. The 2012 Equity Incentive Plan allows the Compensation Committee to award several different forms of equity rights, including restricted stock, RSUs, incentive stock options and non-qualified stock options. Past equity grants to NEOs have taken the form of non-qualified stock options and RSUs.

We use stock options because our low share price allows for significant return on growth in our stock price. Stock options also provide a significant incentive because the optionholder receives no or minimal reward if the stock price does not improve over the level on the date of grant. We use RSUs in lieu of cash incentives to conserve cash as well as in other appropriate circumstances. RSUs allow us to issue fewer shares than stock options to deliver comparable value, which reduces overhang and potential stockholder dilution. RSUs also have a significant retention effect because their ultimate value depends on the future stock price performance of the company, providing motivation through variable "at risk" compensation and direct alignment with stockholders.

It is the Committee's general practice to approve equity awards with a future effective date, usually on the 15th of the month following the approval. Annual equity grants are usually approved in May or June with a grant date of July 15th (or the next succeeding trading day). The Company believes that this time period between the approval and effectiveness of an equity grant means that the Committee is unable to know or estimate the trading price of the Company's common stock on the effective date of grant. As a result, the Committee has not, to date, thought it necessary to adopt a policy of timing the approval or effectiveness of equity awards to specific dates following the release of financial results or other material information.

2014 Annual Equity Grants. In 2014, the Compensation Committee determined that stock options were the most compelling form of equity compensation for the annual program. RSUs have an intrinsic value regardless of stock price appreciation, and options deliver value only if the stock price increases over the grant date price. Given the criticality of achieving revenue and profitability growth, the Committee felt that options were a more appropriate vehicle, since the stock price should reflect management's achievements, and better accomplish pay-for-performance. Prior to granting new options, the Committee reviewed the value of each executive's equity portfolio. The Black Scholes value of each of the proposed 2014 option grants to the NEOs were assessed in comparison to Radford market data. At the time of the approval of the grants, the Company's stock price was approximately \$2.00, so the following Black Scholes values were developed on that price assumption and were reviewed by the Committee in comparison to the market data as shown below (the actual exercise price on these options was \$1.80, lowering the actual Black Scholes value):

| | Proposed 2014 Option Grants (shares) | | Black Scholes value of proposed 2014 grant, assuming \$2.00 price | | Radford Black Scholes Market Data (1) |
|------------------|---|----|--|----|--|
| Puma | 300,000 | \$ | 471,000 | \$ | 1,772,457 |
| Brewer | 225,000 | \$ | 353,250 | \$ | 443,563 |
| Aldeborgh | 200,000 | \$ | 314,000 | \$ | 369,972 |
| Bintz | 200,000 | \$ | 314,000 | \$ | 305,811 |
| Fallon | 150,000 | \$ | 235,500 | \$ | 351,213 |

- (1) Radford market data is based on the average of the values for each of the executive's roles in three data cuts: (1) All High Tech, (2) High Tech Hardware < \$1B revenues (includes capital equipment), and (3) All High Tech \$200-499M revenues.

The 2014 stock option grants to NEOs approved in May 2014 and granted in July 2014 are set forth in the *Grants of Plan Based Awards in Fiscal 2014* table below. These options have an exercise price of \$1.80 and will vest as to 25% of the granted shares on each of the first four anniversaries of the date of grant, assuming continuation of employment.

Employment and Change of Control Agreements

The Company has had an Employment Agreement with Ms. Puma since November 2007 that provides for a one-year term of employment at a minimum annual base salary of \$500,000 and an annual target incentive compensation opportunity of 100% of base salary and severance upon a qualifying termination of employment. See "*Payments on Termination or Change of Control—Employment Agreement with Ms. Puma*" below. No action was taken by the Compensation Committee in 2014 relating to this Employment Agreement.

Each of the NEOs has a double-trigger Change of Control Agreement with the Company, described below under "*Payments on Termination or Change of Control.*" No action was taken by the Compensation Committee in 2014 relating to these Change of Control Agreements.

As noted above under "*Corporate Governance—Governance Policies,*" consistent with our commitment to strong corporate governance and responsiveness to our stockholders, in 2014 the Board of Directors adopted a new governance policy against tax gross-up arrangements, which provides that no future change of control agreement with any future executive officer of the Company, shall include a gross-up in respect of any excise or other tax due in respect of severance compensation, including pursuant to Sections 280G and 4999 of the Internal Revenue Code.

Other Compensation Components

In order to encourage our executives to more completely focus their efforts on performing their duties while still allowing them to obtain adequate financial and tax planning assistance, Axcelis reimburses up to \$5,500 of an executive's annual tax and financial planning expenses. This program is the only executive perquisite at Axcelis and amounts paid to NEOs under this program are included in the "All other compensation" column in the Summary Compensation Table. Mr. Brewer was the only NEO to participate in this program in 2014 and the prior two years.

Executives may elect to make contributions to a retirement account in the Company's IRC Section 401(k) plan, on the same basis as Company employees generally. The Company has not made 401(k) plan matching contributions to participants' accounts since 2008. In 2014, the Board approved a dollar-for-dollar match, up to \$1,000, for 2015 employee contributions. The Company does not maintain a defined benefit pension plan nor does it maintain any non-qualified deferred compensation plans.

NEOs may also participate in the Company's medical and dental insurance offerings on the same basis as Company employees generally by electing to make payroll deductions designed to cover approximately 25% of the cost of those programs (the Company covers the other 75% of the cost). The Company provides life, accidental death and dismemberment and disability insurance for all employees, and the opportunity to increase coverage levels via payroll deductions.

Finally, the Company maintains the Employee Stock Purchase Plan, a voluntary IRC Section 423 plan in which employees may purchase Axcelis shares through salary deductions.

Executive Compensation Clawback Policy

In 2014, the Board of Directors adopted an Executive Compensation Clawback Policy which authorizes the Board to seek recovery of incentive cash and equity compensation as contemplated by Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. In addition, the Company's policy authorizes a clawback of incentive compensation in the event of any violation of an agreement with the Company or of any policy of the Company (which would include violations of the Company's Business Ethics policy or any applicable law) and also in the event of a voluntary departure to work for a competitor.

Risk Assessment of Compensation Policies and Practices

In 2014, the Company determined, in its reasonable business judgment, that its compensation policies and practices for its employees, including the NEOs, do not give rise to risks that are reasonably likely to have a material adverse effect on the Company. In reaching this determination, management engaged in (i) a review of the Company's compensation programs, policies and practices, (ii) identification of risks, if any, related to the programs, policies and practices, (iii) consideration of the materiality of a potentially risk-related reward to the total compensation provided to the individual, and (iv) identification of those aspects of the program and its oversight that provide risk control. Although all compensation programs were considered, management's review focused on the programs with variability of payout and in which there is a potential for the participant to directly affect payout.

Based on this review, management determined that the compensation policies and practices for Axcelis' employees do not create risks that are reasonably likely to have a material adverse effect on the Company, principally because:

- (1) The structure of our executive compensation program includes a balanced mix of cash and equity compensation; and
- (2) Our incentive compensation programs are subject to appropriate risk controls in their design and oversight:
 - The Company's internal controls and risk management practices restrict risk-taking that is not consistent with risks inherent in the Company's strategic plan, as approved by the Board;
 - Payment of small bonuses for extraordinary effort or for achieving individual or team goals are subject to approval by direct managers, and representatives of human resources and finance departments, and, for higher amounts, a representative of senior management;
 - Payment of sales commission plans are subject to calculation and approval by the finance department and are tied to actual receipt of payments from the customer; and
 - Payouts under the Company's annual cash incentive plans are in the discretion of the Compensation Committee, which considers both qualitative and quantitative assessments of performance.

Tax Implications

Section 162(m) of the Internal Revenue Code, generally disallows a federal tax deduction to public companies for compensation in any tax year to specified executive officers to the extent that the compensation to such executive officer exceeds \$1 million, subject to exceptions for compensation that is "qualified performance-based compensation" under Section 162(m) of the Internal Revenue Code.

Certain of our compensation and benefit plans are designed to permit us to grant awards that may qualify as "qualified performance-based compensation;" however, it is possible that awards intended to qualify for the tax deduction may not so qualify if all requirements of the "qualified performance-based compensation" exemption are not met.

Furthermore, although the Compensation Committee may take action intended to limit the impact of Section 162(m) of the Internal Revenue Code, the Compensation Committee also believes that the tax deduction is only one of several relevant considerations in setting compensation, and that the tax deduction limitation should not be permitted to compromise the Compensation Committee's ability to structure its compensation to provide benefits to the Company that outweigh the potential benefit of the tax deduction. While the Company has not been limited in its tax deductions in respect of compensation by reason of Section 162(m) of the Internal Revenue Code in the last decade, achieving the desired flexibility in the design and delivery of compensation may result in compensation that in certain cases is not deductible for federal income tax purposes in the future.

2014 Compensation Committee Report

The Compensation Committee has reviewed and discussed the foregoing Compensation Discussion and Analysis with management and, based on this review and discussion, the Compensation Committee recommended to the Board of Directors that the Compensation Discussion and Analysis be included in this proxy statement.

By the Compensation Committee,

H. Brian Thompson, Chairman
R. John Fletcher
Stephen R. Hardis
Arthur L. George, Jr.

2014 Summary Compensation Table

| Name and Principal Position | Year | Salary (\$)(1) | Bonus (\$) | Stock awards (\$)(5) | Option awards (\$)(5) | All other compensation (\$)(6) | Total (\$) |
|--|---------|----------------|------------|----------------------|-----------------------|--------------------------------|------------|
| Mary G. Puma, Chairman, Chief Executive Officer and President | 2014(2) | \$492,885 | \$ - | \$ - | \$ 288,984 | \$ - | \$ 781,868 |
| | 2013(3) | \$400,481 | \$ - | \$ 187,499 | \$ 359,716 | \$ - | \$ 947,696 |
| | 2012(4) | \$471,530 | \$ - | \$ - | \$ 182,518 | \$ - | \$ 654,048 |
| Kevin J. Brewer, Executive Vice President and Chief Financial Officer | 2014(2) | \$326,731 | \$ 25,000 | \$ - | \$ 216,738 | \$ 841 | \$ 569,310 |
| | 2013(3) | \$310,962 | \$ - | \$ - | \$ 323,744 | \$ 549 | \$ 635,255 |
| | 2012(4) | \$310,962 | \$ - | \$ 198,000 | \$ 109,511 | \$ 900 | \$ 619,373 |
| William Bintz, Executive Vice President, Engineering and Marketing | 2014(2) | \$309,423 | \$ - | \$ - | \$ 192,656 | \$ - | \$ 502,079 |
| | 2013(3) | \$271,385 | \$ - | \$ 48,000 | \$ 431,659 | \$ - | \$ 751,043 |
| | 2012(4) | \$301,538 | \$ - | \$ 191,999 | \$ 109,511 | \$ - | \$ 603,048 |
| John E. Aldeborgh, Executive Vice President, Global Customer Operations(7) | 2014(2) | \$306,346 | \$ - | \$ - | \$ 192,656 | \$ - | \$ 499,002 |
| | 2013(3) | \$271,154 | \$ - | \$ - | \$ 703,166 | \$ - | \$ 974,320 |
| Lynnette C. Fallon, Executive Vice President, HR/Legal and General Counsel | 2014(2) | \$301,538 | \$ - | \$ - | \$ 144,492 | \$ - | \$ 446,030 |
| | 2013(3) | \$301,538 | \$ - | \$ - | \$ 107,915 | \$ - | \$ 409,453 |
| | 2012(4) | \$301,538 | \$ - | \$ 191,999 | \$ 109,511 | \$ - | \$ 603,048 |

- (1) Base salary is set by the Compensation Committee, based on market benchmarking. Other than Ms. Puma, the named executive officers (NEOs) do not have employment agreements. Ms. Puma's employment agreement is described under the heading "Payments on Termination or Change in Control" in this proxy statement.
- (2) The 2014 base compensation for each of the NEOs reflects their participation in unpaid weeks, and in Ms. Puma's case, also an 18 week pay reduction. Mr. Brewer was paid a \$25,000 lump-sum amount in January 2014 in consideration of his service as interim Chief Financial Officer beginning in mid-2013. This was a fixed payment the Company had agreed to make after the end of 2013.
- (3) The 2013 base compensation for each of the NEOs reflects their participation in three weeks of unpaid shutdowns in 2013. In addition, the 2013 base pay for each of Ms. Puma and Mr. Bintz was reduced at the election of the executive in return for an RSU grant under the "2013 Base Pay RSU Program" described in the "2013 Compensation Discussion and Analysis" included in the proxy statement for our 2014 Annual Meeting of Stockholders. The 2013 stock award amounts reported for Ms. Puma and Mr. Bintz relate to RSUs granted in the 2013 Base Pay RSU Program.
- (4) The 2012 base compensation for each of the NEOs reflects their participation in three weeks of unpaid shutdowns in 2012. The 2012 stock award amounts reported for Mr. Brewer, Mr. Bintz, and Ms. Fallon relate to RSU awards granted in 2012 and forfeited in February 2013 in accordance with the terms of the 2012 Axcelis Management Incentive Plan. Accordingly, no value was received by the executive in connection with these RSU grants.
- (5) Represents the grant date fair value of the stock and option awards received by the NEO in the year indicated, determined in accordance with FASB ASC Topic 718, using the assumptions described in the

Stock Award Plans and Stock-Based Compensation Note to the Company's Financial Statements included in the Form 10-K filed with the Securities and Exchange Commission for the respective year.

- (6) In the case of Mr. Brewer, the amounts in this column represent the value of a service award paid in 2014 and amounts reimbursed under the Company's Executive Tax and Financial Planning Reimbursement Program.
- (7) Mr. Aldeborgh joined the Company in January 2013.

Grants of Plan Based Awards in Fiscal 2014

| Name | Grant Date | Date of Compensation Committee Approval(1) | All Other Option Awards: Number of Securities Underlying Options (#)(2) | Exercise or Base Price of Option Awards (\$/Sh) | Grant Date Fair Value of Stock and Option Awards(3) |
|--------------------|------------|--|---|---|---|
| Mary G. Puma | 7/15/2014 | 5/12/2014 | 300,000 | \$ 1.80 | \$ 288,984 |
| Kevin J. Brewer | 7/15/2014 | 5/12/2014 | 225,000 | \$ 1.80 | \$ 216,738 |
| William Bintz | 7/15/2014 | 5/12/2014 | 200,000 | \$ 1.80 | \$ 192,656 |
| John E. Aldeborgh | 7/15/2014 | 5/12/2014 | 200,000 | \$ 1.80 | \$ 192,656 |
| Lynnette C. Fallon | 7/15/2014 | 5/12/2014 | 150,000 | \$ 1.80 | \$ 144,492 |

- (1) As discussed above in "2014 Compensation Discussion and Analysis—Long-Term Equity Incentive Compensation—Equity Compensation Processes," it is the Compensation Committee's general practice to approve equity awards with a future effective date, usually on the 15th of the month following the approval. Annual equity grants are usually approved in May or June with a grant date of July 15th (or the next succeeding trading day).
- (2) The NEOs were granted stock options under the Company's 2012 EIP effective July 15, 2014. These options vest as to 25% of the shares on each of the first four anniversaries of the date of grant. Other than future services to the Company, no consideration was paid or will be due in order acquire these stock options. The 2014 stock options will be forfeited if the NEO's employment terminates prior to vesting, as described in the table entitled "Outstanding Equity Awards at Fiscal 2014 Year End." See "Long-Term Equity Incentive Compensation—2014 Equity Grants" in "2014 Compensation Discussion and Analysis" above.
- (3) Represents the grant date fair value of the equity awards received by the NEO in 2014, determined in accordance with FASB ASC Topic 718, using the assumptions described in the Stock Award Plans and Stock-Based Compensation Note to the Company's Financial Statements included in the Form 10-K filed with the Securities and Exchange Commission for 2014.

Outstanding Equity Awards at Fiscal 2014 Year End

None of the NEOs held unvested restricted stock or restricted stock units as of December 31, 2014.

| Name | Number of Securities Underlying Unexercised Options (#) Exercisable | Number of Securities Underlying Unexercised Options (#) Unexercisable | Option Exercise Price (\$) | Option Awards | Option Expiration Date |
|---------------------------|---|---|----------------------------|---------------|------------------------|
| Mary G. Puma | | | | | |
| | 250,000 | 0 | \$ 0.70 | | 11/17/2018 |
| | 250,000 | 0 | \$ 1.16 | | 11/16/2019 |
| | 250,000 | 0 | \$ 1.60 | | 7/15/2020 |
| (1) | 187,500 | 62,500 | \$ 1.60 | | 7/15/2021 |
| (2) | 125,000 | 125,000 | \$ 0.93 | | 7/16/2019 |
| (3) | 62,500 | 187,500 | \$ 1.99 | | 7/15/2020 |
| (4) | 0 | 300,000 | \$ 1.80 | | 7/15/2021 |
| Kevin J. Brewer | | | | | |
| | 125,000 | 0 | \$ 0.70 | | 11/17/2018 |
| | 125,000 | 0 | \$ 1.16 | | 11/16/2019 |
| | 150,000 | 0 | \$ 1.60 | | 7/15/2020 |
| (1) | 112,500 | 37,500 | \$ 1.60 | | 7/15/2021 |
| (2) | 75,000 | 75,000 | \$ 0.93 | | 7/16/2019 |
| (3) | 56,250 | 168,750 | \$ 1.99 | | 7/15/2020 |
| (4) | 0 | 225,000 | \$ 1.80 | | 7/15/2021 |
| William Bintz | | | | | |
| | 17,000 | 0 | \$ 4.78 | | 1/3/2016 |
| | 5,000 | 0 | \$ 6.39 | | 5/15/2017 |
| | 100,000 | 0 | \$ 0.70 | | 11/17/2018 |
| | 100,000 | 0 | \$ 1.16 | | 11/16/2019 |
| | 150,000 | 0 | \$ 1.60 | | 7/15/2020 |
| (1) | 112,500 | 37,500 | \$ 1.60 | | 7/15/2021 |
| (2) | 75,000 | 75,000 | \$ 0.93 | | 7/16/2019 |
| (3) | 75,000 | 225,000 | \$ 1.99 | | 7/15/2020 |
| (4) | 0 | 200,000 | \$ 1.80 | | 7/15/2021 |
| John E. Aldeborgh | | | | | |
| (5) | 50,000 | 150,000 | \$ 1.27 | | 1/15/2020 |
| (3) | 87,500 | 262,500 | \$ 1.99 | | 7/15/2020 |
| (4) | 0 | 200,000 | \$ 1.80 | | 7/15/2021 |
| Lynnette C. Fallon | | | | | |
| | 125,000 | 0 | \$ 0.70 | | 11/17/2018 |
| | 125,000 | 0 | \$ 1.16 | | 11/16/2019 |
| | 125,000 | 0 | \$ 1.60 | | 7/15/2020 |
| (1) | 75,000 | 75,000 | \$ 1.60 | | 7/15/2021 |
| (2) | 37,500 | 112,500 | \$ 0.93 | | 7/16/2019 |
| (3) | 25,000 | 50,000 | \$ 1.99 | | 7/15/2020 |
| (4) | 0 | 150,000 | \$ 1.80 | | 7/15/2021 |

(1) Assuming continued employment, the unexercisable options will become exercisable on July 15, 2015.

- (2) Assuming continued employment, the unexercisable options will become exercisable as to 50% of the shares subject to the options on each of July 16, 2015 and 2016.
- (3) Assuming continued employment, the unexercisable options will become exercisable as to $\frac{1}{3}$ of the shares subject to the options on each of July 15, 2015, 2016 and 2017, subject to acceleration beginning in 2015 based on the closing price of the Common Stock over a 20 trading day period.
- (4) Assuming continued employment, the unexercisable options will become exercisable as to 25% of the shares subject to the options on each of July 15, 2015, 2016, 2017 and 2018.
- (5) Assuming continued employment, 50,000 of the unexercisable options will become exercisable on each of January 15, 2015, 2016 and 2017.

Option Exercises and Stock Vested During Fiscal 2014

None of the NEOs acquired shares on vesting of stock awards in 2014.

| Name | Number of Shares Acquired on Exercise (#) | Option Awards Value Realized on Exercise \$(1) |
|--------------------|--|---|
| Mary G. Puma | 0 | - |
| Kevin J. Brewer | 0 | - |
| William Bintz | 90,000 | \$135,000 |
| John E. Aldeborgh | 0 | - |
| Lynnette C. Fallon | 0 | - |

- (1) Represents the difference between the closing market price of the underlying shares on the date of exercise and the exercise price of the option, multiplied by the number of options exercised. The actual amount received by the NEO on the sale of any of the shares acquired on exercise will depend on the market values of the Company's common stock at the time the NEO disposes of such shares.

Payments on Termination or Change of Control

Employment Agreement with Ms. Puma. The Company has had an Employment Agreement with Ms. Puma since November 2007 that provides for a one-year term of employment at a minimum annual base salary of \$500,000 and an annual target incentive compensation opportunity of 100% of base salary. In 2011, the Compensation Committee approved an increase in Ms. Puma's base pay to \$550,000, which increase was deferred at Ms. Puma's request and implemented on January 1, 2013. Ms. Puma's base salary and incentive opportunities may be subject to future adjustment by the Board, but not below the minimum levels in her Employment Agreement, unless mutually agreed. In 2014, Ms. Puma voluntarily temporarily reduced her base pay from \$550,000 to approximately \$493,000. See "2014 Compensation Discussion and Analysis—Base Salary" above.

The term of Ms. Puma's agreement automatically renews on a year-to-year basis unless one party notifies the other that the agreement will not be extended. Such notice must be sent within a 60 day window period beginning 180 days prior to the next anniversary of the effective date. The agreement also provides that Ms. Puma will participate in the Company's equity compensation plans, the 401(k) savings plan and the welfare benefit plans that we sponsor.

In the event Ms. Puma's employment is terminated prior to the end of the term of the Employment Agreement for reasons other than cause, death, disability or in the event of voluntary resignation without "good reason" (as defined in the Employment Agreement) she is entitled to full acceleration of vesting of options and other equity rights and a cash separation payment. The cash separation payment will equal 24 months of her annual base salary and two times an annual bonus amount determined in accordance with the agreement. For this purpose, Ms. Puma's annual bonus compensation will be her current annual base salary multiplied by the greater of (a) the percentage of her annual base salary that she actually received as a bonus for the prior fiscal year or (b) 25% of her annual base salary. Under the Employment Agreement Ms. Puma is also entitled to up to 18 months of Company-paid COBRA premiums. The following table sets forth the separation pay that would have been due to Ms. Puma under her Employment Agreement if a qualifying termination occurred on December 31, 2014:

| Lump sum cash payment (1) | Value of accelerated vesting on equity awards (2) | 18 months of COBRA premiums for health coverage (3) | Total |
|---------------------------|---|---|--------------|
| \$1,375,000 | \$ 1,241,546.00 | \$ 37,180 | \$ 2,653,726 |

- (1) This amount represents 24 months of Ms. Puma's annual base salary at the highest rate in effect in the year preceding December 31, 2014 plus 24 months of the minimum bonus amount specified in the agreement (25% of her annual base salary). For the purpose of this calculation, we used Ms. Puma's approved annual base salary without regard to her voluntary agreement to a 20% pay reduction beginning in September 2014, as discussed in "2014 Compensation Discussion and Analysis." Accordingly, the monthly rate of annual base salary (\$45,833) and monthly bonus amount (\$11,458) were calculated using annual base salary of \$550,000. The lump sum cash payment above would be due within 30 days of termination.
- (2) This amount reflects a valuation of the acceleration of Ms. Puma's outstanding equity awards using the methodology prescribed under IRC Section 280G, which provides for an excise tax on certain change of control payments. In addition to options held by Ms. Puma, this calculation assumes the issuance of 429,687 RSUs to Ms. Puma under the 2014 AMI. These 2014 AMI RSUs were not ultimately issued. See "2014 Compensation Discussion and Analysis." This valuation is based on the closing price of our common stock on the last trading day of 2014 (\$2.56). The actual amount received by Ms. Puma on exercise of options and sales of shares issued on RSUs will depend on the market values at the time of such transactions.
- (3) Ms. Puma's employment agreement provides that the Company will pay for up to 18 months of COBRA premiums. This amount represents 18 months of COBRA premiums in effect during 2015 for Ms. Puma's coverage elections. Actual COBRA rates will change on January 1, 2016.

Change of Control Agreements. The Company has entered into a Change of Control Agreement with each of our executive officers, including our NEOs, to provide that severance compensation will be paid in a lump sum within 30 days of a covered termination following a change in control, as defined in the agreement. These Change of Control Agreements provide that executive officers are entitled to severance compensation in the event there is both (1) a change in control and (2) a termination of employment within three years of that change in control for reasons other than cause, death, disability or voluntary resignation without good reason. Under the Change of Control Agreements, "good reason" is generally defined as a material diminution in the executive's authority, a material reduction in base pay or a material change in geographic

location of the executive's job. A "change of control" is defined in the agreement and covers a number of events, including a merger or acquisition involving the Company in which the persons holding the Company's shares immediately prior to the transaction hold less than 75% of the shares outstanding after the transaction.

Severance compensation consists of a cash payment equal to three times the executive's annual base salary and average annual bonus as of the date of termination. For this purpose, an executive's average annual bonus is his or her current cash bonus opportunity multiplied by the average of the individual performance scores given to the executive in the last three years, assuming a target payout based on company metrics. In addition, all unvested RSUs and options held by the executive will vest in full, and options will remain outstanding and exercisable until their expiration in accordance with the applicable award agreement. In February 2014, the Compensation Committee provided that in the event of a change of control prior to the determination of funding under the 2014 AMI (see "*2014 Compensation Discussion and Analysis*" above), each of the NEOs would be granted, effective on the change of control, the NEO's target RSU under the 2014 AMI. Accordingly, the amounts set forth in the column entitled "*Value of accelerated vesting on equity awards*" in the table below includes the value of these RSUs in addition to equity grants actually held by the NEO on December 31, 2014.

The Change of Control Agreements provide for a non-competition covenant pursuant to which the executive may not be engaged by, or own, any business competing with any of the businesses conducted by the Company for a period of 12 months following any termination of employment (whether or not following a change of control). The Change of Control Agreements also provide for a non-solicitation covenant whereby the executives may not solicit employees of the Company to leave employment with the Company or solicit or induce customers of the Company to cease doing business with the Company, during the 12 months following any termination of employment (whether or not following a change of control).

Each of our current Change of Control Agreements with our current executive officers provide for a gross-up of any excise tax due under Section 4999 of the Internal Revenue Code and any income tax due on such gross-up payment, as shown in the chart below. The excise taxes due under Section 4999 of the Internal Revenue Code are unpredictable and can have widely divergent and unexpected effects based on an executive's personal compensation history. Therefore, to provide a predictable and equal level of benefit to each of the NEOs without regard to the effect of the excise tax, at the time that we entered into Change of Control Agreements with the NEOs, we determined that it was appropriate to pay the cost of this excise tax plus an amount needed to pay income taxes due on such additional payment. Such provisions were consistent with market practice at the time that we entered into the Change of Control Agreements with our NEOs.

As noted above under "*Corporate Governance—Governance Policies*," consistent with our commitment to strong corporate governance and responsiveness to our stockholders, in 2014 the Board of Directors adopted a new governance policy against tax gross-up arrangements, which provides that no future change of control agreement with any future executive officer of the Company, shall include a gross-up in respect of any excise or other tax due in respect of severance compensation, including pursuant to Sections 280G and 4999 of the Internal Revenue Code.

The amounts due to each named executive officer under the Change of Control Agreements in the event that a change of control and termination occurred on December 31, 2014 are set forth in the table below:

| Estimated Payments under the Change of Control Agreements if due at December 31, 2014 | | | | | |
|---|---------------------------|---|---|--------------|--|
| Name | Lump sum cash payment (1) | Value of accelerated vesting on equity awards (2) | Excise tax due under IRC 280G, plus gross-up amount (3) | Total | |
| Mary G. Puma | \$ 3,454,000 | \$ 1,241,546 | \$ 2,189,152 | \$ 6,884,698 | |
| Kevin J. Brewer | \$ 1,711,500 | \$ 670,917 | \$ 1,019,844 | \$ 3,402,261 | |
| William Bintz | \$ 1,613,700 | \$ 669,952 | \$ 862,091 | \$ 3,145,743 | |
| John E. Aldeborgh | \$ 1,584,000 | \$ 726,577 | \$ 966,161 | \$ 3,276,738 | |
| Lynnette C. Fallon | \$ 1,584,000 | \$ 528,752 | \$ 907,142 | \$ 3,019,894 | |

- (1) This amount, which is due within 30 days of termination, represents separation pay equal to (A) three times the NEO's current annual base salary plus an average bonus amount based on past performance assessments, and (B) the amount earned but unpaid, if any, under a cash incentive plan in effect for 2014. None of the NEOs earned a cash bonus under the cash incentive plan in 2014, since the Compensation Committee established a share pool for a potential RSU issuance in lieu of a cash payout under the 2014 Axcelis Management Incentive Plan. See "Annual Cash Incentive" in "2014 Compensation Discussion and Analysis."
- (2) These amounts reflect a valuation of the acceleration of all of the NEO's outstanding equity awards (including the assumed issuance of RSUs under the 2014 AMI) using the methodology prescribed under IRC Section 280G, which provides for an excise tax on certain change of control payments. In addition to options held by the NEOs, these amounts assume the issuance of target RSUs for each NEO under the 2014 AMI, which were not ultimately issued. See "2014 Compensation Discussion and Analysis." This valuation is based on the closing price of our common stock on the last trading day of 2014 (\$2.56). The actual amount received by the NEO on exercise of options and sales of shares issued on RSUs will depend on the market values at the time of the change of control.
- (3) The Change of Control Agreement with each NEO provides for a gross-up of excise taxes incurred under Section 4999 of the Code, which amount is grossed up to cover income taxes due on such reimbursement. The amounts shown in this column represent amounts due to taxing authorities and will not be retained by the executive.

In the event Ms. Puma receives payment under her Change of Control Agreement, she will not receive amounts and benefits due under her Employment Agreement unless such amounts are in excess of the amounts paid under the Change of Control Agreement.

**INFORMATION CONCERNING PARTICIPANTS IN
AXCELIS' SOLICITATION OF PROXIES**

Set forth below are the names and business addresses of our directors and nominees and the names, present principal occupations, and business addresses of our officers who are considered under the rules of the Securities and Exchange Commission to be "participants" in our solicitation of proxies from our stockholders in connection with the 2015 annual meeting.

Directors and Nominees

The principal occupations of our directors and nominees who are considered to be "participants" in our solicitation of proxies are set forth in the section of this proxy statement entitled "PROPOSAL 1: ELECTION OF DIRECTORS." Their business addresses, and the address of their respective organizations of employment, are as follows:

| Name | Employment Status | Business Address |
|-----------------------|-------------------|--|
| R. John Fletcher | Employed | c/o Fletcher Spaght, Inc., 222 Berkeley Street, 20 th Floor, Boston, MA 02116 |
| Arthur L. George, Jr. | Retired | 901 Clack Drive, Garland, Tx. 75044 |
| James W. Green | Employed | c/o Analogic Corporation, 8 Centennial Drive, Peabody, MA 01960 |
| Joseph P. Keithley | Retired | 18400 South Park Blvd., Shaker Heights, OH 44120 |
| Duy-Loan T. Le | Retired | c/o Texas Instruments, 13905 University Blvd, MS 103, Sugar Land TX 77479 |
| Barbara J. Lundberg | Employed | ul. Piasta 19, 05-510 Konstancin, Poland |
| Patrick H. Nettles | Employed | c/o CIENA Corporation, 7035 Ridge Road, Hanover, Maryland 21076 |
| Mary G. Puma | Employed | c/o Axcelis Technologies, Inc. , 108 Cherry Hill Drive, Beverly, MA 01915 |
| Thomas St. Dennis | Employed | c/o FormFactor, Inc., 7005 Southfront Road, Livermore, CA 94551 |

Officers

The principal occupations of our officers who are considered to be "participants" in our solicitation of proxies are set forth below. The principal occupation listed refers to the person's

position with Axcelis, and the business address for each person is c/o Axcelis, 108 Cherry Hill Drive, Beverly, MA 01915.

| Name | Principal Occupation |
|--------------------|--|
| Mary G. Puma | President, Chief Executive Officer and Chairman |
| Kevin J. Brewer | Executive Vice President and Chief Financial Officer |
| William Bintz | Executive Vice President, Engineering and Marketing |
| John E. Aldeborgh | Executive Vice President, Customer Operations |
| Lynnette C. Fallon | Executive Vice President, HR/Legal and General Counsel |
| Douglas A. Lawson | Executive Vice President, Corporate Marketing and Strategy |

Ownership of Axcelis Securities

The number of shares of our common stock held by each of our directors, nominees for director and named executive officers is set forth in the section of this proxy statement entitled SHARE OWNERSHIP OF DIRECTORS AND EXECUTIVE OFFICERS. Douglas A. Lawson, who is also considered a participant in the proxy solicitation, beneficially owns 51,098 shares, which is less than 1% of the outstanding shares.

Transactions in Axcelis Securities by the Participants

The following table lists the purchases, including grants by Axcelis, and sales of our securities by each of the participants during the past two years. Unless otherwise indicated, all transactions were in the public market or pursuant to our equity incentive plans, and none of the purchase price or market value of the respective shares is represented by funds borrowed or otherwise obtained for the purpose of acquiring or holding such securities.

| Name | Transaction Date | Number of Axcelis Common Shares Acquired (or Disposed of) | Equity Awards | Notes |
|---|------------------|---|---|--------------------------------------|
| <i>Current Board of Directors who are Nominated</i> | | | | |
| R. John Fletcher | 7/15/2013 | | 40,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 8/8/2013 | 10,000 | | Open market purchase |
| | 5/22/2014 | 5,000 | | Open market purchase |
| | 7/15/2014 | | 40,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| Arthur L. George, Jr. | 5/28/2014 | 5,000 | | Open market purchase |
| | 5/29/2014 | 15,000 | | Open market purchase |
| | 7/15/2014 | | 40,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 11/17/2014 | | 45,000 share restricted stock unit grant | Under the 2012 Equity Incentive Plan |
| Joseph P. Keithley | 7/15/2013 | | 40,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 8/15/2013 | 25,000 | | Open market purchase |
| | 7/15/2014 | | 40,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |

| | | | | |
|--------------------|------------|--|---|--------------------------------------|
| Barbara Lundberg | 7/15/2014 | | 40,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 11/17/2014 | | 45,000 share restricted stock unit grant | Under the 2012 Equity Incentive Plan |
| Patrick H. Nettles | 7/15/2013 | | 40,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 7/15/2014 | | 40,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |

Nominees for Election in 2015 Not Current Board Directors

| | | | | |
|-------------------|-----------|-------|--|----------------------|
| James T. Green | 1/7/2015 | 2,400 | | Open market purchase |
| | 1/12/2015 | 286 | | Open market purchase |
| | 1/12/2015 | 2,114 | | Open market purchase |
| Duy-Loan Le | | None | | |
| Thomas St. Dennis | | None | | |

Executive Officers

| | | | | |
|-------------------|------------|----------|---|--------------------------------------|
| Mary G. Puma | 1/15/2013 | | 147,637 restricted stock unit grant in lieu of base pay | Under the 2012 Equity Incentive Plan |
| | 3/18/2013 | (14,573) | | Sale to cover taxes on RSU vesting |
| | 6/18/2013 | (12,251) | | Sale to cover taxes on RSU vesting |
| | 7/15/2013 | | 250,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 9/17/2013 | (12,488) | | Sale to cover taxes on RSU vesting |
| | 12/17/2013 | (12,550) | | Sale to cover taxes on RSU vesting |
| | 7/15/2014 | | 300,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| Kevin J. Brewer | 7/15/2013 | | 225,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 7/15/2014 | | 225,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 2/19/2015 | 71,007 | | Option exercise |
| | 2/19/2015 | (71,007) | | Sale of option shares |
| William Bintz | 1/15/2013 | | 37,795 restricted stock unit grant in lieu of base pay | Under the 2012 Equity Incentive Plan |
| | 3/18/2013 | (3,823) | | Sale to cover taxes on RSU vesting |
| | 6/18/2013 | (3,065) | | Sale to cover taxes on RSU vesting |
| | 7/15/2013 | | 300,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 9/17/2013 | (3,136) | | Sale to cover taxes on RSU vesting |
| | 12/17/2013 | (3,240) | | Sale to cover taxes on RSU vesting |
| | 2/14/2014 | 90,000 | | Option exercise |
| | 2/14/2014 | (90,000) | | Sale of option shares |
| | 7/15/2014 | | 200,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 2/17/2015 | 57,168 | | Option exercise |
| 2/17/2015 | (57,168) | | Sale of option shares | |
| 2/18/2015 | 27,832 | | Option exercise | |
| 2/18/2015 | (27,832) | | Sale of option shares | |
| John E. Aldeborgh | 7/15/2013 | | 350,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 7/15/2014 | | 200,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |

| | | | | |
|--------------------|------------|----------|--|--|
| Lynnette C. Fallon | 7/15/2013 | | 75,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 11/11/2013 | (17,079) | | Sale of shares issued on RSU grant |
| | 7/15/2014 | | 150,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 11/10/2014 | (15,000) | | Sale of shares issued on RSU grant |
| Douglas Lawson | 7/15/2013 | | 75,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 8/7/2013 | 10,000 | | Open market purchase; includes purchases by spouse |
| | 8/08/2013 | 10,000 | | Open market purchase |
| | 8/9/2013 | 5,000 | | Open market purchase; includes purchases by spouse |
| | 11/11/2013 | (10,000) | | Includes sales by spouse |
| | 5/9/2014 | 10,000 | | Open market purchase |
| | 7/15/2014 | | 125,000 share non-qualified stock option grant | Under the 2012 Equity Incentive Plan |
| | 11/18/2014 | 24,748 | | Option exercise |
| | 11/18/2014 | (24,748) | | Sale of option shares |
| | 11/19/2014 | 30,252 | | Option exercise |
| | 11/19/2014 | (30,252) | | Sale of option shares |
| | 2/17/2015 | 25,838 | | Option exercise |
| | 2/17/2015 | (18,838) | | Sale of option shares |
| | 2/18/2015 | 57,912 | | Option exercise |
| | 2/18/2015 | (57,912) | | Sale of option shares |

Miscellaneous Information Concerning Participants

Other than as set forth in this Annex A or the proxy statement, none of the participants or their associates (i) beneficially owns, directly or indirectly, any shares or other securities of Axcelis or any of our subsidiaries or (ii) has any substantial interest, direct or indirect, by security holdings or otherwise, in any matter to be acted upon at the annual meeting. In addition, neither we nor any of the participants listed above has been within the past year a party to any contract, arrangement or understanding with any person with respect to our securities, including, but not limited to, joint ventures, loan or option arrangements, puts or calls, guarantees against loss or guarantees of profit, division of losses or profits or the giving or withholding of proxies. Other than as set forth in this Annex A or the proxy statement, none of the participants listed above or any of their associates have (i) any arrangements or understandings with any person with respect to any future employment by Axcelis or our affiliates or with respect to any future transactions to which we or any of our affiliates will or may be a party or (ii) a direct or indirect material interest in any transaction or series of similar transactions since the beginning of our last fiscal year or any currently proposed transactions, or series of similar transactions, to which we or any of our subsidiaries was or is to be a party in which the amount involved exceeds \$120,000.

Other Information

There are no material proceedings to which any director, officer or affiliate of Axcelis, any owner of record or beneficially of more than five percent of any class of voting securities of Axcelis, or any of their associates is a party adverse to, or has a material interest adverse to, Axcelis or any of its subsidiaries.

**AXCELIS TECHNOLOGIES, INC.
2012 EQUITY INCENTIVE PLAN**

As approved by the Shareholders on May 2, 2012, May 14, 2013, and May 13, 2014, and as further amended by the Board of Directors on November 13, 2014, and as proposed for approval by the Stockholders on May 13, 2015

1. Purpose.

The purpose of the Axcelis Technologies, Inc. 2012 Equity Incentive Plan (the "Plan") is to attract and retain persons who are expected to make important contributions to the Company and its Affiliates, to provide an incentive for them to achieve the Company's goals, and to enable them to participate in the growth of the Company by granting Awards with respect to the Company's Common Stock. Certain capitalized terms used herein are defined in Section 7 below.

2. Administration.

The Plan shall be administered by the Committee; provided, that the Board may in any instance perform any of the functions of the Committee hereunder. The Committee shall have authority to adopt, alter and repeal such administrative rules, guidelines and practices governing the operation of the Plan as it shall from time to time consider advisable, and to interpret the provisions hereof in its discretion. The Committee's determinations hereunder shall be final and binding. The Committee may, subject to applicable law, delegate to one or more Executive Officers of the Company the power to make Awards to Participants who are not Reporting Persons or Covered Employees and all determinations hereunder with respect thereto, provided that the Committee shall fix the maximum number of shares that may be subject to such Awards.

3. Eligibility.

All directors and all employees and consultants of the Company or any Affiliate capable of contributing to the successful performance of the Company, other than any person who has irrevocably elected not to be eligible, are eligible to be Participants in the Plan.

4. Stock Available for Awards.

(a) *Amount.* Subject to adjustment under subsection 4(b), up to an aggregate of 11,050,000 shares of Common Stock may be issued pursuant to Awards, including Incentive Stock Options, under the Plan. For the purposes of counting shares hereunder:

- i. The number of shares issued as, or upon settlement of, any Award other than an Option or Stock Appreciation Right shall be multiplied by 1.5;
 - ii. Outstanding shares tendered by the Participant to pay for the exercise of an Option or Stock Appreciation Right, shares repurchased in the open market by
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the Company, and shares that are withheld by the Company to satisfy the exercise or tax withholding obligation upon exercise or vesting of an Award may not be netted out against shares of Common Stock issued pursuant to Awards hereunder;

- iii. Shares subject to any Award granted under this Plan that are not issued because the Award expires, is terminated unexercised or is forfeited, in whole or in part, may be subject to new Awards without being deemed to exceed such maximum amount;
- iv. Shares that are not issued under an award that is outstanding under the 2000 Stock Plan as of May 2, 2012 because such award expires, is terminated unexercised or is forfeited may be subject to new Awards under this Plan (other than Incentive Stock Options), without being deemed to exceed such maximum amount; and
- v. Shares issued under this Plan as a result of the assumption or substitution of outstanding grants from an acquired company shall not be deemed to exceed such maximum amount.

Shares issued under the Plan may consist of authorized but unissued shares or treasury shares

(b) *Adjustments.* Upon any equity restructuring, whether a stock dividend, recapitalization, split-up or combination of shares, or otherwise, the number of shares in respect of which Awards may be made under the Plan, the number of shares subject to outstanding Awards, the exercise, purchase or conversion price with respect to any Award, and the limit on individual grants in subsection 5(c) shall be proportionately adjusted, provided that the number of shares subject to any Award shall always be a whole number. In the event the Committee determines that any other reorganization, recapitalization, merger, spin-off or other corporate transaction affects the Common Stock such that an adjustment is required in order to preserve the benefits intended to be provided by the Plan, the Committee shall equitably adjust any or all of the number and kind of shares in respect of which Awards may be made under the Plan, the number and kind of shares subject to outstanding Awards, the exercise, purchase or conversion price with respect to any Award, and the limit on individual grants in subsection 5(c), provided that the number of shares subject to any Award shall always be a whole number. If considered appropriate, the Committee may make provision for a cash payment with respect to all or part of an outstanding Award instead of or in addition to any such adjustment. Any adjustment made pursuant to this subsection shall be subject, in the case of Incentive Stock Options, to any limitation required under the Code.

5. *Awards under the Plan.*

(a) *Types of Awards.* The Committee may grant Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Stock Equivalents, and Awards of shares of Common Stock that are not subject to restrictions or forfeiture. The effectiveness of any such grant may be conditioned on the passage of time, the achievement of any Performance Goals, or the happening of any other event.

(b) *Terms and Conditions of Awards.*

(i) *Participants; Terms.* The Committee shall select the Participants to receive Awards and determine the terms and conditions of each Award. Without limiting the foregoing but subject to the other provisions of the Plan and applicable law, the Committee shall determine (A) the number of shares of Common Stock subject to each Award or the manner in which such number shall be determined, (B) the price, if any, a Participant shall pay to receive or exercise an Award or the manner in which such price shall be determined, (C) the time or times when an Award may vest or be exercised, settled, or transferred, (D) any Performance Goals, restrictions or other conditions to vesting, exercise, settlement, or transferability of an Award, (E) whether an Award may be settled in the form of cash, Common Stock or other securities of the Company, Awards or other property, and the manner of calculating the amount or value thereof, (F) the duration of any Restricted Period or any other circumstances in which an Award may be forfeited to the Company, (G) the effect on an Award of the disability, death, retirement or other termination of employment or other service of a Participant, and (H) the extent to which, and the period during which, the Participant or the Participant's legal representative, guardian or Designated Beneficiary may receive payment of an Award or exercise rights thereunder. Except as otherwise provided hereby or in a particular Award, any determination or action with respect to an Award may be made or taken by the Committee at the time of grant or at any time thereafter.

(ii) *Options and Stock Appreciation Rights.* Incentive Stock Options may only be granted to persons eligible to receive such Options under the Code. The exercise price for any Option or Stock Appreciation Right shall not be less than 100% of the Fair Market Value of the Common Stock on the Date of Grant; provided that Options granted in substitution for options granted by a former employer to persons who become eligible to receive Awards hereunder as a result of a transaction described in Section 424(a) of the Code may, consistent with such Section, have a lower exercise price. No Option or Stock Appreciation Right shall have a term longer than seven (7) years. No Incentive Stock Option may be granted more than ten years after the Effective Date. The Committee shall determine the manner of calculating the excess in value of the shares of Common Stock over the exercise price of a Stock Appreciation Right.

(iii) *Restricted Stock and Restricted Stock Units.* Shares of Restricted Stock and shares subject to Restricted Stock Units may not be sold, assigned, transferred, pledged

or otherwise encumbered, except as permitted by the Committee, during the applicable Restricted Period. Restricted Stock Units may be settled in shares of Common Stock or cash as determined by the Committee.

(iv) *Minimum Vesting Requirements.* Notwithstanding Sections 5(b)(i) or Section 6(e), with respect to Awards to Executive Officers:

(A) vesting, settlement, or lapse of forfeiture restrictions that is solely based on continued employment, service or the passage of time shall occur (A) with respect to no more than one-third of the shares subject to such Award per year and (B) over not less than four years from the date of grant with respect to the full number of shares subject to such Award; and

(B) vesting, settlement, or lapse of forfeiture restrictions that is based on the achievement of Performance Goals shall occur based on a Performance Period of at least one year;

provided that the foregoing limitations shall not (1) apply to vesting, settlement, or lapse of forfeiture restrictions in connection with the termination of employment or other service of a Participant by the Company or due to the Participant's disability, death or retirement nor (2) preclude the Committee from (x) exercising its discretion to accelerate the vesting of any Award upon a Transaction as contemplated by Section 5(b)(viii), (y) establishing a shorter vesting schedule for consultants or newly-hired employees, or (z) establishing a shorter schedule for vesting, settlement, or lapse of forfeiture restrictions on Awards that are granted in exchange for or in lieu of the right to receive the payment of an equivalent amount of salary, bonus or other compensation.

(v) *Payment of Exercise Price.* The Committee shall determine the form of consideration and manner of payment of the exercise price, if any, of any Award. Without limiting the foregoing, the Committee may, subject to applicable law, permit such payment to be made in whole or in part in cash or by surrender of shares of Common Stock (which may be shares retained from the respective Award or any other Award) valued at their Fair Market Value on the date of surrender, or such other lawful consideration, including a payment commitment of a financial or brokerage institution, as the Committee may determine. The Company may accept, in lieu of actual delivery of stock certificates, an attestation by the Participant in form acceptable to the Committee that he or she owns of record the shares to be tendered free and clear of claims and other encumbrances.

(vi) *Dividends.* In the discretion of the Committee, any Award may provide the Participant with dividends or dividend equivalents payable (in cash, in shares of Common Stock, or in the form of Awards under the Plan) currently or deferred and with or without interest ; provided that any dividend paid or issued with respect to any portion of an Award of Restricted Stock and any dividend equivalent paid or issued with respect

to any portion of any other Award shall be subject to the same restrictions (including risk of forfeiture) as such Restricted Stock or other Award, respectively, until the end of the respective Restricted Period or such portion has otherwise vested.

(vii) *Termination and Forfeiture.* The terms of any Award may include such continuing provisions for termination of the Award and/or forfeiture or recapture of any shares, cash or other property previously issued pursuant thereto relating to competition or other activity or circumstances detrimental to the Company as the Committee may determine to be in the Company's best interests. Without limiting the foregoing, the terms of any Award shall be subject to, and shall be deemed automatically amended to incorporate, any "clawback," "recapture," or similar policy adopted by the Company and in effect before or after the grant of such Award.

(viii) *Certain Extraordinary Transactions.* The Committee may in its discretion provide, at the time of grant or at any time thereafter, that in the case of any recapitalization, stock acquisition, merger, consolidation or other form of corporate transaction in which a company other than the Company is the surviving, continuing, successor or purchasing entity (a "Transaction"), the surviving, continuing, successor or purchasing entity or a parent or subsidiary of such entity may, without the consent of the Participant, assume the Company's rights and obligations under any Award or portion thereof outstanding immediately before the Transaction or substitute for any such outstanding Award or portion thereof a substantially equivalent award with respect to such entity's own stock or other property or cash, in either case with equitable adjustments in the number and type of shares or other assets subject to the Awards and the exercise, purchase or conversion price with respect to any Award, in light of the consideration received by the Company's stockholders in the Transaction. Any such Award that is not so assumed or substituted for shall terminate upon the consummation of such Transaction on such terms, if any, as the Committee shall provide. Notwithstanding the foregoing, if the stockholders of the Company receive consideration that is all or predominantly cash in exchange for their shares of common Stock in a Transaction, then, in order to preserve the Participants' rights under outstanding Awards, the Committee shall, without the need for consent of any Participant, either (A) cause any unexercisable or unvested portion of an Award outstanding immediately before the Transaction to become fully exercisable and vested prior to such Transaction (but effective only on consummation of the Transaction), and any Options and Stock Appreciation Rights that have not been exercised as of the consummation of the Transaction shall thereupon terminate or (B) provide for payment to the Participant of cash, stock of another entity party to the Transaction, or other property with a Fair Market Value equal to the amount, if any, that would have been received upon the vesting, exercise, settlement, or transferability of the Award had any unexercisable or unvested portion of the Award become fully exercisable and vested and the Award been exercised or paid in connection with the Transaction, reduced (but not below zero) by the exercise or purchase price per share, if any, under such Award, whereupon the Award shall terminate. If any portion of such consideration may be received by Company's stockholders in the Transaction on a

contingent or delayed basis, the Committee may, in its sole discretion, determine such Fair Market Value per share as of the time of the Transaction on the basis of the Committee's good faith estimate of the present value of the probable amount of future payment of such consideration.

In the event of a recapitalization, stock acquisition, merger, consolidation or other form of corporate transaction in which the Company is the surviving, continuing, successor or purchasing entity, the Committee may make equitable adjustments to outstanding Awards pursuant to Section 4(b).

(ix) *Documentation.* Each Award under the Plan shall be evidenced by documentation in the form prescribed from time to time by the Committee and delivered to or executed and delivered by the Participant specifying the terms and conditions of the Award and containing such other terms and conditions not inconsistent with the provisions hereof as the Committee considers necessary or advisable to achieve the purposes of the Plan or to comply with applicable law and accounting principles. Any such documentation may be maintained solely in electronic format.

(x) *In General.* Any Award may be made alone, in addition to, or in relation to any other Award. The terms of Awards of each type need not be identical, and the Committee need not treat Participants uniformly. No Award shall be transferable except upon such terms and conditions and to such extent as the Committee determines, provided that no Award shall be transferable for value and Incentive Stock Options may be transferable only to the extent permitted by the Code. No Award to any Participant subject to United States income taxation shall provide for the deferral of compensation that does not comply with Section 409A of the Code. The achievement or satisfaction of any Performance Goals, restrictions or other conditions to vesting, exercise, settlement, or transferability of an Award shall be determined by the Committee.

(c) *Limit on Individual Grants.* The maximum number of shares of Common Stock subject to Options, Stock Appreciation Rights and other Awards intended to satisfy the requirements for "performance-based compensation" within the meaning of Section 162(m) of the Code that may be granted to a Participant in any fiscal year may not exceed 1,250,000 shares, subject to adjustment under subsection 4(b). In the case of any performance-based Awards settled in cash, no more than \$1,000,000 may be paid to any Participant with respect to any one year of a Performance Period.

6. *General Provisions.*

(a) *Tax Withholding.* A Participant shall pay to the Company, or make provision satisfactory to the Committee for payment of, any taxes required by law to be withheld in respect of Awards under the Plan no later than the date of the event creating the tax liability. The Company and its Affiliates may, to the extent permitted by law, deduct any such tax obligations from any payment of any kind due to the Participant under the Plan

or otherwise. In the Committee's discretion, the minimum tax obligations required by law to be withheld in respect of Awards may be paid in whole or in part in shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their Fair Market Value on the date of retention or delivery.

(b) *Legal Compliance.* The Company shall not be required to issue any shares of Common Stock or take any other action pursuant to the Plan unless the Company is satisfied that all requirements of law, or of any stock exchange on which the Common Stock is then listed, in connection therewith have been or will be complied with, and the Committee may impose any restrictions on the rights of Participants hereunder as it shall deem necessary or advisable to comply with any such requirements.

(c) *Foreign Nationals.* Awards may be made to Participants who are foreign nationals or employed outside the United States on such terms and conditions different from those specified herein as the Committee considers necessary or advisable to achieve the purposes of the Plan or to comply with applicable laws.

(d) *Awards Not Includable for Benefit Purposes.* Awards and other payments received by a Participant pursuant to the provisions of the Plan shall not be included in the determination of benefits under any pension, group insurance or other benefit plan applicable to the Participant which is maintained by the Company or any of its Affiliates, except as may be provided under the terms of such plans or determined by the Board.

(e) *Amendment, Exchange and Repurchase of Awards.*

(i) Subject to clauses (ii) and (iii) below, the Committee may amend, modify or terminate any outstanding Award, including without limitation changing the dates of vesting, exercise or settlement, causing the Award to be assumed by another entity, and substituting therefor another Award of the same or a different type, provided that the Participant's consent to such action shall be required unless the terms of this Plan or the Award permit such action, the Committee determines that such action is required by law or stock exchange rule, or the Committee determines that the action, taking into account any related action, would not materially and adversely affect the Participant.

(ii) Notwithstanding the attainment of Performance Goals in the case of any Award intended to satisfy the requirements for "performance-based compensation" within the meaning of Section 162(m) of the Code, the Committee may reduce (but not increase) the amount payable at a given level of performance to take into account additional factors that the Committee may deem relevant.

(iii) The foregoing notwithstanding, without further approval of the stockholders of the Company, (A) the Committee shall not authorize the amendment of any outstanding Option or Stock Appreciation Right to reduce the exercise price, (B) no Option or Stock Appreciation Right shall be canceled and replaced with an Award exercisable for Common Stock at a lower exercise price and (C) no Award shall be canceled in exchange for a cash

payment from the Company to the Award owner, except under the limited circumstances described above in Section 5(b)(viii) relating to Transactions.

7. *Certain Definitions.* As used in this Plan:

"Affiliate" means any business entity in which the Company owns directly or indirectly 50% or more of the total voting power or has a significant financial interest as determined by the Committee.

"Award" means any award of shares of Common Stock or right with respect to shares described in Section 5(a).

"Board" means the Board of Directors of the Company.

"Code" means the Internal Revenue Code of 1986, as amended from time to time, or any successor law.

"Committee" means one or more committees appointed by the Board to administer the Plan or a specified portion thereof. Each such committee shall be comprised of not less than two members of the Board who shall meet such criteria as the Board may specify from time to time.

"Common Stock" means the Common Stock, \$0.001 par value, of the Company.

"Company" means Axcelis Technologies, Inc., a Delaware corporation.

"Covered Employee" means a "covered employee" within the meaning of Section 162(m) of the Code.

"Date of Grant" means the date on which all requirements under applicable law and the Company's certificate of incorporation and bylaws for the effective grant of an Award have been satisfied.

"Designated Beneficiary" means the beneficiary designated by a Participant, in a manner determined by the Committee, to receive amounts due or exercise rights of the Participant in the event of the Participant's death. In the absence of an effective designation by a Participant, "Designated Beneficiary" means the Participant's legal representative.

"Effective Date," from time to time, means the most recent date that the Plan was adopted or, if earlier, that it was approved by the stockholders (including approval of the Plan as amended), as such terms are used in the regulations under Section 422 of the Code.

"Exchange Act" means the Securities Exchange Act of 1934, as amended from time to time, or any successor law.

"Executive Officer" has the meaning given in Rule 3b-7 under the Exchange Act, or any successor provision.

"Fair Market Value" with respect to the Common Stock or other property means the fair market value thereof determined by such methods as shall be established by the Committee from time to time. Unless otherwise determined by the Committee in good faith, the per share Fair Market Value of the Common Stock as of any date shall mean (a) if the Common Stock is then listed or admitted to trading on a national securities exchange, (i) the last reported sale price on such date on the principal national securities exchange on which the Common Stock is then listed or admitted to trading, (ii) if no such reported sale took place on such date, the average of the closing bid and asked prices on such exchange on such date, or (iii) if neither (i) nor (ii) applies, the last reported sale price on the next preceding date on which trading took place, or (b) if the Common Stock is then traded in the over-the-counter market, the average of the closing bid and asked prices on such date, as reported by The Wall Street Journal or other appropriate publication selected by the Committee, for the over-the-counter market.

"Incentive Stock Option" means an Option complying with the requirements of Section 422 of the Code or any successor provision and any regulations thereunder.

"Option" means a right to purchase shares of Common Stock and may be an Incentive Stock Option if specified by the Committee.

"Participant" means a person selected by the Committee to receive an Award under the Plan.

"Performance Goals" means, in the case of Awards intended to satisfy the requirements for "performance-based compensation" within the meaning of Section 162(m) of the Code, one or more objective performance goals established by the Committee, based on one or more of the following criteria: revenue; revenue growth; sales; expenses; margins; net income; earnings or earnings per share; cash flow; stock price; shareholder return; return on investment; return on invested capital, assets, or equity; profit before or after tax; operating profit; operating margin; return on research and development investment; market capitalization; quality improvements; market share; cycle time reductions; customer satisfaction measures; strategic positioning or marketing programs; market penetration or expansion; business / information systems improvements; expense management; infrastructure support programs; human resource programs; customer programs; technology development programs; goals relating to acquisitions or divestitures, or any combination of the foregoing, including without limitation goals based on any of such measures relative to peer groups or market indices, and may be particular to a Participant or may be based, in whole or in part, on the

performance of the division, department, line of business, subsidiary, or other business unit, whether or not legally constituted, in which the Participant works or on the performance of the Company generally.

"Performance Period" means any period of service of at least one year designated by the Committee as applicable to an Award intended to satisfy the requirements for "performance-based compensation."

"Reporting Person" means a person subject to Section 16 of the Exchange Act.

"Restricted Period" means any period during which an Award or any part thereof may be forfeited to the Company.

"Restricted Stock" means shares of Common Stock that are subject to forfeiture to the Company.

"Restricted Stock Unit" means the right, subject to forfeiture, to receive the value of a share of Common Stock in the future, payable in the form of cash, Common Stock or other securities of the Company, Awards or other property, and is an unfunded and unsecured obligation of the Company.

"Stock Appreciation Right" means the right to receive any excess in value of shares of Common Stock over the exercise price of such right.

"Stock Equivalent" means the right to receive payment from the Company based in whole or in part on the value of the Common Stock, payable in the form of cash, Common Stock or other securities of the Company, Awards or other property, and may include without limitation phantom stock, performance units, and Stock Appreciation Rights.

"Termination of employment or other service of a Participant" means the voluntary or involuntary termination of a Participant's employment with the Company or an Affiliate for any reason, including death, disability, retirement or as the result of the divestiture of the Participant's employer or any similar transaction in which the Participant's employer ceases to be the Company or one of its Affiliates. Whether entering military or other government service shall constitute "termination of employment or other service," or whether a "termination of employment or other service" shall occur as a result of disability, shall be determined in each case by the Committee in its sole discretion before or after the grant of the respective Award. In the case of a member of the Board or consultant who is not an employee of the Company or an Affiliate, "termination of employment or other service" shall mean the voluntary or involuntary termination of Board service or the consulting relationship, as the case may be, for any reason.

"Transferable for value" means a transfer on terms that would prevent the Company from relying on Securities and Exchange Commission Form S-8 (or any successor form) with respect to the issuance of the Common Stock underlying the respective Award.

8. *Miscellaneous.*

(a) *No Rights with Respect to Service.* No person shall have any claim or right hereunder to be granted an Award. Neither the adoption, maintenance, or operation of the Plan nor any Award hereunder shall confer upon any person any right with respect to the continuance of his or her employment by or other service with the Company or any Affiliate nor shall they interfere with the rights of the Company or any Affiliate to terminate or otherwise change the terms of such service at any time, including, without limitation, the right to promote, demote or otherwise re-assign any person from one position to another within the Company or any Affiliate. Unless the Committee otherwise provides in any case, the service of a Participant with an Affiliate shall be deemed to terminate for purposes of the Plan when such Affiliate ceases to be an Affiliate of the Company.

(b) *No Rights as Stockholder.* Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be issued under the Plan until he or she becomes the holder thereof. A Participant to whom Common Stock is awarded will be considered the holder of such Common Stock at the time of the Award, except as otherwise provided in the applicable Award.

(c) *Amendment of Plan.* The Board may amend, suspend or terminate the Plan or any portion thereof at any time, subject to such stockholder approval as the Board determines to be necessary or advisable to comply with any tax or regulatory requirement.

2015 Annual Meeting Admission Ticket

2015 Annual Meeting of
Axcelis Technologies, Inc. Stockholders
Wednesday, May 13, 2015, 10:30 am EST
To be held at the offices of
Locke Lord LLP
111 Huntington Avenue
Boston, MA 02199-7613

Upon arrival, please present this admission ticket
and photo identification at the registration desk.

Directions to the offices of Locke Lord LLP at 111 Huntington Avenue, Boston, MA can be found at www.lockelord.com under the Offices/Boston tab. Stockholders should present themselves at the office's main reception on the 20th floor.

▼ IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼



Proxy — Axcelis Technologies, Inc.

Notice of 2015 Annual Meeting of Stockholders

To be held at the offices of Locke Lord LLP
111 Huntington Avenue, Boston, MA 02199-7613
Proxy Solicited by Board of Directors for Annual Meeting — Wednesday, May 13, 2015

Mary G. Puma, Kevin J. Brewer, Lynnette C. Fallon, or any of them, each with the power of substitution, are hereby authorized to represent and vote the shares of the undersigned, with all the powers which the undersigned would possess if personally present, at the Annual Meeting of Stockholders of Axcelis Technologies, Inc. to be held on May 13, 2015 or at any postponement or adjournment thereof.

Shares represented by this proxy will be voted by the Proxies as directed by the stockholder. If no such directions are indicated, the Proxies will have authority to vote FOR all nominees, FOR Proposals 2, 3 and 4.

In their discretion, the Proxies are authorized to vote upon such other business as may properly come before the meeting.

(Items to be voted appear on reverse side.)