



**NOTICE OF ANNUAL MEETING OF STOCKHOLDERS  
to be Held May 16, 2018**

The 2018 annual meeting of the stockholders of Axcelis Technologies, Inc., a Delaware corporation, will be held at the offices of the Company at 108 Cherry Hill Drive, Beverly, Massachusetts, at 12:30 p.m. on Wednesday, May 16, 2018 for the following purposes:

1. To elect as directors eight nominees to serve until the 2019 annual meeting of stockholders, with the Axcelis Board of Directors' recommended director candidates named in the attached proxy statement.
2. To ratify, by an advisory vote, the appointment of our independent registered public accounting firm to audit our financial statements for the year ending December 31, 2018.
3. To approve, by an advisory vote, the 2017 compensation of our named executive officers.
4. 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.

Only stockholders of record at the close of business on March 19, 2018 will be entitled to vote at the annual meeting or at any adjournment.

By order of the Board of Directors,

Dated: March 28, 2018

Lynnette C. Fallon, *Secretary*

***Stockholders should bring identification and, after checking in with the Security Desk in the building lobby, they will be directed to the meeting room***

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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 2018 annual meeting of stockholders to be held on Wednesday, May 16, 2018 and at any adjournment of the meeting. This proxy statement and the accompanying proxy card are first being sent or given to stockholders of Axcelis on or about March 28, 2018. The meeting will be held at the offices of the Company at 108 Cherry Hill Drive, Beverly, Massachusetts. Stockholders should bring identification and, after checking in with the Security Desk in the building lobby, they will be directed to the meeting room.

**Important Notice Regarding the Availability of Proxy Materials for the Stockholder Meeting to Be Held on May 16, 2018:** This proxy statement and our Annual Report to Stockholders are available on our website at: [www.axcelis.com/proxy.html](http://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 19, 2018. On that date, there were 32,134,166 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 proxy card or voting instruction form or (B) follow the instructions on the 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 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 proxy card or voting instruction form to ensure that your shares are represented at the meeting. If you attend the meeting, you can 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 seven directors whose current terms end in 2018 and the election of a new director nominee; an advisory vote to ratify the selection of independent auditors of the Company; and an advisory vote on our 2017 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 eight nominees as directors.	Each nominee must receive a plurality of the votes cast.	<b>FOR ALL</b> of the Axcelis Board-recommended nominees named in this proxy statement and on the proxy card
Ratification of the appointment of our independent registered public accounting firm (our "independent auditors") to audit our financial statements for 2018.	This non-binding proposal will be considered approved if more votes are cast in favor than against.	<b>FOR</b> ratification
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.	<b>FOR</b> approval

**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. Brokers will have voting discretion for shares registered in their own name on the proposal to ratify the appointment of our independent auditors, but not in the election of directors or the other proposal. 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. **Your broker, bank, or other nominee will only be able to vote your shares with respect to the proposals at the annual meeting (other than the ratification of the auditor appointment) if you have instructed them how to vote.** Your broker, bank, or other nominee has enclosed a 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 voting instruction form. Please return your completed 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, and the advisory vote on 2017 executive compensation, we do not know of any other proposals that may be presented at the 2018 annual meeting. If another matter is properly presented for consideration at the meeting, the persons named in the accompanying 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. 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](http://www.axcelis.com).

## SHARE OWNERSHIP OF 5% STOCKHOLDERS

The following table shows the amount of our common stock beneficially owned as of December 31, 2017 by persons known by us to own more than 5% of our common stock.

Beneficial Owner (1)	Shares Owned	Percent of Class
<b>Wellington Management Group LLP (2)</b> 280 Congress Street, Boston, MA 02210	4,032,234	12.6%
<b>BlackRock Inc. (3)</b> 55 East 52 <sup>nd</sup> Street, New York, NY 10055	3,914,998	12.2%
<b>PRIMECAP Management Company (4)</b> 225 South Lake Ave., #400, Pasadena, CA 91101	3,038,200	9.5%
<b>The Vanguard Group (5)</b> 100 Vanguard Blvd., Malvern, PA 19355	2,010,418	6.3%
<b>Dimensional Fund Advisors LP (6)</b> Building One, 6300 Bee Cave Road, Austin, TX 78746	1,829,605	5.7%
<b>Senvest Management, LLC and Richard Mashaal (7)</b> 540 Madison Avenue, 32nd Floor, New York, NY 10022	1,823,608	5.7%

- (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, 2017 (32,032,417 shares).
- (2) Based on a Schedule 13G filed with the Securities and Exchange Commission (the "SEC") in January 2018 reporting on ownership as of December 29, 2017. This filing states that the reported shares are owned of record by clients of one or more investment advisors identified in the filing, which companies are directly or indirectly owned by Wellington Management Group LLP. The report states that each of Wellington Management Group LLP, Wellington Group Holdings LLP and Wellington Investment Advisors Holdings LLP have shared dispositive power over the shares reported in the table and shared voting power with respect to 3,278,072 shares. In addition, the report states that Wellington Management Company LLP is an investment adviser who holds shared dispositive power with respect to 3,722,613 shares and shared voting power with respect to 3,106,058 shares.
- (3) Based on a Schedule 13G/A filed with the SEC in January 2018 reporting on ownership as of December 31, 2017. 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 3,854,081 shares and sole dispositive power of all the shares reported in the table.
- (4) Based on a Schedule 13G/A filed with the SEC in January 2018 reporting on ownership as of December 31, 2017. 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 2,639,500 shares and sole dispositive power over all of the shares reported in the table.
- (5) Based on a Schedule 13G filed with the SEC in February 2018 reporting on ownership as of December 31, 2017. This filing reports on beneficial ownership of The Vanguard Group. The report states that The Vanguard Group has sole voting power over 59,022 shares, shared voting power over 2,200 shares, sole dispositive power over 1,952,171 shares and shared dispositive power over 58,247 shares.
- (6) Based on a Schedule 13G/A filed with the SEC in February 2018 reporting on ownership as of December 31, 2017. This filing states that Dimensional Fund Advisors LP is a registered investment

adviser. According to the Schedule 13G, Dimensional Fund Advisors LP has sole voting power over 1,725,613 shares and sole dispositive power over all of the shares reported in the table.

- (7) Based on a Schedule 13G/A filed with the SEC in February 2018 reporting on ownership as of December 31, 2017. This filing reports on beneficial ownership of Senvest Management, LLC (“Senvest”), a registered investment adviser, and Richard Mashaal, the managing member of Senvest. It states that the shares are owned by two funds managed by Senvest, one of which, Senvest Master Fund, LP, has the right to receive or to direct the receipt of dividends from, or the proceeds from the sale of, more than 5% of our common stock, and that both Senvest and Mr. Mashaal have shared voting and shared dispositive power over 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 19, 2018 (the record date for the 2018 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 as of March 19, 2018	Shares Subject to Exercisable Rights to Acquire as of May 18, 2018 (4)	Total Shares Beneficially Owned	Percent of Class
<b><i>Non-Executive Directors</i></b>				
Richard J. Faubert	18,064	2,813	20,877	*
R. John Fletcher	40,235	65,000	105,235	*
Arthur L. George, Jr.	33,876	10,000	43,876	*
Joseph P. Keithley	21,439	—	21,439	*
John T. Kurtzweil	20,864	2,813	23,677	*
Patrick H. Nettles	31,361	65,000	96,361	*
Thomas St. Dennis	21,064	2,813	23,877	*
<b><i>Named Executive Officers</i></b>				
Mary G. Puma (2)	140,423	322,656	463,079	1.43%
Kevin J. Brewer	19,223	17,657	36,880	*
William Bintz	18,158	13,864	32,022	*
John E. Aldeborgh	12,530	79,489	92,019	*
Lynnette C. Fallon	29,448	60,867	90,315	*
<b><i>All current Executive Officers and Directors as a Group (14 persons) (3)</i></b>				
	426,653	659,860	1,086,513	3.31%

\* 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 18, 2018 (60 days after March 19, 2018) 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 19, 2018 (32,134,166 shares), plus any shares that person could acquire upon the exercise of any options or other rights on or before May 18, 2018. None of the shares owned or rights to acquire shares are held in a margin account or subject to a pledge.

(2) Ms. Puma's ownership includes 5,000 shares owned by her husband.

- (3) Includes shares owned and shares issuable on restricted stock units and options vesting on or before May 18, 2018 which are held by the directors and current named executive officers and two other executive officers holding 19,968 shares (including 3,125 held by an officer's spouse) and 16,889 shares issuable on on restricted stock units and options vesting on or before May 18, 2018.
- (4) The shares subject to exercisable rights to acquire as of May 18, 2018 include, for the executive officers, shares issuable on restricted stock units vesting in May 2018, assuming continuation of employment. A portion of these vesting shares will be withheld to cover payroll taxes on the value of the vesting shares, which have not been subtracted from the amounts in this table.

## STOCKHOLDER ENGAGEMENT

### 2017 Annual Meeting Vote Results

At our 2017 annual meeting, 98.6% of votes cast were FOR approval of the advisory vote on the Company's 2016 executive compensation (commonly referred to as "Say-on-Pay"). This was slightly higher than the approval of the Say-on-Pay vote regarding the Company's 2015 executive compensation. In addition, in 2017, the average vote in favor of the election of our Board nominees was 99.6%, consistent with the vote in 2017. We believe that these voting results reflect stockholder support for our business results and our executive compensation decisions. We have also worked to ensure that we align with best practices in corporate governance, and that our executive compensation programs are consistent with peers and other benchmarks.

### 2017 Stockholder Outreach

We rely on our regular disclosure documents and routine investor relations to ensure that our stockholders understand our performance, our potential, our governance policies and compensation practices.

***Routine Investor Relations.*** We routinely engage with our stockholders to discuss our business, performance, and strategy. These discussions sometimes also cover Board composition, governance policies and executive compensation. Our 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 roadshows arranged by investment analysts and others supporting our stock; one-on-one meetings in connection with conferences, roadshows or otherwise; and routine phone and email conversations with stockholders.

During 2017, in addition to our routine quarterly earnings calls and follow up meetings, Axcelis presented and held one-on-one meetings at eight investor conferences, held in New York City, San Francisco, Los Angeles, Boca Raton and Minneapolis. We also conducted five non-deal roadshows with five different equity analysts, visiting a total of 32 investment firms in New York, San Francisco, Toronto, Dallas, Chicago, Cleveland, Kansas City, St. Louis and Detroit. We also hosted an investor bus tour at our Beverly, MA headquarters with an equity analyst and four investment firms.

***Financial Performance and Governance.*** In our discussions with our investors and analysts, it is clear that our stockholders are primarily interested in our financial performance. Governance policies and executive compensation are also important. Below we summarize our position on these key issues during 2017:

- ***Expanded Purion Customer Base.*** The strong semiconductor market in 2017 provided the backdrop for additional market share growth for the Company. Systems revenue grew by 89% from 2016 to 2017, with Purion ion implanters representing 87% of 2017 systems revenue. During the year, Axcelis shipped Purion systems to 18 new customer fabs. Seven of these sites represent new Purion customers, and the other eleven locations are first in fab Purion placements by existing Purion customers.

- *Improved Revenues and Gross Margin Performance.* For the full year 2017, the Company reported revenue of \$410.6 million, compared with \$267.0 million for the full year 2016, an increase of 54%. Full year 2017 gross margin was 36.6% compared to 37.3% in 2016. 2017 gross margin was impacted by a \$6.2 million excess inventory reserve charge taken on legacy tools and parts in the fourth quarter of 2017, which reduced full year 2017 gross margin by 1.5 percentage points. Without the impact of this excess inventory charge, gross margin in 2017 would have been at the Company’s highest annual level in 11 years.
- *Commitment to Governance Best Practices.* We continue to monitor best practices in corporate governance, and make changes to our policies and practices where appropriate. Key governance policies are outlined below under “*Corporate Governance—Governance Policies.*”
- *Benchmarked Compensation Programs.* In 2017, our Compensation Committee worked with Pearl Meyer & Partners, an independent compensation consultant (“Pearl Meyer”), to review the composition of our peer group and to develop executive compensation programs in line with the peer group and our performance. The Nominating and Governance Committee also engaged Pearl Meyer in 2017 to benchmark our independent director compensation, and modifications to Committee chair retainers were made effective in 2018. See “*Proposal 1: Election of Directors—Compensation of Directors,*” and “*Executive Compensation—2017 Compensation Discussion and Analysis*” below.

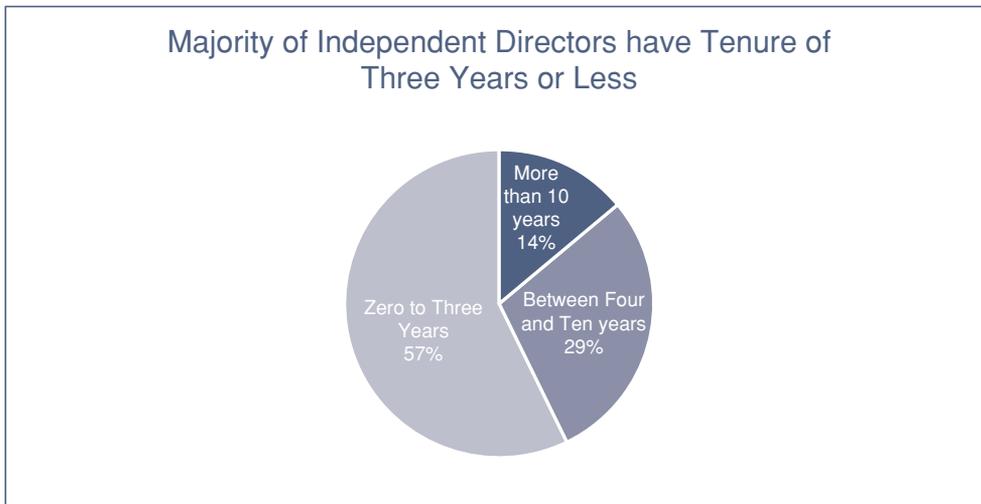
***Outcome of Outreach Efforts.*** We found both our direct interaction with investors and third party input extremely informative and valuable, and we are very appreciative of the time that our investors took to speak with us.

## **PROPOSAL 1: ELECTION OF DIRECTORS**

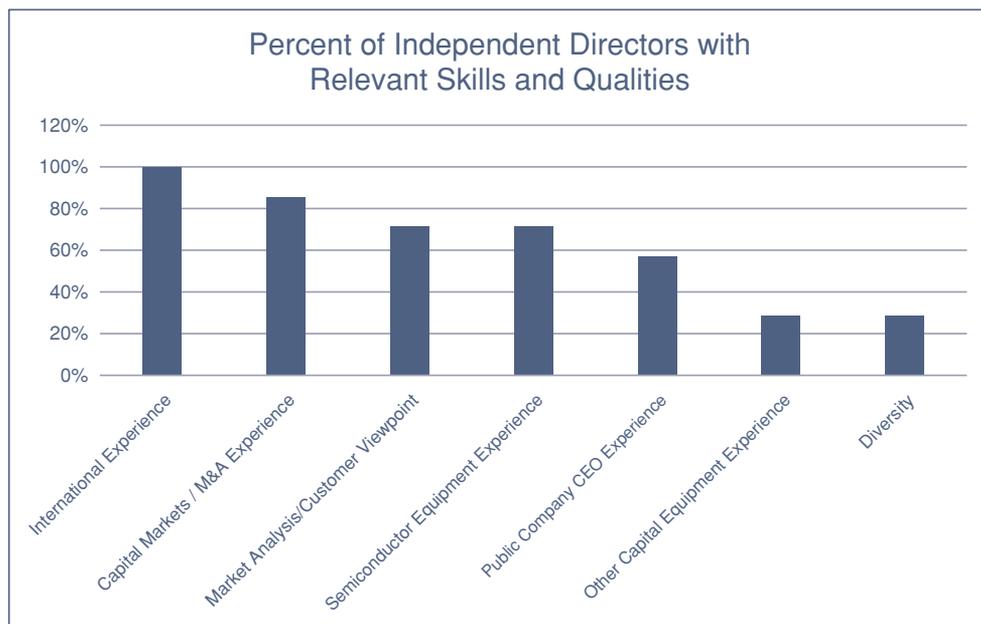
Our Board of Directors has fixed the number of directors at eight effective as of the 2018 annual meeting. The number of directors is subject to increase or decrease by action of the Board. Our Board of Directors is nominating all of the current directors for re-election at the 2018 annual meeting, except for Patrick H. Nettles, who is retiring as Chairman of our Board in accordance with our governance policy regarding individuals turning 75 during the term of office. In addition, the Board has nominated Tzu-Yin Chiu for his first term on the Board of Directors. Each director and nominee will, if elected, hold office for a term of one year until our annual meeting in 2019 and until the director's successor is 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.

The Board recommends a vote FOR each of the eight Axcelis nominees. These 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 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 seven Axcelis independent director nominees is less than five years:



Our independent director nominees bring a strong mix of relevant experience:



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:

## 2018 NOMINEES FOR ELECTION TO THE BOARD OF DIRECTORS

### **Tzu-Yin (“TY”) Chiu: new nominee, age 61**

#### ***Business Experience and Other Directorships***

Dr. Tzu-Yin Chiu is the non-executive Vice Chairman of Semiconductor Manufacturing International Corporation (“SMIC”), one of the leading semiconductor foundries in the world and the largest and most advanced foundry in mainland China. Dr. Chiu assumed his current position on his retirement as SMIC’s CEO in May 2017. Dr. Chiu had been CEO, and has served on the Board of SMIC, since August 2011. From 2005 to 2009, Dr. Chiu worked at other chip manufacturers in Asia, having first worked at SMIC from 2001 to 2005 as Senior Vice President, Operations. Prior to joining SMIC, Dr. Chiu was a Senior Director Fab Operations at Taiwan Semiconductor Manufacturing Company Limited. In addition, Dr. Chiu has served as Vice Council Chairman of China Semiconductor Industry Association (CSIA) and a board member of Global Semiconductor Alliance (GSA). He is also a member of the Engineering Advisory Board of University of California, Berkeley.

#### ***Experience, Qualifications and Attributes***

Dr. Chiu has over 30 years’ experience in the semiconductor industry and a track record of managing successful semiconductor manufacturing companies at the executive level. Dr. Chiu’s expertise spans technology research, business development, operations and corporate management. His familiarity with the Chinese semiconductor market will be particularly valuable to Axcelis as that market grows. It is expected that Dr. Chiu will serve on the Technology and Product Development Committee and the Nominating and Governance Committee, if elected.

**Richard J. Faubert: director since 2015, age 70**

***Business Experience and Other Directorships***

Richard J. Faubert retired as President, Chief Executive Officer and Chairman of AmberWave Systems Corporation, a semiconductor technology company, in 2010, where he had served since 2003. From 1998 through 2002, Mr. Faubert served as President, Chief Executive Officer and Director of SpeedFam-IPEC, Inc., a manufacturer of semiconductor equipment. Upon the sale of SpeedFam-IPEC to Novellus Systems, Inc., a semiconductor capital equipment manufacturer, Mr. Faubert served as Executive Vice President of Novellus Systems until April 2003. Prior to his employment with SpeedFam-IPEC, Mr. Faubert held executive and management positions at Tektronix, Inc., a test, measurement, and monitoring company, and GenRad, Inc., an electronics testing and manufacturing company. Mr. Faubert served on the Board of Directors of Electro Scientific Industries, Inc., a provider of laser-based manufacturing solutions for the microtechnology industry, from 2003 to 2015, and on the Board of Directors of RadiSys Corporation, a provider of wireless infrastructure solutions for telecom, aerospace, and defense applications, from 1993 until 2012. Mr. Faubert also served on the North American Advisory Board of SEMI, a global industry association serving the manufacturing supply chain for the micro- and nano-electronics industries, from 2001 to 2011.

***Experience, Qualifications and Attributes***

Mr. Faubert's qualifications to serve as a director include his extensive technology leadership experience in the semiconductor-capital equipment industry. He also brings significant manufacturing, engineering, research and development, business and operations experience in a high technology environment. Mr. Faubert has served on the Nominating and Governance Committee and the Technology and Product Development Committee since his election to the Board in May 2015. The Board highly values his contributions in these roles.

#### **R. John Fletcher: director since 2003, age 72**

##### ***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 serves as a director of MRI Interventions, Inc., a maker of medical devices for minimally invasive surgical procedures. Mr. Fletcher also served as a director of The Spectranetics Corporation, a manufacturer of single-use medical devices used in cardiovascular procedures, until its sale in August 2017.

##### ***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 (and as Committee Chairman since May 2015), and on the Audit Committee since February 2017 (having previously served on the Audit Committee from April 2004 to May 2014). Mr. Fletcher served on the Technology and Product Committee from May 2014 until February 2017. The Board highly values his contributions in these roles.

#### **Arthur L. George, Jr.: director since 2014, age 56**

##### ***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 and Product Development Committee since May 2014. He has served as the Chairman of the Technology and Product Development Committee since August 2017. The Board highly values Mr. George's contributions in these roles.

**Joseph P. Keithley: director since 2011, age 69**

***Business Experience and Other Directorships***

Mr. Keithley is the retired Chairman and CEO of Keithley Instruments, Inc., a provider of measurement solutions to the semiconductor, fiber optics, telecommunications and electronics industries, having served as Chairman from 1991 to 2010, as Chief Executive Officer from 1993 to 2010 and as President from 1994 to 2010. Mr. Keithley serves as a director of Nordson Corporation, of which he was the non-executive Chairman of the Board from 2010 until 2018. Nordson Corporation manufactures precision dispensing equipment for applying industrial liquid and powder coatings, adhesives, and sealants. 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 served as a member of the Technology and Product Development Committee until May 2015, at which time he joined the Nominating and Governance Committee as chair. The Board highly values his contributions in these roles.

**John T. Kurtzweil: director since 2015, age 61**

***Business Experience and Other Directorships***

Mr. Kurtzweil is the Chief Financial Officer of Akoustis, Technologies, Inc., an RF filter semiconductor company, a position he has held since 2017. From 2015 to March 2017, Mr. Kurtzweil was VP Finance of Cree, Inc., a provider of light emitting diode, lighting, and semiconductor products, and Chief Financial Officer of its subsidiary, Wolfspeed, a Cree Company. He was an independent consultant from October 2014 to June 2015. From 2012 until 2014, Mr. Kurtzweil served as Senior Vice President, Chief Financial Officer and Special Advisor to the CEO of Extreme Networks, Inc., a provider of open networking innovations. From 2006 to 2012, Mr. Kurtzweil served as Executive Vice President, Finance and as Chief Financial Officer and Treasurer of Cree, Inc. From 2004 to 2006, Mr. Kurtzweil was Senior Vice President and Chief Financial Officer at Cirrus Logic, Inc., a fabless semiconductor company. Mr. Kurtzweil served as a director of Akoustis from January 2017 to July 2017 and for Meru Networks, Inc. from May 2015 to July 2015.

***Experience, Qualifications and Attributes***

Mr. Kurtzweil brings to the Board significant senior executive leadership experience, including nineteen years as chief financial officer of publicly traded technology companies and placing an aggregate of \$1.9 billion in equity and debt instruments. His technology industry experience includes several M&A transactions and when combined with his treasury experience, gives him a valuable perspective as a director. His qualifications to serve as a director also include that he is a certified public accountant and certified management accountant, his financial market experience, training through the Stanford Directors College, active membership with National Association of Corporate Directors and his qualifications as an audit committee financial expert. Mr. Kurtzweil has served on the Audit Committee (and as Chairman since February 2017) and on the Compensation Committee since his election to the Board in May 2015. The Board highly values his contributions in these roles.

**Mary G. Puma: director since 2000, age 60**

***Business Experience and Other Directorships***

Ms. Puma is Axcelis' Chief Executive Officer and President. Ms. Puma also served as Chairman of the Board from 2005 to 2015. Prior to becoming Chief Executive Officer in 2002, Ms. Puma served as President and Chief Operating Officer from 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 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 global industry association serving the manufacturing supply chain for the micro- and nano-electronics industries.

***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: director since 2015, age 64**

***Business Experience and Other Directorships***

Thomas St. Dennis is the non-executive Chairman of FormFactor, Inc., a leading provider of semiconductor wafer test technologies and expertise, a position he assumed in 2016. Prior to this, Mr. St. Dennis served as FormFactor's Executive Chairman beginning in 2013, and as its Chief Executive Officer from 2010 to 2014. Mr. St. Dennis 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.

Mr. St. Dennis currently serves on the boards of directors of FormFactor and Veeco Instruments Inc., a company that designs, manufactures and markets thin film equipment for semiconductor processing applications.

Mr. St. Dennis previously served as a director of Mattson Technology, Inc., a supplier of dry strip and rapid thermal processing equipment to the semiconductor industry from 2013 to 2016.

***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.

Mr. St. Dennis has served on the Nominating and Governance Committee and the Technology and Product Development Committee since his election to the Board in May 2015. The Board highly values his contributions in these roles.

## 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 2017, who are nominated for re-election in 2018, and Mr. Chiu, who is nominated for election in 2018, 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 in 2017 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. Until March 2017, Mr. Kurtzweil served as a vice president of Cree, Inc., a customer of the Company. The Company's transactions with Cree, Inc. are carried on in an arms-length commercial relationship. The amount received from Cree, Inc. by the Company in any of the past three fiscal years was below the total revenue threshold in the Nasdaq independence standards (that is, the greater of \$200,000 or 5% of Axcelis' consolidated gross annual revenues). There is no reason to conclude that the relationship interfered with the exercise of Mr. Kurtzweil's independent judgment in carrying out the responsibilities of a director. Accordingly, this relationship was not determined by the Board to impair the independence of Mr. Kurtzweil. See also "*Corporate Governance—Certain Relationships and Related Transactions—2017 Related Party Disclosures.*"

The Board also determined that the members of the Audit and Compensation Committees meet additional independence requirements under Securities and Exchange Commission ("SEC") rules, Internal Revenue Code ("IRC") rules and additional Nasdaq rules.

Our Board of Directors held four meetings during 2017. Independent directors have regularly scheduled executive sessions at which only independent directors are present. The average rate of attendance at 2017 Board meetings, and of those committees of which a director is a member, was 98.8%. All Board members are expected to attend the annual meeting of stockholders, subject to special circumstances. All current Board members attended the annual meeting in 2017.

### Board of Directors Leadership Structure

Mr. Nettles has been Chairman of the Board of Directors since May 2015. He is an Independent Director (as defined in the listing standards for the Nasdaq Stock Market), as required for the Chairman position by our Governance Guidelines. Our Governance Guidelines enumerate the responsibilities of the Chairman. We believe this leadership structure serves the Company and our stockholders well by providing independent leadership of the Board of Directors. However, the Board could modify our Governance Guidelines in the future to permit a non-independent Chairman, if they felt that was in the best interests of our stockholders. In that case, our policy has been to have an independent Lead Director who assumes the primary duties of the Chairman of the Board.

Mr. Nettles will retire from the Board at the 2018 annual meeting, and a new independent Chairman will be designated by the Board of Directors following the meeting.

### **Chairman's Responsibility for an Annual Evaluation of the CEO**

A critical responsibility of the Chairman of the Board under the Company's Governance Guidelines is to lead the Board in conducting an annual evaluation of the Chief Executive Officer (the "CEO"). The process for the annual CEO evaluation may be modified from time to time by the Nominating and Governance Committee with the consent of the Chairman, but currently involves the following steps:

- Prior to the last Board meeting of the fiscal year, the CEO submits a self-evaluation to the Chairman;
- The Chairman discusses the self-evaluation with the CEO and solicits input from other Directors at the last Board meeting of the fiscal year, and also in one-on-one conversations;
- The Chairman consolidates the CEO self-evaluation with Board feedback for report at the first Board meeting of the fiscal year; and
- The Chairman communicates the Board's evaluation to the Chief Executive Officer.

Our Governance Guidelines provide that the CEO evaluation should consider aspects of corporate performance, including progress against strategic goals and the capacity of the Company to achieve future goals. The evaluation should use a combination of objective and subjective criteria.

### **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.

**2017 Director Cash Compensation.** Board cash compensation in effect in 2017 was fixed in May 2015 by the Board of Directors on the recommendation of the Nominating and Governance Committee, following a benchmark study by Pearl Meyer. Beginning in July 2015, cash

compensation for non-employee directors has been based solely on retainers in accordance with the following schedule:

**Annual Cash Retainers, paid quarterly in advance**

***Board Member Retainer*** \$50,000

***Independent Chairman Premium*** \$20,000

***Committee Chairmen Retainers***

Audit Committee Chairman \$15,000

Compensation Committee Chairman \$10,000

Nominating and Governance Committee Chairman \$7,500

Technology and Product Development Committee Chairman \$7,500

**Other Committee Member Retainers**

Audit Committee Member \$10,000

Compensation Committee Member \$7,500

Nominating and Governance Committee Member \$5,000

Technology and Product Development Committee Member \$5,000

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

In November 2017, the Board approved increases to the Committee Chair retainers, based on benchmarking work by Pearl Meyer. Beginning in 2018, the Audit Committee Chairman retainer will be \$20,000, the Compensation Committee Chairman retainer will be \$15,000, and the Chairman retainers for both the Nominating and Governance Committee and the Technology and Product Development Committee will be \$10,000. The Nominating and Governance Committee also agreed that the 2018 annual equity grant to independent directors should have a value at market median, which was \$130,000 based on the November 2017 Pearl Meyer report.

The Board of Directors may, from time to time, form committees in addition to the Audit, Compensation, Nominating and Governance and Technology and Product Development Committees and set compensation for service on such additional committees.

**2017 Equity Awards.** On February 15, 2017, upon recommendation of the Nominating and Governance Committee and the Compensation Committee, the full Board of Directors approved the grant to each non-employee director, effective May 17, 2017, of restricted stock units (“RSUs”) valued at \$73,000. This amount was 81% of the median equity grant to independent

directors at peer companies, as reported by Pearl Meyer in 2015 (at that time, our most recent report on Board compensation). As with the 2017 executive and key employee equity grants, the grants were sized below reported medians in order to control compensation expense for the Company. The number of units was determined by dividing \$73,000 by a 30-day average closing price of the Company's common stock over a period ending May 12, 2017, which was \$19.20. In accordance with this formula, each non-employee director received a restricted stock unit exercisable for 3,802 shares of common stock. Each RSU grant had a value of \$78,892 using the grant date closing price of \$20.75. These RSU grants became fully vested on November 17, 2017 (six months after the date of grant) as each director remained in service on that date. 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 2017:

Name	Fees earned or paid in cash (\$)	Stock awards (\$)(1)(2)(3)	Total (\$)
<b>Richard J. Faubert</b>	\$60,000	\$78,892	\$138,892
<b>R. John Fletcher</b>	\$68,750	\$78,892	\$147,642
<b>Arthur L. George, Jr.</b>	\$63,125	\$78,892	\$142,017
<b>Joseph P. Keithley</b>	\$67,500	\$78,892	\$146,392
<b>John T. Kurtzweil</b>	\$71,250	\$78,892	\$150,142
<b>Barbara J. Lundberg(4)</b>	\$17,500	\$ —	\$ 17,500
<b>Patrick H. Nettles</b>	\$84,375	\$78,892	\$163,267
<b>Thomas St. Dennis</b>	\$60,000	\$78,892	\$138,892

- (1) The amount shown represents the grant date fair value of the equity awards received by the director in 2017 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 2017 Form 10-K filed with the SEC.
- (2) The stock awards reflect the grant date fair value of 3,802 RSUs to each of non-employee directors on May 17, 2017. These awards vested as to 100% of the RSUs on November 17, 2017. The only unvested stock awards held by non-employee directors at December 31, 2017 were 5,625 unvested RSUs held by each of Messrs. Faubert, Kurtzweil and St. Dennis, and 2,814 unvested RSUs held by Mr. George.

- (3) None of the non-employee directors received stock option grants in 2017. As of December 31, 2017, non-employee directors in office held the following total stock options, all of which were fully vested and had exercise prices as set forth below:

	Aggregate # of shares subject to outstanding options	Lowest and highest exercise price
R. John Fletcher	65,000	\$1.76/\$7.96
Arthur L. George, Jr.	10,000	\$7.20/\$7.20
Patrick H. Nettles	65,000	\$1.76/\$7.96

- (4) Ms. Lundberg died in January 2017 after receiving her retainer for the first quarter of 2017.

## BOARD COMMITTEES

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

Audit Committee	Compensation Committee	Nominating and Governance Committee	Technology and Product Development Committee
<ul style="list-style-type: none"> <li>• John T. Kurtzweil, Chairman</li> <li>• Joseph P. Keithley</li> <li>• R. John Fletcher</li> </ul>	<ul style="list-style-type: none"> <li>• R. John Fletcher, Chairman</li> <li>• Patrick H. Nettles</li> <li>• Arthur L. George, Jr.</li> <li>• John T. Kurtzweil</li> </ul>	<ul style="list-style-type: none"> <li>• Joseph P. Keithley, Chairman</li> <li>• Richard J. Faubert</li> <li>• Thomas St. Dennis</li> </ul>	<ul style="list-style-type: none"> <li>• Arthur L. George, Jr., Chairman</li> <li>• Richard J. Faubert</li> <li>• Patrick H. Nettles</li> <li>• Thomas St. Dennis</li> </ul>

In August 2017, Mr. George replaced Mr. Nettles as Chairman of the Technology and Product Development Committee. Committee membership is reviewed by the Board annually after each annual meeting. Mr. Nettles will retire from the Board at the 2018 annual meeting, and it is anticipated that Mr. Chiu will be elected to the Board at that time, which will be taken into account in the Board's Committee composition determinations.

### 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 Ethics policy. The Audit Committee's charter and the Company's Ethics policy are both available on our website at [www.axcelis.com](http://www.axcelis.com). During 2017, the Audit Committee consisted of Mr. Kurtzweil (Chairman), Mr. Keithley and Mr. Fletcher.

The Board of Directors determined that each of Messrs. Keithley, Kurtzweil and Fletcher were 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 2017, see the "2017 Audit Committee Report" below.

## 2017 Audit Committee Report

*Note:* In accordance with an instruction to the SEC regulation under which this Audit Committee report is provided (Regulation S-K, Item 407(d)(3)), this Audit Committee Report shall not be deemed to be “soliciting material,” or to be “filed” with the SEC or subject to certain other SEC provisions, as described in that instruction.

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, August and October of 2017, prior to the release of the financial results for the first, second and third quarters of 2017, respectively, and in February 2018, prior to the release of our 2017 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 12 times during 2017. At all meetings relating to the release of financial results, Axcelis’ Chief Financial Officer and Corporate Controller were present for all or a portion of the meeting, as were our independent auditors. Our General Counsel also participated in all 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.

Under its charter, the Audit Committee has responsibility for recommending to the Board the appointment of the independent auditing firm, which firm will be accountable directly to the Audit Committee, as representative for the stockholders of the Company. In selecting and evaluating an independent auditing firm, the Audit Committee considers the firm’s history with the Company, if any; the firm’s familiarity with the Company’s industry and the significant accounting principles relating to the Company’s business; the firm’s general reputation; and the firm’s estimated fees. Once the firm is appointed, the Audit Committee has the sole authority for the compensation of the firm, as well as the definition of the scope of, and oversight of, the work of the independent auditor. All audit and non-audit fees due the independent auditing firm are pre-approved by the Audit Committee based on the type of service and level of fees. The Audit Committee also provides oversight and input to the selection of the audit engagement partner at the appointed firm.

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 2017. At the 2017 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, 2017 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. The review of these audited financial statements 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 addition, the Committee discussed with the independent auditors the matters required to be discussed by Auditing Standard No. 1301, *Communications with Audit Committees*, as adopted by the Public Company Accounting Oversight Board ("PCAOB"), 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.

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 2017 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,

John T. Kurtzweil, Chairman  
Joseph P. Keithley  
R. John Fletcher

### **Compensation Committee**

During 2017, the Compensation Committee consisted of Messrs. Fletcher (Chairman), George, Kurtzweil and Nettles. 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 2017, the Compensation Committee met five times. The Compensation Committee operates under a written charter, a copy of which is available on our website at [www.axcelis.com](http://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 annual CEO evaluation is considered by the Compensation Committee in the course of its deliberations on the Chief Executive Officer's compensation.

The Compensation Committee meets in the first quarter of each year to review the level of each component of executive compensation, and to establish the goals and targets applicable to the executives' annual cash and equity incentive compensation for the coming year, as well as to determine the results for the year just ended. The Committee's 2017 compensation decisions are described in detail in *"Executive Compensation—2017 Compensation Discussion and Analysis"* below.

To support its decision-making processes, from time to time, the Compensation Committee obtains 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 2017, the Company engaged Pearl Meyer to provide benchmarking and advise related to compensation decisions for executive officers and to review compensation paid to the independent directors. Pearl Meyer did not provide any other services to the Company in 2017. 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. The consultant's invoices are paid by the Company. 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. The Committee delegates to the Chief Executive Officer the authority to make equity grants to employees other than executive officers on commencement of employment or as a bonus award, subject to maximum grant sizes and annual program limits established by the Committee.

For a discussion on the Compensation Committee's decisions relating to executive compensation during 2017, see *"Executive Compensation—2017 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 2017, the Compensation Committee of the Board of Directors consisted of Mr. Fletcher (Chairman), Mr. George, Mr. Kurtzweil and Mr. Nettles. None of these directors has been an officer or employee of Axcelis or had a relationship during 2017 requiring disclosure under Item 404 of Regulation S-K.

### **Nominating and Governance Committee**

During 2017, the Nominating and Governance Committee was comprised of Mr. Keithley (Chairman), Mr. Faubert and Mr. St. Dennis.

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 Guidelines, copies of which are available on our website at [www.axcelis.com](http://www.axcelis.com). The Committee held four meetings in 2017. 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 stockholders or (B) to be appointed by the Board as a director until the next annual meeting of stockholders, 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 stockholder 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 stockholders, 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.

The Nominating and Governance Committee has developed a comprehensive statement of the Company’s governance standards and processes arising from its charter, bylaws and policies, called Governance Guidelines. These were adopted by the Board of Directors in February 2016.

## CORPORATE GOVERNANCE

### Governance Policies

Our Board and committees seek to implement best governance practices, both on general corporate governance matters and on compensation. Key policies are as follows:

#### Corporate Governance: What We Do

**Adhere to High Ethical Standards and Legal Compliance:** Our ethics policy applies to our directors, executive officers and all other employees. This policy promotes ethical actions and legal compliance. We provide employee training on ethics, compliance with the Foreign Corrupt Practices Act, Export Controls regulation, employment laws, and Insider Trading regulation.

**Ensure we have an Independent Chairman of the Board:** Our Governance Guidelines require that the Chairman of the Board be an independent director and specify the responsibilities of that role.

**Ensure Directors and Officers Hold Stock in Axcelis:** Our Stock Ownership Guidelines require that non-employee directors own shares having a value at least equal to three times the amount of the annual base Board retainer (which is currently \$50,000). Our Chief Executive Officer is required to own shares having a value equal to three times her base salary. The other executive officers are required to hold the lesser of 16,250 shares or shares having a value equal to 150% of such officer's base salary. Executive officers are encouraged to retain 50% of any shares received on exercise of options or vesting of whole share awards (after payment of the exercise price and tax withholding), until stock ownership guidelines are met. Directors and executive officers have five years to meet guideline ownership.

**Strong CEO Performance Review Process:** As described above under *“Board of Directors—Chairman’s Responsibility for an Annual Evaluation of the CEO,”* our Governance Guidelines specify the process by which an annual Chief Executive Officer performance review is developed and submitted to the full Board for their consideration, with input from the Chief Executive Officer, the independent Chairman of the Board and other Board members.

#### Corporate Governance: What We Don’t Do

**Fail to Refresh our Board:** Our Governance Guidelines require an annual Board self-evaluation prior to the re-election nomination process. These Guidelines also require Board members to tender their resignation on a change in principal occupation, and if he or she receives a greater number of votes “withheld” in an uncontested election than votes “for” his or her election. Directors who have reached the age of 75, or will reach that age on or before the date of the next annual meeting, will not be nominated for election.

**Allow Directors and Officers to Hedge or Pledge Their Stock Positions:** Our 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 stock. 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.

**Allow Stockholder Rights to be Harmed:** Our charter and bylaws protect all stockholders by requiring advance notice of stockholder proposals, and prohibit stockholders from calling a special meeting, acting by written consent or filing governance litigation outside of Delaware. These provisions ensure that stockholders have notice and an opportunity to vote on all matters properly brought before them, and that claims are heard by sophisticated Delaware courts.

### **Compensation Governance: What We Do**

#### **Align Compensation Annually with Median Pay at Peer Companies and Relevant Survey**

**Data.** Executive officer compensation is benchmarked, at least biennially, to median levels at peer companies and in surveys. We re-evaluate these peers, at least biennially, to ensure they are comparable companies.

**Align Compensation with Company and Individual Performance:** We set compensation with strong pay-for-performance orientation, using both a cash annual incentive plan tied to financial metrics and restricted stock unit grants tied to operational goals. Performance evaluations are obtained and considered in compensation decision-making. Only the Chief Executive Officer has an employment agreement setting a minimum salary and bonus opportunity, with a one-year term.

**Executive Compensation Clawback:** Our policy authorizes the Board to seek recovery of incentive cash and equity compensation that complies with Dodd-Frank and extends beyond the requirements of that law to allow a clawback of incentive compensation in the event of any violation of an agreement with the Company or of any policy of the Company or a voluntary departure to work for a competitor.

**Require Termination of Employment prior to a Change of Control Payout:** Agreements with our executive officers provide for “double trigger” change of control benefits, due only if the employee experiences a qualifying termination of employment.

**Executive Equity Awards Require Multi Year Vesting Unless Performance Vested.** Under our equity incentive plan, equity grants to employees that are solely based on continued employment, service or the passage of time may not vest until the first anniversary of grant, and full vesting may not occur until the fourth anniversary of grant, except for grants received in lieu of cash compensation otherwise due.

**Maintain Compensation Committee Practices that Ensure Independence:** All of the members of the Compensation Committee are determined to be independent, and they have authority to engage an independent consultant of their choice. All compensation decisions involving executive officers are made in executive sessions of the independent directors without management. In addition, the Committee receives feedback from stockholders through an annual Say on Pay vote.

## Compensation Governance: What We Don't Do

**Pick Aspirational Peer Companies or Benchmark above Median Compensation Levels:** Our Compensation Committee avoids these practices and re-evaluates our compensation peer group at least biennially, with the help of an independent compensation consultant chosen by the Compensation Committee Chairman.

**Allow for Unlimited Cash Incentive Payouts or Guaranteed Bonuses:** Payout under our annual cash incentive plan is capped at 200% of target, which insures outperformance reaches our stockholders after a fixed return to executives. We do not provide guaranteed minimum bonuses under any compensation arrangements with executives, other than occasionally for the year in which an executive joins the Company.

**Provide Special Perquisites or Retirement Benefits:** We do not provide any perquisites or retirement benefits to our executive officers that are not generally made available to all of our employees. In 2016, we eliminated a program to reimburse financial or tax planning services up to \$5,500, since it no longer was market-aligned.

**Provide "Single Trigger" Severance Payments or Golden Parachute Arrangements:** We do not provide "single trigger" severance payments due solely on account of the occurrence of a change of control event.

**Provide New Change of Control Tax Gross-Ups (Legacy Tax Gross-Ups are Expiring):** In 2014, the Board adopted a policy that any future change of control agreement with any future executive officer of the Company will not include a reimbursement for the effects of any excise tax due on severance compensation. An executive officer who joined the Company in 2016 was given a new form of change of control agreement without reimbursement for the effects of excise tax on severance compensation. All other executive officers who hold change of control agreements with excise tax indemnification provisions were notified in 2017 that these agreements will not be renewed on expiration of their current terms. As a result, no executive officers will have change of control agreements with excise tax indemnifications after February 2020.

**Re-Price or Buyback Equity Awards:** Our equity plans prohibit repricing of equity awards or cash repurchase of equity awards (except in the case of a corporate transaction).

**Offer Nonqualified Defined Contribution or Other Deferred Compensation Plan.** We do not have any such plans.

Our Governance Guidelines, other policies and our Certificate of Incorporation and Bylaws are posted on the Investors page of our website at [www.axcelis.com](http://www.axcelis.com). Any waivers of our Ethics policy 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. 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. Our Bylaws have been filed with the SEC and are also posted on the Investors page of our website at [www.axcelis.com](http://www.axcelis.com).

If you intend to bring proposed business to the 2019 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 28, 2018 (120 days before the anniversary date of the mailing of this proxy statement). Any such proposal should comply with the requirements of SEC Rule 14a-8.

If you wish to bring business before or propose director nominations at the 2019 annual meeting, you must give written notice to Axcelis between January 16, 2019 and February 15, 2019 (the dates 120 days and 90 days, respectively, before the anniversary of the 2018 annual meeting). These dates assume that the 2019 annual meeting is held not more than 30 days before or 30 days after May 16, 2019. If that is not the case, you must give written notice to Axcelis between the date 120 days before the 2019 annual meeting date and the later of (A) 90 days before the 2019 annual meeting date or (B) the date 10 days after public announcement of the 2019 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 stockholders 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 in accordance with the nomination provisions in our Bylaws, 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 Guidelines. These Governance

Guidelines 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 set forth in the Company's Governance Guidelines;

(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 whether a nominee's regional background contributes to Board diversity that is beneficial to the Company for business reasons. 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 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](http://www.axcelis.com). Nomination 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.

## **2017 Related Party Disclosures**

During 2017, no related person transactions requiring disclosure in the proxy statement were identified or submitted to the Nominating and Governance Committee for approval. As discussed above under *“Board of Directors—Board of Directors Independence and Meetings,”* during a portion of 2017, Mr. Kurtzweil served as a vice president of Cree, Inc., a customer of the Company. This is an arms-length commercial relationship which is not material to the Company or Cree, Inc. The amount paid by Cree to the Company did not exceed \$120,000 in 2017 or in 2016 (although it did in 2015). Mr. Kurtzweil has no direct or indirect material interest in Cree’s payments to the Company or the services and products provided by the Company. Mr. Kurtzweil resigned from his position at Cree, Inc. in March 2017.

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;
- The uncertainties of global economies, including the availability of credit; and
- We are exposed to risks related to cybersecurity threats and incidents, mainly relating to attempts to access confidential business information and employee error.

A more extensive list of risk factors associated with our business can be found in the Company’s 2017 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 risks that are rated as having a higher likelihood of occurrence than other risks and/or a higher severity of impact than other risks, commenting on the trend and the status of the risk at the time of the report. The Audit Committee periodically reviews 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, Corporate Controller and the Company's independent auditors. The Audit Committee also reviews the Company's activities to mitigate cybersecurity risk, such as network security, data encryption, employee training and other measures to protect its systems and data from unauthorized access or misuse. The Technology and Product Development Committee oversees risk in the Company's technology and product development initiatives. 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 an 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. 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 the CEO, the other executive officers, and other 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 2017, 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 the 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 2018 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 2017 and which the Audit Committee believes is well qualified to continue.

Ernst & Young LLP has audited the Company's financial statements since our initial public offering in 2000. Prior to recommending the re-appointment of the Company's independent auditor each year, the Audit Committee receives input from the Chief Executive and Chief Financial Officer on management's relationship with the auditor and input from the independent auditor on the engagement. In its decision to recommend re-appointment, the Audit Committee also considers the fees charged by the independent auditor and the potential benefits and challenges from switching independent audit firms. The audit engagement partner assigned to the Company's account rotates every 5 years, and the Audit Committee provides oversight and input to the selection of a successor audit engagement partner, along with management.

Representatives of Ernst & Young LLP 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 audit fees billed for, and other fees billed in, each of the last two fiscal years for professional services rendered by Ernst & Young LLP were as follows:

	2016	2017
<b>Audit Fees</b>	\$1,567,250	\$1,665,410
<b>Audit Related Fees</b>	\$23,995	\$46,842
<b>Tax Compliance, Preparation of Returns and Tax Planning</b>	\$106,110	\$59,912
<b>All Other Fees</b>	\$-	\$-
<b>Total Fees</b>	<b>\$1,697,355</b>	<b>\$1,772,164</b>

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. Tax fees may include international tax planning, relating 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. 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 2016 and 2017 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 2018 notwithstanding a negative stockholder vote.

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

### PROPOSAL 3: 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 stockholder value by (i) retaining executive talent through pay opportunities 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 through payouts tied to performance. Details of the 2017 compensation provided to the NEOs may be found in the “*Executive Compensation—2017 Compensation Discussion and Analysis*” and the accompanying tables in this proxy statement. Key features of NEO compensation in 2017 were:

- **2017 Target Pay was a Balanced Mix of Base and Short- and Long-Term Incentive Pay with a Strong Emphasis on Performance-Based Awards.**
  - In 2017, the NEOs received target base, annual incentive and equity grant compensation that aligned well with elements of peer executive compensation targets. Treating all equity grants as performance based since their value depends on the Company’s performance, 72% of the total target compensation of the Company’s chief executive officer (Mary G. Puma) was performance based, and 59% (on average) of the other NEOs’ 2017 total target compensation was performance based.
  - Looking only at short term performance compensation, in addition to the annual cash incentive, 25% of each NEO’s 2017 restricted stock units were subject to vesting based on seven 2017 performance goals. The 2017 annual cash incentive target compensation and the 2017 performance vesting RSUs (valued at the grant date) represented 39% of Ms. Puma’s total target compensation and 33% (on average) of the other NEOs’ 2017 total target compensation.
- **2017 Realized Short Term Performance Based Compensation was Above Target due to Strong Performance.**
  - NEOs realized 2017 short term performance compensation above the target pay established for the year as a result of strong financial results. The payout under the 2017 Axcelis Management Incentive Plan, based on the Company’s revenue and operating profit performance against targets, was 183.7% of target. For the performance vesting RSUs granted in 2017, four of the seven 2017 operational goals were achieved, each weighted 20%, so 80% of the 2017 performance RSUs vested, and 20% have forfeited.
  - As a result, valuing the vested performance RSUs at the closing price on December 31, 2017, Ms. Puma earned 163% of her target short term performance based compensation and the other NEOs earned an average of 165% of their short term target incentive compensation. See “*Executive Compensation—2017 Compensation Discussion and Analysis—Executive Summary of Axcelis 2017 Executive Compensation.*”

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 expect to 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 2017 compensation of the Company's named executive officers.**

## EXECUTIVE COMPENSATION

### 2017 Compensation Discussion and Analysis

This 2017 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 at December 31, 2017, who are 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 2017.

### Executive Summary of Axcelis 2017 Executive Compensation

#### ***2017 Business Environment.***

Axcelis designs, manufactures and services ion implantation and other processing equipment used in the fabrication of semiconductor chips. Our Purion platform family of ion implanters are, we believe, the most innovative implanters available on the market today. We sell to leading semiconductor chip manufacturers worldwide. In addition to equipment, we provide extensive aftermarket lifecycle products and services, including used tools, spare parts, equipment upgrades, maintenance services and customer training.

2017 was an exciting year for the Company, thanks to a strong semiconductor equipment market and our Purion ion implantation platform. Our 2017 revenues of \$410.6 million were 54% above our 2016 revenues, and our highest revenues since 2006. Full year 2017 gross margin was 36.6% compared to 37.3% in 2016. 2017 gross margin was impacted by a \$6.2 million excess inventory reserve charge taken on legacy tools and parts in the fourth quarter of 2017, which reduced full year 2017 gross margin by 1.5 percentage points. Without the impact of this excess inventory charge, gross margin in 2017 would have been at the Company's highest annual level in 11 years.

In 2017, Axcelis made progress towards our long-term strategic goal of regaining a position of market share leadership in the ion implant semiconductor equipment market, and we estimate our 2017 market share to be 27% based on an estimated total available market of \$1 billion. During the year, our customer base for Purion ion implanters expanded significantly. Systems revenue grew by 89% from 2016 to 2017, with Purion ion implanters representing 87% of 2017 systems revenue. During the year, Axcelis shipped Purion systems to 18 new customer fabs. Seven of these sites represent new Purion customers, and the other eleven locations are first in fab Purion placements by existing Purion customers.

In 2017 we continued to invest a significant portion of our resources in research and development programs related to our Purion ion implantation platform. We also worked hard to ensure that manufacturing and operating expense levels remain well aligned to business conditions.

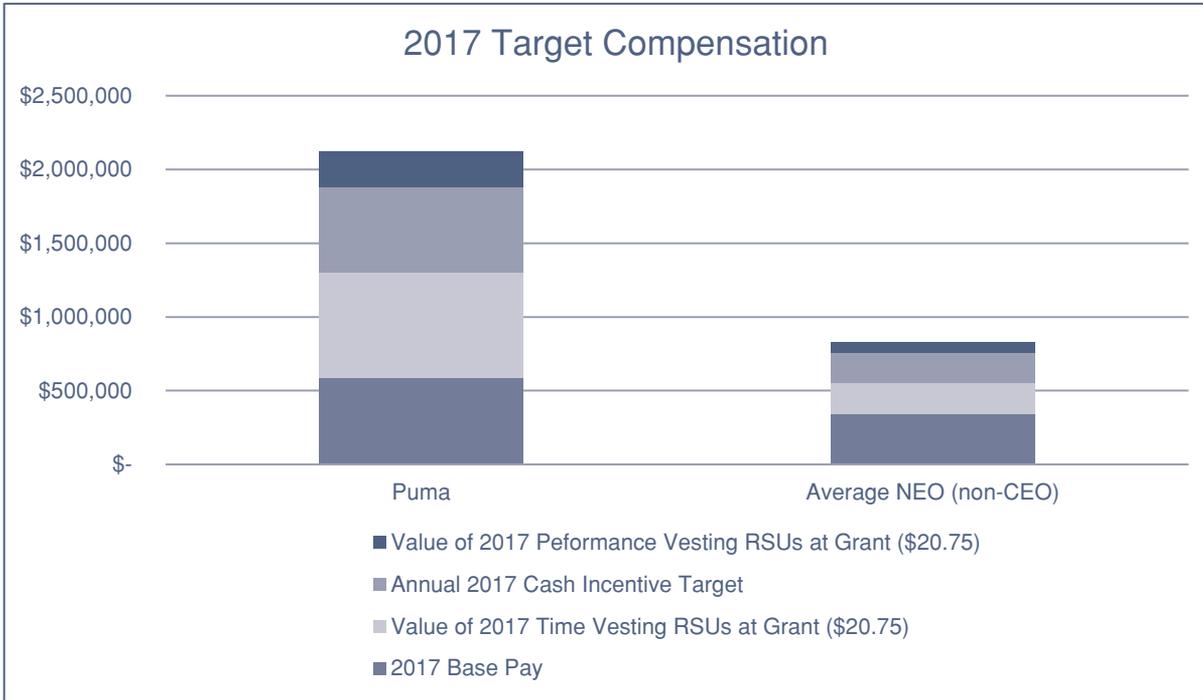
### **2017 Say-on-Pay Vote**

At our 2017 annual meeting, approximately 98.6% of votes cast were in favor in the advisory vote on 2016 executive compensation (commonly referred to as “Say-on-Pay”). This was slightly higher than the percentage approval in the Say-on-Pay vote regarding the Company’s 2016 executive compensation.

The Compensation Committee of our Board of Directors considered that the results of the 2017 Say-on-Pay vote validated our general approach to executive compensation. Accordingly, our 2017 cash compensation structure was unchanged from 2016, with executive officers receiving base salary and an annual cash incentive tied to financial metrics. As in 2016, the 2017 equity grants were in the form of restricted stock units, of which 25% of the grant was subject to vesting based on the achievement of seven 2017 operational performance goals, each of which was weighted 20%, allowing full vesting on the achievement of five goals. Pearl Meyer reviewed the plan structure and compensation levels in November 2016 and reported that our executive pay opportunities are at or below that of our peers while our financial and stock price performance is at or above that of our peers.

### **2017 Executive Target Compensation Balanced Service and Performance Based Components.**

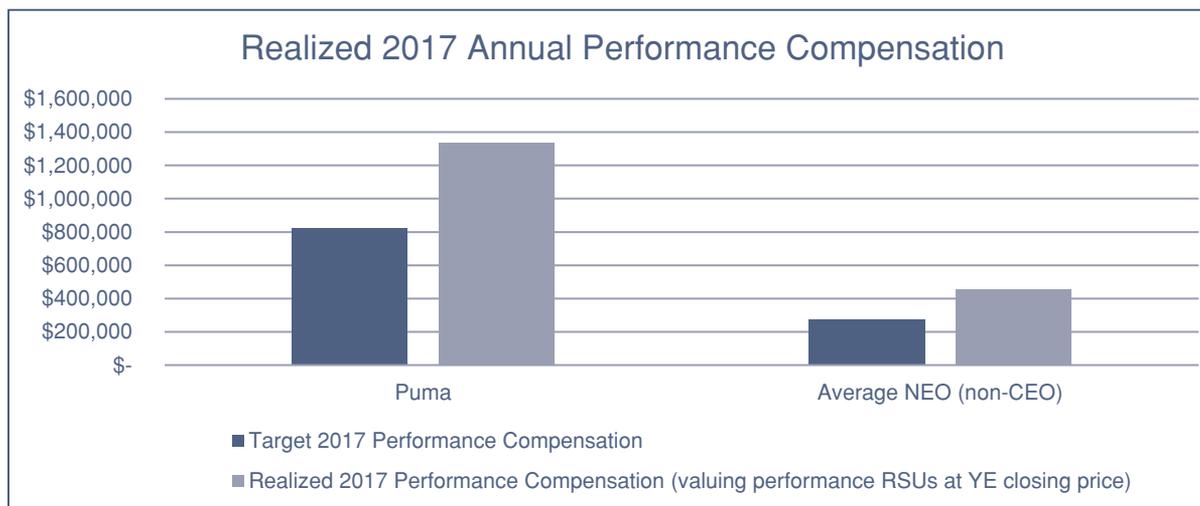
- In 2017, the NEOs’ target base, annual incentive and equity grant compensation components aligned well with elements of peer executive compensation targets.
- Base salary represented 28% of the total target compensation of the Company’s chief executive officer (Mary G. Puma) and 41% (on average) of the other NEOs’ 2017 total target compensation.
- Short term performance based compensation, comprised of the 2017 annual cash incentive target compensation and the 2017 performance vesting RSUs (valued at the grant date), represented 39% of Ms. Puma’s total target compensation and 33% (on average) of the other NEOs’ 2017 total target compensation.
- The remaining 33% of Ms. Puma’s compensation, and 26% of the other NEOs, was comprised of time-vesting RSUs, the value of which is tied to the equity value of the Company.



**2017 Realized Short Term Performance Based Compensation was Above Target.**

The 2017 short term performance compensation realized by the NEOs was above the target pay established for the year. The 2017 Axcelis Management Incentive Plan paid out at 183.7% of target, based on the Company’s revenue and operating profit performance against targets. On the other hand, not all of the performance vesting RSUs granted in 2017 vested. Four of the seven 2017 operational goals were achieved, each weighted 20%, so 80% of the 2017 performance RSUs vested, and the remainder have forfeited. As a result of the 2017 AMI score and the reduction in shares issued on the 2017 performance vesting RSUs, valuing the vested performance RSUs at the closing price on December 31, 2017, as shown in the chart below, Ms. Puma earned 163% of her target short term performance based compensation and the other NEOs earned an average of 165% of their target short term performance based compensation. See “Executive Compensation—2017 Compensation Discussion and Analysis—Executive Summary of Axcelis 2017 Executive Compensation.”

The chart below shows Ms. Puma’s realized short term performance based compensation in comparison to her target short term performance based compensation and average information for the other four NEOs:



### Compensation Philosophy and Governance Practices

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

(1) motivate and retain executive talent by offering total target compensation with a proportion of performance-based compensation that aligns with median compensation in those categories 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 on annual goal achievement and 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 stockholder outreach;
- Annual or biennial 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 below industry burn rates and acceptable voting power dilution;

- Executive stock ownership guidelines;
- Double trigger change of control benefits for executives, with no excise tax indemnifications or gross ups for new executives, and a phase out by 2020 of excise tax indemnification and gross ups in legacy 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; and
- No executive perquisites.

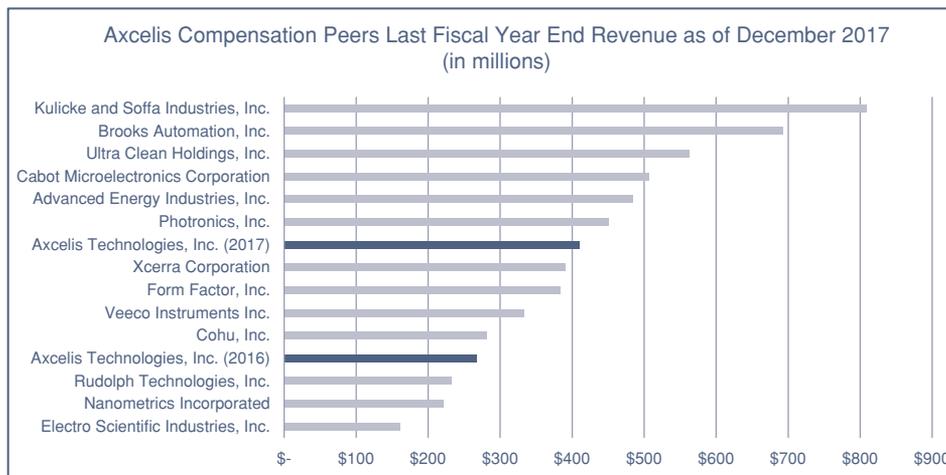
### **Review of Executive Compensation in 2017**

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.

The Compensation Committee engaged an outside compensation consultant, Pearl Meyer, to assist with compensation decisions throughout 2017. The Committee also referred to Pearl Meyer's report from November 2016 on both cash and equity compensation for each of the executive officer positions at Axcelis in comparison to market data. The Committee assessed Pearl Meyer's independence in light of the SEC rules and Nasdaq listing standards and determined that no conflict of interest or independence concerns exist.

The Company's 2017 peer companies ("2017 peers") were selected by management, the Compensation Committee and Pearl Meyer based on the companies' participation in the semiconductor equipment industry, with revenues ranging from 60% to 303% of Axcelis' 2016 revenues. In comparison to the Company's 2016 peer group, one peer (Ultratech) was removed as a result of its acquisition by Veeco Instruments Inc., another peer.

The chart below names the thirteen 2017 peers ranked by revenue for the most recently completed fiscal year as of November 2017, in comparison to Axcelis (shown both with 2016 and 2017 revenues):



Axcelis 2016 revenue was 68% of the peer group median. In developing their report in November 2016, compensation information from these 2017 peers was obtained from proxy statements and other filings available at that time. While this peer group represents a broad revenue range with some peers at higher revenues, Axcelis competes for talent against all other companies in the semiconductor industries, many of which have higher revenues. Our 2017 revenues were 105% of the peer group median, and we believe our revenues will continue to increase in the coming years.

In developing benchmark information for the compensation of Axcelis' executives, Pearl Meyer used compensation information from the peer group but also data from a proprietary global technology survey, reflecting companies of approximately the same size as Axcelis. The weight of peer group information and compensation survey data information used to develop compensation benchmark data for each of the Axcelis executive officers varies by the position, depending on the availability of data for that position from the peer group.

Based on the November 2016 benchmarking, Axcelis' CEO target total compensation was at 77% of the market median benchmark, and positioned at the 30<sup>th</sup> percentile. For the other executives, target total compensation ranged from 70% to 98% of median benchmark, positioned between the 20<sup>th</sup> and 45<sup>th</sup> percentile. Benchmarking showed that the design of, and metrics used in, the Company's annual incentive plan, the 2017 Axcelis Management Incentive Plan, were within market practice at similar companies.

Benchmarking also showed that Axcelis' executive equity compensation, using Black Scholes grant date fair value, lagged the market, but was competitive under an opportunity perspective, which looks at grants as a percentage of shares outstanding. Pearl Meyer noted that Axcelis' 2017 equity grant burn rate was modest relative to market.

As a result of the foregoing review, Ms. Puma's and Mr. Brewer's base salary were increased in February 2017. Despite the lagging value, compared to the benchmark, of the 2016

annual equity grants for executives, the 2017 annual equity values were decreased by approximately 20% in comparison to 2016 in order to contain expenses in 2017.

### Material Elements of Named Executive Officer Compensation

The table below lists the key elements of NEO compensation, why Axcelis has chosen to pay each compensation element, and 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 opportunities for each element of compensation at levels that consider both the market median benchmark for the position and the contribution and experience of the particular executive.
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 stockholder value through equity grants that deliver value on goal achievement and with stock price appreciation, resulting in appropriate pay-for-performance.	

The following discussion explains how, in 2017, each compensation element and the Company's decisions regarding that element fit into the Company's overall compensation objectives and affected decisions regarding other elements.

#### Base Salary

The Company pays a base salary to each of its NEOs. Base salary 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 salary is a factor in calculating annual incentive cash compensation or equity grants, when fixing or adjusting base salary, the Compensation Committee will consider the impact of a change on these other compensation components. In February 2017, the Compensation Committee increased Ms. Puma's base salary by 6.4%, and increased Mr. Brewer's base salary by 10%, in each case positioning base salary more closely to market median as reported by Pearl Meyer.

#### Annual Cash Incentive—2017 Axcelis Management Incentive Plan

In February 2017, the Compensation Committee adopted the Company's annual cash incentive plan, the 2017 Axcelis Management Incentive Plan (the "2017 AMI"). Approximately 130 management-level employees participated in the 2017 AMI, each of whom was assigned a target payout, expressed as a percent of base salary. As in 2016, the Committee set the 2017 AMI target for Ms. Puma at 100% of her base salary, and for each of the other NEOs at 60% of their respective 2017 base salary.

Pearl Meyer, in their November 2016 executive compensation review, concluded that the metrics used in the Company's 2016 annual cash incentive plan were supported by peer and survey data. Based on this, and the relevance of revenue and operating profit to the Company's long term goals, the Committee used the same metrics for the 2017 AMI. Revenue growth is a critical metric for the Company, as we seek to grow market share. Operating profit is viewed as preferable to net income, since it eliminates factors outside the control of management. The table below shows the metrics established for the 2017 AMI, setting 0%, 100% and 200% level scores for 2017 revenue and operating profit.

Metric	Weight	Minimum Level (0% Score)	Target Level (100% Score)	Maximum Level (200% Score)
<b>2017 Revenue</b>	50%	\$267.0M	\$349.9M	\$436.2M
<b>2017 Operating Profit (before AMI payout)</b>	50%	\$ 16.6M	\$ 43.7M	\$ 61.1M

The levels of revenue and operating profit in the 2017 AMI were chosen so that the revenue and operating profit expected in the 2017 profit plan would result in a meaningful score, with the minimum and maximum levels set at a reasonable range around the expected performance. The minimum revenue and operating profit targets were set at the actual results in 2016, so that no score would be achieved if the Company's 2017 performance on those metrics was not improved over 2016.

Under the 2017 AMI plan design, actual 2017 financial performance is compared to these metrics, and a weighted score developed, interpolating scores for performance achievement between the metric levels. The total at-target (a 100% score) payout of the 2017 AMI would have equaled approximately \$5.2 million. The 2017 AMI score is capped at a 200% payout. The Compensation Committee had the authority to adjust the funding for extraordinary items and other qualitative aspects of the Company's 2017 performance (using benchmarks and budgets) to ensure that the score reflects actual performance and not extraordinary events and is otherwise appropriate. As designed, actual payouts would equal the individual participant's target payout, multiplied by the AMI score and then multiplied by an individual performance score determined by the individual's manager, or the Compensation Committee, in the case of the NEOs. Individual performance scores could range from 0% to 150%, provided such individual adjustments could not increase the aggregate payout amount for all participants without Compensation Committee approval.

In February 2018, the Compensation Committee determined that the final 2017 AMI score was 183.7%, based on the Company's revenue and operating profit for the year, exceeding the target levels as shown in the chart below:

Metric	Weight	Target Level (100% Score)	Maximum Level (200% Score)	2017 Actual	Score
<b>2017 Revenue</b>	50%	\$349.9M	\$436.2M	\$410.6M	170.3%
<b>2017 Operating Profit (before payout)</b>	50%	\$ 43.7M	\$ 61.1M	\$ 60.6M	197.1%
<b>Weighted Score</b>					183.7%

The Committee also set the individual performance score for each NEO at 100%, since executive officer performance expectations had been met, and the Company's 2017 profit plan targets had been exceeded. These scores resulted in the 2017 non-equity incentive plan compensation amounts shown in the *2017 Summary Compensation* table below. A payout of the 2017 AMI was made in March 2018.

### **Long-Term Equity Incentive Compensation**

***Equity Compensation Philosophy.*** Equity compensation for NEOs, which at the Company has taken the form of stock options and restricted stock units, 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. In addition, performance-vesting RSUs will only convert to shares if performance goals are achieved. Thus, equity grants should constructively influence management's motivation to enhance the value of the Company's stock and achieve strategic objectives.

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 with long-term stockholder interests. Ms. Puma is required to own shares having a value equal to three times her base salary. The other NEOs are required to own shares having a value equal to 1.5 times base salary or, if less, 16,250 shares. Until an NEO meets the requisite stock ownership level prescribed by the stock ownership guidelines, the NEO is encouraged to retain 50% of the net 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 prohibiting hedging and pledging our common stock, which are discussed above under "*Corporate Governance.*"

***Equity Compensation Processes.*** Equity grants to executives are made upon hire and, typically, on an annual basis thereafter. 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 long-term 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.

From 2008 through 2015, our Compensation Committee selected stock options as the main form of equity grant because our low share price allowed for significant potential 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. During that period, we also used 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. In 2017, most of our 2017 peers were also using a combination of time-vesting and performance-vesting RSUs as their equity awards.

It is the Committee’s general practice to approve equity awards with a future effective date, usually on the 15<sup>th</sup> (or the next succeeding trading day) of a month following the approval, with annual equity grants approved in February and made in May. 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.

In February 2017 when the Committee established the 2017 Axcelis Management Incentive Plan, it also set the value for the 2017 annual equity grants to the NEOs, which were made in May 2017.

**2017 Annual Equity Grants.** In February 2017, the Compensation Committee determined that, as in 2016, RSUs would be used as the form of equity compensation for the annual executive equity grants, with 75% vesting on a time basis, and 25% tied to performance goals.

The Compensation Committee fixed values for the 2017 RSU grant to each NEO at levels equal to approximately 60% of the median peer group and survey benchmark for the position in November 2016. These below-benchmark equity grants were approved in order to control expenses in 2017. The number of units for each RSU grant was determined by dividing an approved grant value by the average closing price of the Company’s common stock as reported by Nasdaq over a 30-day period ending three trading days prior to the grant date. The 2017 RSU grants to NEOs are set forth in the *Grants of Plan Based Awards in Fiscal 2017* table below.

The Committee determined that 75% of the 2017 RSUs will vest at the rate of 25% on each of the first four anniversaries of the date of grant until fully vested in May 2021 (assuming continuation of employment). The remaining 25% of the 2017 RSUs granted to the NEOs were subject to vesting in February 2018 based on the achievement of seven performance objectives established for the 2017 calendar year by the Committee. Each of the seven objectives was weighted 20%, so achievement of five would result in 100% vesting. Partial achievement of a goal is not counted, and under no circumstances will there be more than 100% vesting. These performance objectives related to: the closure of a Purion H ion implanter evaluation placement at, and the receipt of new orders from, a specific customer; the shipment of a Purion H to a leading edge logic customer; achievement of specific standard margin goal for the Purion H; achievement of a goal for upgrade revenue; receipt of a Purion VXE order from a specific customer; achievement of specific particle performance objectives; and achievement of a system revenue goal in China. Disclosure of the customer names and exact financial and technical goals for these performance objectives would violate customer confidentiality agreements and provide

sensitive information to the Company's competitors. In February 2018, the Compensation Committee determined that the Company met four of the seven performance objectives, and accordingly, 80% of the 2017 performance RSUs vested, with the remaining 20% forfeiting.

### **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 2017 relating to this Employment Agreement, which renews automatically each year.

The Company has Executive Separation Pay Agreements with each of the NEOs other than Ms. Puma, which provide that in the event of a termination without cause, the executive will continue to receive base salary for 12 months. If the NEO elects to continue health coverage under COBRA, the Company will waive 12 months of COBRA premiums. In addition, the Company will provide transition support having a value of \$15,000. No action was taken with respect to these agreements in 2017.

Each of the NEOs has a double-trigger Change of Control Agreement with the Company entered into in 2013 or earlier (the "Legacy Change of Control Agreements"), described below under "*Payments on Termination or Change of Control.*" The Legacy Change of Control Agreements provide severance compensation in a lump sum within 30 days of a covered termination following a change in control, as defined in the agreement. In the Legacy Change of Control Agreements, the Company agreed to reimburse the executive for any excise taxes due under Sections 280G and 4999 of the Internal Revenue Code, on a grossed-up basis. In 2017, Axcelis gave notice to the NEOs that their Legacy Change of Control Agreements will not automatically renew at the next roll-over date. As a result, the Legacy Change of Control Agreements with the NEOs will terminate on November 6, 2019, except in the case of Mr. Aldeborgh, whose agreement will terminate on February 13, 2020. This action was consistent with our 2014 governance policy against any new commitments to reimburse excise taxes due on change of control payouts under Sections 280G and 4999 of the Internal Revenue Code. See above "*Corporate Governance—Governance Policies,*"

If the Change of Control Agreement applies, the NEO will receive the greater of the change of control payout or the payout under the Executive Separation Pay Agreement (or in the case of Ms. Puma, under her Employment Agreement).

Also in 2017, the Compensation Committee approved the entry into a new Change of Control Agreement with each of the NEOs, which will take effect on the expiration of the Legacy Change of Control Agreements in 2019 and 2020. The new form of Change of Control Agreement, which is also a double trigger agreement, provides for lower separation pay, and does not include a grossed up indemnification for 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 2016, the Compensation Committee eliminated an Executive Officer Tax and Financial Planning benefit which provided for a reimbursement, on request of the executive, of up to \$5,500 of an executive's annual tax and financial planning expenses. This program was the only executive perquisite at Axcelis. Accordingly, no reimbursements were made under this program in 2016 or 2017. Mr. Brewer received a reimbursement under this program in 2015, which is included in the "All other compensation" column in the *2017 Summary Compensation Table*.

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. For 2017, the Company made a matching contribution to the 401(k) plan at the rate of 50% of the employee's pre-tax contributions up to the first 6% of eligible compensation contributed to the plan. Employer contributions to NEOs participating in the 401(k) plan are included in the "All other compensation" column in the *2017 Summary Compensation Table*.

The Company does not maintain for the NEOs either a defined benefit pension plan or any non-qualified deferred compensation plans.

NEOs may also participate in the Company's medical and dental insurance offerings on the same basis as full time Company employees generally by electing to make payroll deductions designed to cover approximately 25% or 30% of the cost of those programs (the Company covers the remaining 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. None of the NEOs participated in the Employee Stock Purchase Plan in 2017.

## **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 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 2017, 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 incentive compensation is made pursuant to written plans, subject to calculation and approval by senior management and the finance department, and tied to actual receipt of payments from the customer;
  - Payouts under the Company's European and Asian annual cash incentive plan are in the discretion of senior management, which considers both qualitative and quantitative assessments of performance; and
  - Payouts under the Company's US annual cash incentive plan 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. Compensation that is "qualified performance-based compensation" under Section 162(m) of the Internal Revenue Code was excepted from this disallowance through 2017. Beginning in 2018, under the Tax Cuts and Jobs Act of 2017, performance-based compensation that was not under a written binding contract in effect at November 2, 2017 will not be excepted from the \$1 million deduction limitation.

Our stock options and performance-vesting RSUs were intended to be "qualified performance-based compensation" in 2017 and earlier years, and those equity grants outstanding

at November 2, 2017 will continue to be exempt from the \$1 million deduction limitation under Section 162(m). However, it is possible that awards intended to qualify for the tax deduction will not qualify if all requirements of the “qualified performance-based compensation” exemption are not met.

The Compensation Committee believes that tax deductibility 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. Accordingly, the Committee may approve compensation that is not deductible for federal income tax purposes in the future.

## **2017 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,

R. John Fletcher, Chairman  
Arthur L. George, Jr.  
John T. Kurtzweil  
Patrick H. Nettles

## 2017 Summary Compensation Table

Name and Principal Position	Year	Salary (\$)(1)	Stock awards (\$)(2)	Option awards (\$)(2)	Non-equity incentive plan compensation (\$)(3)	All other compensation (\$)(4)	Total (\$)
<b>Mary G. Puma, Chief Executive Officer and President</b>	2017	\$579,615	\$951,042	\$ -	\$1,064,753	\$8,100	\$2,603,511
	2016	\$550,000	\$964,000	\$ -	\$ -	\$1,644	\$1,515,644
	2015	\$550,000	\$ -	\$426,000	\$ 394,350	\$1,000	\$1,371,350
<b>Kevin J. Brewer, Executive Vice President and Chief Financial Officer</b>	2017	\$379,616	\$345,833	\$ -	\$ 418,412	\$8,100	\$1,151,961
	2016	\$350,000	\$385,600	\$ -	\$ -	\$1,200	\$ 736,800
	2015	\$350,000	\$ -	\$319,500	\$ 150,570	\$1,518	\$ 821,588
<b>William Bintz, Executive Vice President, Product Development</b>	2017	\$330,000	\$276,667	\$ -	\$ 363,726	\$8,100	\$ 978,493
	2016	\$330,000	\$262,909	\$ -	\$ -	\$1,441	\$ 594,350
	2015	\$330,000	\$ -	\$284,000	\$ 141,966	\$2,000	\$ 757,966
<b>John E. Aldeborgh, Executive Vice President, Global Customer Operations</b>	2017	\$330,000	\$276,667	\$ -	\$ 363,726	\$ -	\$ 970,393
	2016	\$330,000	\$262,909	\$ -	\$ -	\$ -	\$ 592,909
	2015	\$330,000	\$ -	\$284,000	\$ 141,966	\$ -	\$ 755,966
<b>Lynnette C. Fallon, Executive Vice President, HR/Legal and General Counsel</b>	2017	\$320,000	\$242,083	\$ -	\$ 352,704	\$8,100	\$ 922,886
	2016	\$320,000	\$245,382	\$ -	\$ -	\$1,533	\$ 566,915
	2015	\$320,000	\$ -	\$213,000	\$ 137,664	\$1,000	\$ 671,664

- (1) Base salary is set by the Compensation Committee, based on benchmarking using our peer group or survey data. Other than Ms. Puma, the named executive officers (NEOs) do not have employment agreements addressing base salary. Ms. Puma's employment agreement is described under the heading "Payments on Termination or Change in Control" in this proxy statement.
- (2) 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.
- (3) Non-equity incentive plan compensation in 2017 and 2015 represents amounts that were paid under the 2017 and 2015 Axcelis Management Incentive Plans, as described in the "Compensation Discussion and Analysis" in this Proxy Statement and in the Proxy Statement for our 2016 Annual Meeting. No non-equity incentive plan compensation was paid in respect of the 2016 Axcelis Management Incentive Plan, as described in the "Compensation Discussion and Analysis" in the Proxy Statement for our 2017 Annual Meeting.
- (4) The amounts in this column represent (A) the amount to be paid in cash as a matching contribution to Axcelis' 401(k) plan in respect of contributions made by the NEO during the year, (B) amounts

reimbursed under the Company's Executive Tax and Financial Planning Reimbursement Program (which was discontinued in 2016), and (C) the value of service awards received in the year.

### Grants of Plan Based Awards in Fiscal 2017

Name	Grant Date	Date of Compensation Committee Approval(1)	Possible payouts under equity incentive plan awards(2)			All Other Stock Awards: Number of Shares or Units (#)(3)	Grant Date Fair Value of Stock and Option Awards(3)
			Threshold (#)	Target (#)	Maximum (#)		
Mary G. Puma	5/17/2017	2/15/2017	2,292	11,458	11,458	34,375	\$951,042
Kevin J. Brewer	5/17/2017	2/15/2017	833	4,167	4,167	12,500	\$345,833
William Bintz	5/17/2017	2/15/2017	667	3,333	3,333	10,000	\$276,667
John E. Aldeborgh	5/17/2017	2/15/2017	667	3,333	3,333	10,000	\$276,667
Lynnette C. Fallon	5/17/2017	2/15/2017	583	2,917	2,917	8,750	\$242,083

- (1) As discussed above in "2017 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 or near the 15<sup>th</sup> of a month following the approval. In 2017, the annual equity grants were approved in February with a grant date of May 17, 2017.
- (2) The NEOs were granted performance-vesting RSUs under the Company's 2012 Equity Incentive Plan effective May 17, 2017, which vest or forfeit on February 28, 2018 based on the achievement of performance goals for the calendar year 2017. As discussed above, these performance-vesting RSUs vested as to 80% of the shares granted on February 28, 2018. See "Long-Term Equity Incentive Compensation—2017 Equity Grants" in "2017 Compensation Discussion and Analysis" above.
- (3) The NEOs were granted time-vesting RSUs under the Company's 2012 Equity Incentive Plan effective May 17, 2017, which vest as to 25% of such shares on the each of the first four anniversaries of the date of grant, until fully vested on the fourth anniversary of the date of grant. Other than future services to the Company, no consideration was paid or will be due in order acquire these RSUs. The 2017 RSUs will be forfeited if the NEO's employment terminates prior to vesting, as described in the table entitled "Outstanding Equity Awards at Fiscal 2017 Year End." See "Long-Term Equity Incentive Compensation—2017 Equity Grants" in "2017 Compensation Discussion and Analysis" above.
- (4) Represents the grant date fair value of the equity awards received by the NEO in 2017, 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 2017.

## Outstanding Equity Awards at Fiscal 2017 Year End

Name	Option Awards					Stock Awards			
	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price (\$)	Option Expiration Date	Number of Shares or Units of Stock that Have Not Vested (#)(3)	Market Value of Shares or Units of Stock that Have Not Vested (\$)(4)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights that Have Not Vested (#)(5)	Equity Incentive Plan Awards: Market Value of Unearned Shares, Units or Other Rights that Have Not Vested (\$)(4)	
<b>Mary G. Puma</b>									
	62,500	0	\$ 6.40	7/15/2020					
	62,500	0	\$ 6.40	7/15/2021					
	62,500	0	\$ 7.96	7/15/2020					
(1)	56,250	18,750	\$ 7.20	7/15/2021					
(2)	42,188	32,813	\$12.04	7/15/2022					
					90,625	\$2,600,938	11,458	\$328,854	
<b>Kevin J. Brewer</b>									
(1)	0	14,063	\$ 7.20	7/15/2021					
(2)	0	24,610	\$12.04	7/15/2022					
					35,000	\$1,004,500	4,167	\$119,583	
<b>William Bintz</b>									
(1)	0	12,500	\$ 7.20	7/15/2021					
(2)	0	21,875	\$12.04	7/15/2022					
					25,341	\$ 727,283	3,333	\$ 95,657	
<b>John E. Aldeborgh</b>									
(1)	37,500	12,500	\$ 7.20	7/15/2021					
(2)	28,125	21,875	\$12.04	7/15/2022					
					25,341	\$ 727,283	3,333	\$ 95,657	
<b>Lynnette C. Fallon</b>									
(1)	28,125	9,375	\$ 7.20	7/15/2021					
(2)	21,094	16,406	\$12.04	7/15/2022					
					23,068	\$ 662,059	2,917	\$ 83,708	

- (1) Assuming continued employment, the unexercisable 2014 options will become exercisable as to the unexercisable shares on July 15, 2018.
- (2) Assuming continued employment, the unexercisable 2015 options will become exercisable in equal quarterly installments on each January 15, April 15, July 15 and October 15 until fully vested on July 15, 2019.
- (3) The NEOs were granted time-vesting RSUs under the Company's 2012 Equity Incentive Plan effective May 16, 2016 and May 17, 2017, which vest as to 25% of the shares on each of the first four anniversaries of the date of grant, until fully vested on the fourth anniversary of the date of grant.
- (4) The market value of the unvested RSUs held by the executives at December 31, 2017 was determined by multiplying the unvested RSUs by the closing price on December 29, 2017 of \$28.70.
- (5) Each of the executives were granted RSUs on May 17, 2017 that would vest or forfeit on February 28, 2018 based on the achievement of performance goals for the calendar year 2017. Of these performance vesting RSUs, 80% vested on February 28, 2018 and the remaining 20% forfeited. See "Long-Term Equity Incentive Compensation—2017 Equity Grants" in "2017 Compensation Discussion and Analysis" above.

## Option Exercises and Stock Vested During Fiscal 2017

Name	Option Awards		Stock Awards	
	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise (\$)(1)	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting (\$)(2)
Mary G. Puma	187,500	\$3,243,865	33,750	\$651,563
Kevin J. Brewer	273,681	\$4,176,958	13,500	\$260,625
William Bintz	233,625	\$3,598,383	9,205	\$177,703
John E. Aldeborgh	137,500	\$3,060,750	9,205	\$177,703
Lynnette C. Fallon	156,250	\$3,038,980	8,591	\$165,850

- (1) Represents the difference between the closing market price of Axcelis common stock 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.
- (2) Represents the closing market price of Axcelis common stock on the date of vesting multiplied by the number of shares vested. A portion of the vested shares were withheld for taxes and not issued to the NEO. 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. Ms. Puma's rate of pay for most of 2017 was \$585,000, which was implemented on Compensation Committee approval in February 2017. 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.

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, 2017:

Lump sum cash payment (1)	Value of accelerated vesting on equity awards (2)	18 months of COBRA premiums for health coverage (3)	Total
\$1,462,500	\$3,879,576	\$30,506	\$5,372,582

- (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, 2017 plus 24 months of a monthly bonus amount as specified in the agreement. The monthly rate of annual base salary (\$48,750) and monthly bonus amount (\$12,187) were calculated using her annual base salary of \$585,000 in effect at December 31, 2017, and the minimum bonus percentage of 25% (Ms. Puma did not receive a payout under the 2016 Axcelis Management Incentive Plan). 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. This valuation is based on the closing price of our common stock on the last trading day of 2017 (\$28.70). The actual amount received by Ms. Puma on exercise of options and the sale of shares issued on restricted stock units 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 2018 for Ms. Puma’s coverage elections. Actual COBRA rates will change on January 1, 2019.

**Executive Officer Separation Pay Agreements.** In March 2015, the Compensation Committee approved the execution of separation pay agreements with each of the NEOs other than Ms. Puma. These Executive Separation Pay Agreements provide that in the event of a termination without cause, the executive will continue to receive base salary for 12 months. If the NEO elects to continue health coverage under COBRA, the Company will waive 12 months of COBRA premiums. In addition, the Company will provide transition support having a value of \$15,000.

The NEO must provide a release of claims in order to receive the separation pay. The NEO will not be eligible to receive the severance payments and benefits described in the agreement in the event that (i) the executive’s employment is terminated by the Company for cause or due to executive’s death or disability, or (ii) the executive resigns from employment, regardless of the reason(s) for such resignation. These agreements expire on March 5, 2020. The following table

sets forth the separation pay that would have been due to these NEOs under their respective Executive Separation Pay Agreements if a qualifying termination occurred on December 31, 2017:

	Cash Separation Pay (1)	Value of transition assistance (2)	12 months of COBRA premiums for health coverage (3)	Total
Kevin J. Brewer	\$385,000	\$15,000	\$20,337	\$420,337
William Bintz	\$330,000	\$15,000	\$20,337	\$365,337
John E. Aldeborgh	\$330,000	\$15,000	\$27,939	\$372,939
Lynnette C. Fallon	\$320,000	\$15,000	\$27,385	\$362,385

- (1) This amount represents 12 months of the NEO's annual base salary in effect on December 31, 2017. This amount would be paid in 26 bi-weekly installments.
- (2) In the event separation pay is due, the Company will provide transition assistance to the NEO having a value of \$15,000. The Company will work with the executive to provide assistance that meets the needs of the executive, and will offer support in accordance with the Company's practices for executive terminations generally.
- (3) The Executive Separation Pay Agreements provide that the Company will pay for up to 12 months of COBRA premiums. This amount represents 12 months of 2018 COBRA premiums for the executive's coverage elections for 2018.

**Change of Control Agreements.** Each of our NEOs has a Change of Control Agreement entered into in 2013 or earlier, that provide severance compensation in a lump sum within 30 days of a covered termination following a change in control, as defined in the agreement (the "Legacy Change of Control Agreements).

The Legacy Change of Control Agreements provide that the NEOs 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 Legacy Change of Control Agreements, "good reason" is generally defined as a material diminution in the executive's authority, a material reduction in base salary 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.

Under the Legacy Change of Control Agreements, 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.

The Legacy Change of Control Agreements provide for a non-competition covenant pursuant to which the executive may not to 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 Legacy Change of Control Agreements also provide for a non-solicitation covenant providing that 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 the Legacy Change of Control Agreements provides for the reimbursement of any excise tax due under Section 4999 of the Internal Revenue Code and any income tax due on such 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 Legacy 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 Legacy Change of Control Agreements with our NEOs.

The amounts due to each NEO under the Change of Control Agreements in the event that a change of control and termination occurred on December 31, 2017 are set forth in the table below:

Estimated Payments under the Change of Control Agreements if due at December 31, 2017				
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	\$4,182,750	\$3,879,576	\$2,690,376	\$10,752,702
Kevin J. Brewer	\$2,102,100	\$1,836,419	\$1,244,727	\$ 5,183,246
William Bintz	\$1,801,800	\$1,456,153	\$ 886,724	\$ 4,144,677
John E. Aldeborgh	\$1,782,000	\$1,456,153	\$1,033,543	\$ 4,271,696
Lynnette C. Fallon	\$1,776,000	\$1,220,658	\$ 988,904	\$ 3,985,562

- (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 the 2017 Axcelis Management Incentive Plan. See "Annual Cash Incentive" in "2016 Compensation Discussion and Analysis."
- (2) These amounts reflect a valuation of the acceleration of all of the NEO's outstanding equity awards using the methodology prescribed under IRC Section 280G, which provides for an excise tax on certain change of control payments. This valuation is based on the closing price of our common stock on the last trading day of 2017 (\$28.70). The actual amount received by the NEO on exercise of options or on sale of shares from vested restricted stock units 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 the reimbursement by the Company of excise taxes incurred by the NEO under IRC 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 would not be retained by the executive.

The Legacy Change of Control Agreements had a rolling three-year term. 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. Accordingly, a termination notice was sent to each of the NEOs in March 2017 which will cause these agreements to expire at the end of each agreement’s current three year term, which will be the third anniversary date of the agreement following the notice of termination. Accordingly, the Change of Control Agreements with Ms. Puma, Mr. Brewer, Mr. Bintz and Ms. Fallon will terminate in November 2019. Mr. Aldeborgh’s agreement will terminate in February 2020.

In November 2016, the Compensation Committee approved a new form of Change of Control Agreement which was determined to be market aligned. The new form of Change of Control Agreement, which is also a double trigger agreement, provides for lower separation pay, and does not include grossed up indemnification for excise or other tax due in respect of severance compensation, including pursuant to Sections 280G and 4999 of the Internal Revenue Code. The Company entered into this form of Change of Control Agreement with a new executive officer (not an NEO) in November 2016, and with all of the NEOs in March 2017, to take effect on the expiration of each NEO’s Legacy Change of Control Agreement.

#### **Ratio of CEO Pay to Median Employee Pay**

Ms. Puma’s total 2017 compensation was \$2,603,511, as determined for the purposes of the 2017 Summary Compensation Table above. This amount was approximately 36 times the total 2017 compensation of the median Axcelis employee, calculated on the same basis. We identified our median employee by estimating annual base salary for all Axcelis employees (excluding Ms. Puma) over the twelve month period ending October 1, 2017. To do this, we used the annual full time rate of pay as of October 1, 2017 for all employees, and then reduced the pay of those employees who, during the period (i) worked part time schedules, (ii) worked partial work years due to leaves and/or (iii) were newly hired. This median employee’s 2017 compensation, calculated on the basis required for the Summary Compensation Table, was \$72,715.

Since compensation levels have a strong correlation with revenue levels, and the composition of a workforce of any company varies significantly by the type of work the company does, Axcelis believes that the CEO pay ratio is only a useful metric when compared to the average pay ratios at similar companies.

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